Memorandum

To: Patricia McIlvaine, Acting Executive Director, LIHI

From: Jeffrey Cueto, P.E.

Date: December 28, 2012

Re: West Springfield Hydroelectric Project – LIHI Certificate #19
Recertification Request

This memorandum contains my recommendation for recertification of the West Springfield Hydroelectric Project (Project), located on the Westfield River in the Commonwealth of Massachusetts and owned by A & D Hydro, Inc. (A&D). LIHI publicly noticed the application for recertification on November 29, 2010; comments were received from the Massachusetts Division of Fisheries and Wildlife (DFW) (letter of January 19, 2011). The application contained certain deficiencies which A&D recently addressed.[1]

Fred Ayer did the original review in 2005 recommending that the facility be certified subject to resolution of certain fish passage issues by December 31, 2006.[2] The issues are described in a November 15, 2005 letter from DFW to LIHI. The recommendation is referred to in LIHI's December 9, 2010, transmittal letter for the certification, although the certification itself does not contain such as a special condition.

I. Recertification Standards.

Part V of LIHI's Certification Handbook (Updated December 2011) regarding Applications for Recertification ("Recertification Standards") provides that a "request for renewal of a previously-issued LIHI certification ("re-certification") will be granted at the conclusion of the term of the existing certification if re-certification is desired by the certificate holder, and so long as (1) there have been no "material changes" at the facility that would affect the certification and (2) LIHI's certification criteria have not been revised since the previous certification was issued by LIHI."

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[1] It should be noted for the record that this application was not subject to LIHI's Intake Review process, which was in development at the time the application was filed.

[2] "Staff recommended that the West Springfield Hydroelectric Project be certified, however, because of the issues concerning fish passage the Staff recommended that the Board condition the certification on the applicant and state and federal fishery agencies arriving at a solution for the three issues by December 31, 2006." (LIHI decision letter, December 9, 2005, p. 1)

The Recertification review criteria also provide that "[i]f the Application Reviewer can definitively determine from the submitted application materials, a review of the LIHI file containing the past certification decision(s), any public comments received during the application process, and any limited reviewer-initiated questioning by LIHI of the applicant and/or third parties, that the answer to both questions above is "no," the Application Reviewer will recommend re-certification approval to LIHI's Executive Director, and there will be no further application review."

II. No further application review is recommended.

I reviewed the materials submitted by A&D in support of its application. I also read the original LIHI reviewer report (November 18, 2005) and other materials related to the original application and post-certification documents contained in the FERC website eLibrary.

In my opinion, the aforementioned materials are sufficient to support a conclusion that a recertification decision can be made without going through the full initial application process.

III. There have been no "material changes" at the facility that would affect the certification.

In accordance with the Recertification Standards, "material changes" mean non-compliance and/or new or renewed issues of concern that are relevant to LIHI's criteria. I find that there are no instances of significant non-compliance or new or renewed issues of concern.

Flows and Fish Passage

The Project was relicensed in October 1994 based in part on a Memorandum of Agreement of February 2, 1994 with DFW and the USFWS addressing fish passage at the site. The Westfield River is a tributary of the Connecticut River and is located downstream of the first Connecticut River dam at Holyoke. Anadromous fish and eel use upstream fish passage facilities[3] that are currently in place at the Project to access 20 miles of river habitat located upstream. Flows are released at the dam and into the half-mile bypassed reach for operation of the two fishways and to accommodate upstream fish movement between the tailrace and the dam. Fish passage and bypass flows were key issues in the relicensing.

As stated in 2005, outstanding passage issues were:

- *Zone Of Passage (ZOP) modifications at the tailrace. This has been an area of concern since the fishway was first operated in 1996. Concrete Jersey barriers were placed in this area in order to direct flow toward the*

[3] The fishway for anadromous species (Atlantic salmon and American shad) were completed in 1995 and for American eel in 2001. Downstream passage is also provided.

project tailrace and create an attractive flow in the upstream ZOP. High flows after installation knocked one of these barriers over and moved another. Sandbags and rock debris have been placed in line with the remaining (but toppled) Jersey barrier in order to create the desired flow pattern. This arrangement has been somewhat effective, but requires rebuilding each spring. We believe that some permanent solution to the flow field problems at this site should be implemented. The project owners have agreed, but there is no timetable for the design and implementation of a solution at present.

- *Entrainment of Atlantic salmon smolt in the power canal. During the 2005 fish passage season a significant number of Atlantic salmon smolt were seen in the project forebay. When asked, A&D agreed to shut the project down for a day and drain the power canal- this seemed to flush the smolt form[sic] the canal. Possible causes for this increased entrainment include the reduced operation time of the automated trash rack rakes at the head of the power canal, or the reorientation of the trash boom at the headgate. Under previous ownership the autamitac [sic] rakes operated continuously, A&D have modified them to part time operation. These racks also serve as fish exclusion structures and the noise/motion of the automatic rakes may have helped keep smolt away from the racks. These racks are plastic and somewhat flexible- it is possible that holes or wide gaps have formed in these racks that are allowing the smolt to enter the power canal. We have suggested replacing the plastic racks with normal steel racks.*

  Before the 2005 fish passage season A&D moved the anchor location of the trash boom from the outboard corner of the headgate structure to the center of the minimum flow/downstream fish passage slots (approximately 25 feet further out on the dam). This configuration guided leaves and debris to the outermost slot for efficient passage over the dam. Unfortunately this configuration may have discouraged smolt from approaching the slots and directed them instead to the power canal. A&D have agreed to reconfigure the trash boom in a manner which should leave the area near the fish passage slots clear. We will evaluate the efficacy of this change during the 2006 fish passage season. Additional changes may be required if the smolt entrainment issue is not resolved in 2006.

DFW commented on the LIHI recertification application by letter dated January 11, 2011. DFW recommended that the certification be conditioned to address ongoing issues with 1) zone of passage (ZOP) modifications at the tailrace; 2) entrainment of Atlantic salmon smolts in the power canal; 3) upstream eelway maintenance; and 4) lack of protection for adult American eels migrating downstream. Two of these issues were issues that were identified by LIHI in 2005 and were to have been resolved by the end of 2006. As part of a recertification application review letter sent to the applicant by email of September 26, 2011, LIHI asked for an explanation as to why there are continuing fish passage issues.

After meeting with DFW and the USFWS in March 2011, A&D proposed the following resolution of the four issues:

1. **ZOP.** Retain the services of Alden Research Laboratory and design and implement permanent improvements by October 1, 2014.

2. **Salmon smolt entrainment.** As an interim measure, place the automated rack rakes at the head of the power canal and operate them continuously during the smolt migration season. As a permanent measure, design, fabricate, and install new, ¾-inch-clear-spacing fish exclusion racks on or before April 1, 2013.

3. **Eelway.** Rebuild the existing flood-damaged eelway and have it back in service by September 15, 2011. Improve the holding tank assembly as well as the water supply siphon feeding the tank and eelway. During those portions of the eel migration periods when DFW personnel are not staffing the eelway, A&D personnel will tend the eelway, as required.

4. **Eel downstream passage protection.** Watch for adult American eels in the tailrace and collect and preserve any injured or dead eels for delivery to DFW.

By email to LIHI dated August 23, 2011, DFW commented that A&D was on track to address issues raised by LIHI, which would presumably include the four listed issues. DFW stated it had "no issue with certification at this point." In its LIHI deficiencies response of September 24, 2012, A&D reported on its progress to date. The eelway has been rebuilt and will be operational in Spring 2013, and exclusionary racks have been fabricated and will also be in place at head of the power canal by April. By email on December 5, 2012, I confirmed with DFW that A&D is proceeding satisfactorily.

I found documentation in FERC eLibrary, that, in 2011, A&D failed to have the downstream passage system in operation by April 1 as prescribed in the license. DFW contacted A&D and FERC, which investigated and notified A&D by letter dated May 31, 2011 that this would be considered a violation of the license for the purposes of the formal project record. A&D blamed an administrative error. Under the terms of the LIHI certification, events of this nature are supposed to be reported to LIHI. This violation occurred after the certification expired.

Water Quality

Mass DEP provided comments by letter dated May 24, 2012, stating that the status of the Westfield River segment at the Project has not changed since the original LIHI certification. It is not 303(d) listed. The waters are Category 2, some uses attained and others not assessed. There is no record of water quality violations since 2005.

IV. LIHI's certification criteria have not been revised since the original certification became effective, September 26, 2007.

It is my understanding that LIHI's criteria, or the Board's interpretation of one or more criterion, that are applicable to the circumstances the Project have not changed in meaningful ways since the date of the original certification.

V. Conclusion.

In light of the above, I recommend recertification of the West Springfield Hydroelectric Project effective August 29, 2010 (the expiration date of the original certification), subject to the following conditions:

1. On or before October 1, 2014, A&D shall 1) design and implement permanent improvements for zone of passage as deemed necessary by the Massachusetts Division of Fish and Wildlife and the U.S. Fish and Wildlife Service and subject to consultation with and approval by those agencies and 2) notify LIHI of measures taken and completion to those agencies' satisfaction.

2. By April 1, 2013, A&D shall install the trashracks designed to exclude salmon smolts at the head of the power canal and shall so notify LIHI within one week of completion. During downstream passage periods, the racks shall be maintained to the satisfaction of the Massachusetts Division of Fish and Wildlife and the U.S. Fish and Wildlife Service.

3. A&D shall notify LIHI within one week of the start of operation of the eelway for the 2013 season.

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