REVIEW OF APPLICATION FOR CERTIFICATION OF MECHANICSVILLE HYDROELECTRIC PROJECT

This report provides review findings and recommendations related to the application submitted to the Low Impact Hydropower Institute (LIHI) by Rolland Zeleny (DBA Saywatt Hydroelectric, LLC)(Saywatt) for Low Impact Hydropower Certification of the Mechanicsville Hydroelectric Project (the Project) on the French River in the town of Thompson, Connecticut. FERC granted the Project an exemption from licensing on January 27, 1988 as Project No. 9611. Its single 275 kW turbine/generator unit has a ten year average production of 815,000 kWh. The original exemptee, Robert King, passed ownership to Saywatt on June 1, 2010.

Figure 1. Layout of the Mechanicsville Hydroelectric Project.

The LIHI application was deemed complete and publicly noticed on January 27, 2011. No comments were received during the notice period, which ended March 27, 2011.

Background

The falls at Mechanicsville are located approximately 0.2 mile upstream of the French River's confluence with the Quinebaug River, as shown in Figure 1. The Quinebaug River is a major tributary of the Shetucket River, which combines with the Yantic River in Norwich, Connecticut to form the Thames River 15 miles upstream of Long Island Sound in New London, Connecticut.

The Mechanicsville dam was originally constructed in the middle of the 19th century. The Putnam Light and Power Company constructed the first hydroelectric facility at the site in 1922. At that time, the facility diverted flows from the Quinebaug River to the French River to effectively triple the available flow for power production. Following the 1936 flood, the facility was abandoned. In 1965, the U.S. Army Corps of Engineers (USACE) completed construction of the West Thompson Flood Control Dam on the Quinebaug River directly upstream of the French River confluence. Consequently, Quinebaug River flows are no longer diverted to the French River impoundment. The USACE also operates two flood control dams within the French River watershed at Oxford, Massachusetts, the Hodges Village Dam and the Buffumville Dam).

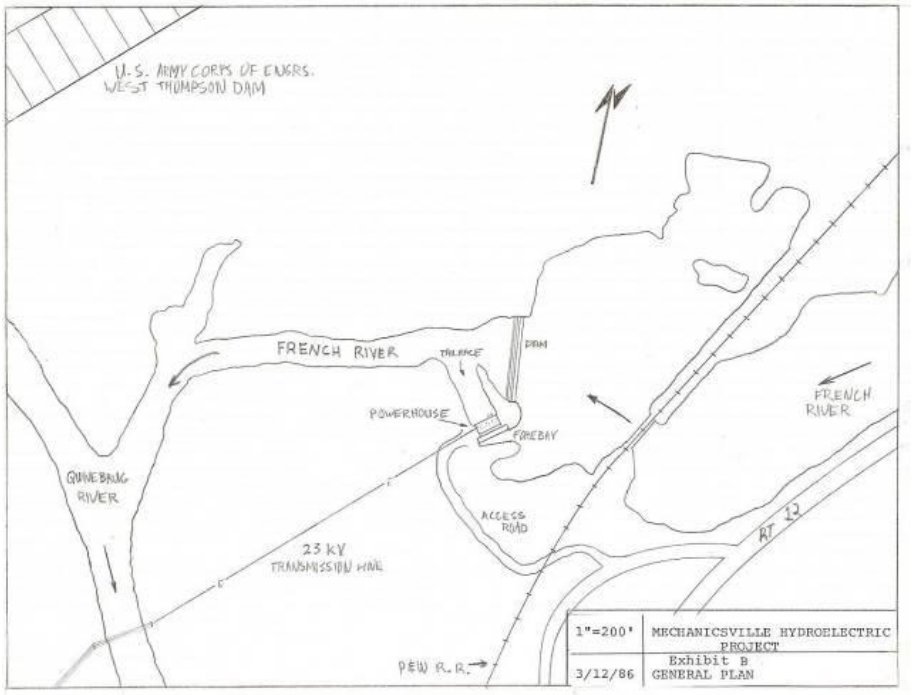

Figure 2. Mechanicville Hydroelectric Project site plan.

The Project consists of a 200-foot-long, 13-foot-high dam constructed of granite block and fitted with 2.0-foot flashboards; a 3,900-foot-long impoundment that has a surface area of 48 acres and a gross volume of 256 acre-feet; a brick and concrete powerhouse with an installed capacity of 275 kW; a 35-foot-long, 8.5-foot-deep forebay; a five-foot diameter, 20-foot long penstock; and a 100-foot-long, 55-foot-wide tailrace.

The tailrace, as shown in Figure 2, discharges into the plunge pool about 35 feet downstream of the toe of the dam. This limits the impact of the operation on bypass habitat.

The Project is located about nine miles downstream from another hydroelectric project on the French River in Webster, Massachusetts. Two other projects are located about three miles downstream on the Quinebaug River in Putnam, Connecticut. One of the Putnam projects, Putnam Hydro, is LIHI certified.

LIHI Criteria Review

Under each of the issue sections that follow, I include a table that contains the related LIHI questionnaire response by the applicant and my analysis and conclusions. Normally I would also include any comments received from the public or resource agencies, but, as indicated previously, none were filed in this case.

General Conclusions and Recommendations. I recommend that the facility be conditionally certified for the standard period of five years. The facility maintains bypass flows and true run-of-river operation consistent with terms set under the FERC exemption and a subsequent state diversion permit. There are no known listed T&E at the site. Recreational access is provided consistent with the federal exemption terms. No outstanding cultural resource issues are apparent in the record. The watershed protection criteria do not apply, and there is no watershed enhancement fund that would qualify the facility for extension of the certification term by three years. While the state water quality agency, for the purposes of the LIHI review, asserted that the Facility complies with state water quality standards and does not contribute to an existing impairment of the Quinebaug River, I recommend two conditions below that are essential to maintenance and protection of water quality. With respect to compliance with the fish passage criterion for diadromous fish, the Applicant is voluntarily working with the Connecticut Department of Environmental Protection (DEP) to enhance the passage of eels at the site; I recommend that the certification be conditioned to assure that the Applicant follows through with the assurances he has made. I could identify no other issues related to LIHI criteria. The Project meets all LIHI criteria in the reviewer's opinion, assuming the recommended conditions are incorporated into the certification.

Issue 1. Whereas the terms and conditions for the exemption require full removal of the flashboards during the critical summer period to protect water quality, the practice has been to remove only the top one foot. The agencies need to review this practice, determine whether it is acceptable, and, if so, amend the terms and conditions. The Applicant has stated that he will follow any agency decision.
Recommended condition. Saywatt shall consult with the U.S. Fish and Wildlife Service and the Connecticut Department of Environmental Protection ("agencies") to determine whether the existing practice of removing only one foot of flashboards during the period July through September is acceptable to the agencies. No later than July 1, 2012, Saywatt shall notify LIHI of the agencies' decisions and file supporting documentation from the agencies, such documentation to include modification of the exemption terms and conditions, if the decision is to continue with the current practice, to bring the Facility into compliance. Should the agencies determine that full removal of the flashboards is necessary to assure compliance with water quality standards, the existing practice shall be suspended by July 1, 2012.

Issue 2. The low-level orifices have the potential to result in excessive drawdowns during summer low-flow periods. This may damage wetlands associated with the impoundment and cause excessive turbidity downstream. The Applicant has expressed a willingness to block the orifices as necessary to maintain the impoundment level.
Recommended condition. To avoid inadvertent drawdowns below the top of the flashboards and protect water quality and upstream wetlands, Saywatt shall develop and implement a protocol in consultation

with the Connecticut Department of Environmental Protection that provides for blocking the dam sluices as necessary to maintain the impoundment level at or above the top of the flashboards. The protocol shall be filed with LIHI within one year of date of issuance of the LIHI certification along with a letter of concurrence from the Department.

Issue 3. The Facility does not provide effective eel passage.
Recommended condition. Within one year of the date of issuance of the LIHI certification, Saywatt shall enter into, and provide LIHI with a copy of, an agreement reached between the U.S. Fish and Wildlife Service, the Connecticut Department of Environmental Protection, and Saywatt for providing safe, timely, and effective upstream and downstream passage for American eel, including terms governing any operational modifications, such as increased spillage during outmigration; the final design of facilities, their construction, operations, and maintenance; and the implementation schedule for design, installation, and operations. LIHI may extend this deadline by up to six months if Saywatt provides letters of concurrence from the agencies.

Flows

The French River originates in the town of Leicester in south-central Massachusetts. At the Project site, it has a drainage area of 112 square miles.

The Project is semi automated and operates in a run-of-river mode for the protection of water quality, aquatic resources, and aesthetic values in the French River. The Project maintains a minimum spillage flow of 22 cfs, or inflow if less. The Project is able to operate when inflows exceed 86 cfs. Start up is manual. An upstream USGS gage is monitored. When it is judged that 86 cfs is available at the Project, the operator starts the turbine at its minimum setting. Control is then transferred to the automation equipment, which slowly ramps up the operation to establish run-of-river conditions (impoundment level at the top of the flashboards, elevation 303.5 feet msl) over a period of one to two hours.

Included in the terms and conditions set by DEP for the exemption is a requirement that 50 cfs be passed until full spillage is attained following plant shutdown and that such a condition not extend for more than ten minutes.

The French River supports, as characterized in the 1988 FERC environmental assessment (EA), a poor quality warmwater fishery consisting of largemouth bass, chain pickerel, pumpkinseed, white sucker, and brown bullhead. Anadromous fish are not currently present. In its exemption terms and conditions letter dated December 18, 1986, the U.S. Fish and Wildlife Service (USFWS) noted that instantaneous run-of-river operation would meet its New England regional August median flow requirement of 56 cfs (0.5 csm). The Department of Interior (DOI) filed the USFWS letter with FERC by letter dated August 31, 1987.

As mentioned above, the Facility maintains a minimum discharge of 22 cfs at the dam. The discharge is maintained through a combination of dam leakage and use of four 4 inch x 4 inch sluices in the dam structure. I asked the applicant for clarification as to reason that this spillage is

maintained since it is not included in the exemption terms and conditions record and the method for passing this flow. The applicant researched this and, by email of June 6, 2011, provided copies of two relevant documents. DEP apparently processed a diversion permit application (DIV-88-66) in 1989, after the exemption had been issued. As part of the review, the DEP Bureau of Fisheries (memorandum of February 8, 1989 to DEP Water Resources Unit) recommended maintenance of a bypass flow of 22 cfs for protection of "instream fisheries resources." The second document was a letter from the USFWS, dated May 8, 1986, indicating that 22 cfs should be spilled for reaeration due the "severe water quality problem in the French River" and concluding that no fish and wildlife studies would be necessary if that flow is maintained along with run-of-river operation. The sluices are essentially pipes with the inlet inverts set near the pond bottom at elevation 300 feet msl; they discharge near the base of the dam.

I inquired as to whether the use of sluices during summer low flow may result in inadvertent excessive drawdowns and whether converting to crest spillage during those periods would enhance reaeration. Saywatt is working with DEP to develop a protocol to block the sluices when necessary to reduce drawdowns.

LIHI Questionnaire: Flows	
A.1	**Is the Facility in *Compliance* with *Resource Agency Recommendations* issued after December 31, 1986 regarding flow conditions for fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations) for both the reach below the tailrace and all bypassed reaches?**
	Applicant Response and Explanation: **Yes** *The Project consists of a dam located on the French River, which originates in Leicester, Massachusetts just west of Worcester, Massachusetts. The French River discharges into the Quinebaug River, 1000 feet downstream of the Project area. The Quinebaug River eventually joins with the Shetucket and forms the Thames River. The Thames River flows into Long Island Sound in New London, Connecticut.* *The following flow parameters were extrapolated from 33 years of US Geological Survey (USGS) records for hydrologic gaging station No. 0112500, located on the French River in Webster, Massachusetts, about 9 miles upstream of the Project. Figures used to calculate flows for the Project are derived by taking a ratio of the drainage area at the gaging station and the Project site and multiplying the data from the gaging station by the ratio. The drainage area at the USGS gage is 86 square miles and the drainage area at the Project site is 112 square miles. Therefore a ratio of 112/86 or 1.3 is used. Flow parameters for the Project area are as follows:* • *Median flow: 145 cfs* • *Average flow: 230 cfs* • *Low flow exceeded 90 percent of the time: 26 cfs* • *High flow exceeded 10 percent of the time: 545 cfs* • *Minimum Prescribed Flow Over/Through the Dam: 22 cfs or inflow if less*

	• *Minimum Start Condition: 86 cfs (flow exceeded 65% of the time)* • *Shut Down: 10 minutes to full flow over the dam* • *Flashboards Lowered: Flashboards are lowered by 1 foot on or before July 1st and are replaced after October 1st only when flows exceed 86 cfs. This helps improve dissolved oxygen and lowers temperatures in the Project impoundment.* *The Project meets the minimum 22 cfs through the dam by passing water through four 16 square inch channels through the dam along with leakage through and over the dam and flashboards.* *The Project meets the minimum 86 cfs start condition by monitoring of the USGS gage on a daily basis and making operational decisions based upon real-time flows in the Project area.* *The Project meets the requirement of 10 minutes to full flow over the dam in the event of turbine shut-down by automatically controlling the pond elevation to a fraction of an inch of the top of the flashboards.* *The Project meets the flashboard requirements by removing flashboards each July 1st to lower the pond elevation by one foot.* *The Project dam creates a 48-acre impoundment that is 3,900 feet long, with a water surface elevation of 303.5 feet above msl.* *Downstream of the Project dam, there is virtually no by-pass reach. The powerhouse is located adjacent to the dam. The plunge pool at the base of the dam is in constant communication with the tailrace water and downstream river flow. If the plunge pool is defined as the bypass reach, it measures less than 35 feet from the toe of the dam to the confluence with the tailrace water. During the summer of 2010, we experienced historically low flows below 5 cfs on the French River. During these low flows, the plunge pool (bypass reach) never dried out. Despite this fact, the Project spills 22 cfs or inflow, if less, through the dam.* *The Mechanicsville Project is operated in a run-of-river mode for the protection of water quality, aquatic resources, and aesthetic values in the French River. The Project operates in a run-of-river mode and at all times maintains discharges from the Project so that the flow in the French River, immediately downstream of the powerhouse, approximates the instantaneous flows in the French River upstream of the Project.*
	Related Public Comments: None.

	Reviewer Analysis/Conclusions: The terms set by the USFWS and DEP include instantaneous run-of-river operation; suspension of operation when inflow is less than 86 cfs; and release of 50 cfs following plant shutdown (which is coupled with a stipulation that the return to outflow = inflow not take longer than ten minutes). The applicant also maintains a spillage flow of 22 cfs. Review of the last ten years of documents in FERC eLibrary revealed no compliance issues. **YES = PASS**

Water Quality

Because this project was granted an exemption by FERC, there is no state water quality certification. The FERC EA (1988) indicates that, while water quality downstream of the dam is good, upstream water quality varies from good to poor. Dissolved oxygen concentrations were typically 7.5 mg/l downstream of the dam but only 6.0 mg/l upstream. Dam spillage contributed significant reaeration. DEP prescribed terms and conditions for the exemption by letter dated August 27, 1987, including requirements to 1) remove the flashboards from July through September "to reduce the time of travel through the impoundment during low flow periods…[and] help protect water quality downstream of the dam by reducing the effects of sediment oxygen demand on the water column…" and 2) perform post-construction monitoring of water quality for one year with biweekly sampling. Article 11 of the exemption also requires dissolved oxygen monitoring. Saywatt provided a copy of DEP's letter of January 3, 1991 acknowledging the study results and releasing the exemptee from further monitoring. General water quality of the French River has improved since that time with improved wastewater treatment and control of industrial discharges.

Although the lower French River is not 303(d) listed, the segment has been proposed for 303(d) listing (recreation impairment) per the draft April 2011 integrated water quality report based on bacteriological problems. The segment of the Quinebaug River below the French River has also been biologically assessed and impairment of habitat for aquatic life is proposed, although the cause and source are indicated as unknown. That segment is currently listed for non-support of recreation due to bacteriological contamination. By email to DEP, I asked for concurrence that the Facility would not be a contributor to bacteriological contamination. I also asked for a general statement as to whether it is DEP's opinion that the Facility complies with state water quality standards. By email of July 18, 2011, Brian Golembiewski, Environmental Analyst, DEP confirmed that the Facility does not contribute to the biological contamination problem and complies with water quality standards.

My review disclosed a technical noncompliance issue. Whereas the terms and conditions set by both DEP and the DOI require that flashboards be removed during the period July through September, the Facility has been operated with one foot of flashboards in place for those three months for most of its operating life. Although documentation was not available, the change apparently stemmed from the results of a post-construction wetlands study, which was required under Article 12 of the exemption (Melissa Grader, USFWS, email, June 6, 2011). The FERC EA at p. 6 had noted long-term, adverse effects on a 9.4-acre marsh due to flashboard

installation. Reducing the impoundment level by two feet during the summer was judged as having unacceptable adverse impacts on wetlands, and a one-foot reduction was accepted; however, neither DOI nor DEP modified the its terms and conditions. My understanding is that the terms and conditions will now be amended, assuming that DEP determines that there is no water quality conflict. Please see Issue 1 on p. 3 of this report for a condition I am recommending in order to assure that Saywatt resolves this noncompliance issue.

LIHI Questionnaire: Water Quality	
B.1	**Is the Facility either:** **a) In Compliance with all conditions issued pursuant to a Clean Water Act Section 401 water quality certification issued for the Facility after December 31, 1986? Or** **b) In Compliance with the quantitative water quality standards established by the state that support designated uses pursuant to the federal Clean Water Act in the Facility area and in the downstream reach?**
	Applicant Response and Explanation: **Yes to (b)** *The Thames River Drainage Basin is comprised of nine regional drainage basins including the French River. The northern half of the Thames basin, where the French resides, is relatively rural, characterized by small towns, farmland and forest. A variety of pressures have caused the disappearance of many working farms and privately-owned forest lands in this area. Most (if not all) of the industrial mills are gone. Water treatment facilities have come on-line during the 1980s. Therefore, water quality has improved significantly for this river since the Project was commissioned.* *When Mechanicsville Hydroelectric first applied for an Exemption, the French River was listed as impaired. Water quality in the French River was severely impaired for several reasons. A main contributor to the impairment was poorly or untreated sewage disposal into the river upstream in Dudley and Webster, Massachusetts. Fish consumption and recreation were not advised. The Project Exemptee was ordered to conduct a dissolved oxygen (DO) study. The study plan for DO monitoring was approved. The results of the study showed that DO readings were not below the State minimums and that the Project did not cause any significant change to DO in the area downstream of the Project. The Project Exemptee was released from having to conduct further testing on January 31, 1991 as evidenced by a copy of the Interior and CT DEP letters inserted below.* *Since upstream industrial sites closed down or were ordered to meet clean water standards and the towns along the river implemented modern sewage treatment facilities, the rivers health has improved dramatically.*
	Related Public Comments: None.
	Reviewer Analysis/Conclusions: The Project does not have a water quality certification. DEP stated in its email of July 18, 2011, "The project continues to comply with CT's water quality standards…" However, both DEP and the USFWS originally raised concerns over the impact on summer water quality that installation of flashboards would cause. While the records available to the reviewer contain no evidence that removal of the full two feet of flashboards is necessary to prevent violations of the dissolved oxygen or

	temperature standards, DEP presumably will consider those parameters when considering whether to modify its exemption terms and conditions. The Facility also has the potential for an undue impact on upstream wetlands and downstream water quality unless a protocol is developed to control dam orifice flows during low flow periods, as, without controls, excessive drawdowns may occur. **This criterion is met if the two recommended conditions for certification are adopted.** **YES to (b) = Go to B.2.**
B.2	**Is the Facility area or the downstream reach currently identified by the state as not meeting water quality standards (including narrative and numeric criteria and designated uses) pursuant to Section 303(d) of the Clean Water Act?**
	Applicant Response and Explanation: **Yes** *Not on the French River but downstream in the Quinebaug River.*
	Related Public Comments: None.
	Reviewer Analysis/Conclusions: While the French River is not listed, Segment CT3700-00_05 of the Quinebaug River (from the French River confluence to 3.3 miles downstream) is listed as impaired for Recreation due to bacteriological contamination. **YES = Go to B.3.**
B.3	**If the answer to question B.2 is yes, has there been a determination that the Facility is not a cause of that violation?**
	Applicant Response and Explanation: **Yes** *A search for the latest State of Connecticut water quality report revealed the 2008 State of Connecticut Integrated Water Quality Report. The document has been established pursuant to the requirements of Sections 305(b) and 303(d) of the Federal Clean Water Act.* *The report can be accessed through the following link found in the footnote at the end of this section* *A search of the report for the term "French River" revealed the following relevant information for the location upstream of the Project and downstream to the confluence of the Quinebaug River:* *State of Connecticut 2008 305(b) Assessment results* *ID 305(b):* *CT3300-00_01* *Name:* *French River* *Location:* *From mouth at the confluence with the Quinebaug River (just due south of West Thompson Flood Control dam), upstream to North Grosvenordale Pond outlet dam, Thompson, CT* *Miles:* *4.61* *Aquatic Life:* *Full* *Recreation:* *Full* *Fish Consumption:* *Full**

	Use Support: FULL=Designated use supported; NOT=Designated use Not Supported, See 303d listing for details. U=Unassessed, data not sufficient for assessment. FULL=Refer to Connecticut Department of Environmental Protection Angler's Guide, or online at www.ct.gov/dep for more information about fish consumption advisories.* *<u>The French River did not show up on the 303(d) list of impaired waters.</u>* *The Town of Thompson's Together coalition, along with the Massachusetts-based French River Connection and other watershed stakeholders, continue action strategy development for water quality and watershed issues along the French River, and across State boundaries. Existing state and federal agency water monitoring data continues to be shared. Connecticut DEP provided some Section 319 NPS funds to the Quinebaug-Shetucket Heritage Corridor Water Subcommittee Coordinator to fund necessary water quality equipment for a citizen monitoring project in Thompson, CT, while the Coordinator also obtained funding support for the Commonwealth of Massachusetts to obtain water quality monitoring equipment for citizen monitoring work in the Dudley, Oxford and Webster, MA communities within the French River watershed. Data collected within Thompson was provided to CT DEP Water Monitoring program for integration in the upcoming Connecticut 2010 Integrated Water Quality Assessment report.*
	Related Public Comments: None.
	Reviewer Analysis/Conclusions: The Project does not contribute to the 303(d) listing of the Quinebaug River, as confirmed by DEP in its July 18, 2011 email. **YES = PASS**

Fish Passage and Protection

Restoration of diadromous fish to the Shetucket River Basin follows *The Plan to Restore Diadromous Fishes to the Shetucket River Watershed* (DEP, Inland Fisheries Division, December 2009). Historically, alewife and blueback herring (collectively, "river herring"), American shad, sea lamprey, American eel, and sea-run trout accessed spawning and nursery habitat in the basin; however, access was eliminated due to the construction of dams in the mid- to late-1800s. Migratory runs upstream as far as at least Cargill Falls (formerly known as Great Falls, or Acquiunk) in Putnam are well documented. DEP Inland Fisheries Division believes that Cargill Falls may have been the upstream limit of shad and river herring runs, but that the Falls, in its natural condition, was unlikely to be an obstruction to salmon, sea lamprey, and eel. Fish moving above Cargill Falls, had free access to the French River, and the conformation of the falls at Mechanicsville is such that it would not have been likely to impede salmon and lamprey movement. American eel continues to be well distributed in the Quinebaug River basin, including the French River basin upstream of the Project dam. Much of the historically available habitat for these fish species continues to exist. Atlantic salmon is not targeted for restoration at this time, although the other species are.

The restoration plan indicates that the lowermost dam on the Quinebaug River, the Tunnel hydroelectric dam, has passage facilities in place, including an eel pass. Shad and river herring

are moved upstream and have access to 7.5 miles of the Quinebaug (from mouth upstream to Aspinook Dam, which is 24 miles downstream of the French River). The plan, which is referred to as a "living document" subject to revision over time, only targets eels for restoration on the Quinebaug River upstream of Cargill Falls, targeting the full length of the river to the Massachusetts border. The French River is not specifically planned for restoration efforts.

Both DEP and the USFWS reserved authority to prescribe fish passage during the exemption proceeding. Recent dialogs between Saywatt and DEP as part of the LIHI review process have resulted in Saywatt voluntarily offering to provide upstream and downstream eel passage. See email from Steve Gephard, DEP Inland Fisheries, July 1, 2011 and the letter from DEP, July 11, 2011, both in the Appendix, regarding enhancements offered by Saywatt. DEP does not plan to do a formal prescription, however. According to Mr. Gephard (email to me of July 18, 2011, not appended), the Tunnel Dam eel pass is very effective, as is one located at the next dam, Aspinook. Rajak is the next dam, and his intent is to request passage in relicensing of that facility; however, sampling has shown that some eels currently pass that dam going upstream. Passage is also expected soon at Cargill Falls. Sampling indicates that eels do make it upriver to Mechanicsville although in reduced numbers. Mr. Gephard has not yet visited the site. Tentatively, passage would have three components: outmigration through an existing sluice; enhanced outmigration by suspending operation and spilling all flows during primary migration periods, specifically dusk to midnight on rainy nights between September 1 and November 15; and upstream passage via an eel pass. Making agency-approved passage enhancements a requirement of the LIHI certification will assure appropriate protection of this resource.

LIHI Questionnaire: Fish Passage and Protection	
C.1	**Is the Facility in Compliance with *Mandatory Fish Passage Prescriptions* for upstream and downstream passage of anadromous and catadromous fish issued by Resource Agencies after December 31, 1986?**
	Applicant Response and Explanation: **Yes** *Section 18 of the Act provides the Secretary of Interior the authority to prescribe fishways.[1] Although fish passage facilities were not recommended by the CT Department of Environmental Protection (DEP) or Interior at the time the Project was given the order granting exemption from licensing, the Commission included articles which reserve Interior's prescription authority. The FERC recognized that future fish passage needs and management objectives cannot always be predicted at the time of granting the exemption from licensing. Therefore, the order granting exemption from licensing issued for this Project were conditioned to reserve the DEP and Interior's authority to prescribe fishways.* *<u>Future Fish Passage</u>: Interior and DEP have stipulated conditions that would require the Exemptee to provide future fish passage facilities at the Project when requested by these agencies. There are no migratory or anadromous fish presently using the French River.*

[1] Section 18 of the Federal Power Act provides: "The Commission shall require construction, maintenance, and operation by a licensee at its own expense ... such fishways as may be prescribed by the Secretary of Commerce or the Secretary of Interior as appropriate."

	Restoration of anadromous fish in this river system by Interior and the DEP, however, could be expanded in the future to include the Project area. Adherence to the condition stipulated by the agencies would provide for construction of fish passage facilities at the Project, thereby ensuring that the Project structures and operation do not adversely impact anadromous fish resources. *The French River is a tributary of the Quinebaug River, which joins with the Shetucket to from the Thames River Basin (TRB). The FWS and the DEP indicate that inadequate fish passage facilities preclude restoration of anadromous fishes, including the alewife, and American shad in the French River at the current time. These species were historically common in the Thames River and lower parts of the Quinebaug. They may also have occurred in the upper Quinebaug and French although there is controversy over anadromous fish passage above the naturally occurring Cargill Falls, located downstream of the Project on the Quinebaug in Putnam, CT.* *Several federal and state resource agencies, principally the FWS and the DEP, are currently restoring anadromous fish to the TRB. The potential for restoration of anadromous fish in the TRB has recently improved due to improvements in water quality. The restoration effort includes, in part, the addition of fish passage facilities on the lower Thames River. The installation of fish passage facilities in the TRB is being coordinated on a river-wide basis, with efforts to date primarily centered on the Thames River in the location of Norwich, CT where the greatest need exists.* *Current efforts to restore anadromous fish to the TRB are focused many miles downstream on the Thames River. FWS and the DEP have stated that they have no fishery management plans that would require fish passage in the Project vicinity in the near future. They have stated that it could be 25 years before fish passage would become an issue in the Project area.*
	Related Public Comments: None.
	Reviewer Analysis/Conclusions: Although American eel is present at the Facility, no prescription exists or is planned. **N/A = Go to C.2.**
C.2	**Are there historic records of anadromous and/or catadromous fish movement through the Facility area, but anadromous and/or catadromous fish do not presently move through the Facility area (*e.g.*, because passage is blocked at a downstream dam or the fish run is extinct)?**
	Applicant Response and Explanation: **Applicant bypass since C.1 answered in the affirmative.**
	Related Public Comments: None.
	Reviewer Analysis/Conclusions: As discussed above, Atlantic salmon and sea lamprey are believed to have been present until blocked by construction of downstream dams in the 1800s, but no written record is known. American eels were present historically and persist. While I am answering NO since there is an absence of a record of anadromous fish accessing the site, DEP is of the opinion that salmon and lamprey could move upstream to the site. My opinion is that the Facility would meet the C.2.a and C.2.b tests, if applicable,

	as N/A = Go to C.3. The Facility is many dams removed from the ocean. It did not contribute to the elimination of salmon and lamprey runs in the Shetucket and Quinebaug rivers, and no resource agency has Recommended fish passage based on a triggering event or date. **No = Go to C.3.**
C.3	**If, since December 31, 1986:** **a) Resource Agencies have had the opportunity to issue, and considered issuing, a Mandatory Fish Passage Prescription for upstream and/or downstream passage of anadromous or catadromous fish (including delayed installation as described in C2a above), and** **b) The Resource Agencies declined to issue a Mandatory Fish Passage Prescription,** **c) Was a reason for the Resource Agencies' declining to issue a Mandatory Fish Passage Prescription one of the following: (1) the technological infeasibility of passage, (2) the absence of habitat upstream of the Facility due at least in part to inundation by the Facility impoundment, or (3) the anadromous or catadromous fish are no longer present in the Facility area and/or downstream reach due in whole or part to the presence of the Facility?**
	Applicant Response and Explanation: **Applicant bypass since C.1 answered in the affirmative.**
	Related Public Comments: None.
	Reviewer Analysis/Conclusions: The agencies have had an opportunity to prescribe fish passage as a reserved right under the exemption terms and conditions. Based on the record, they have not considered a formal prescription. **N/A = Go to C.4.**
C.4	**If C3 was not applicable:** **a) are upstream and downstream fish passage survival rates for anadromous and catadromous fish at the dam each documented at greater than 95% over 80% of the run using a generally accepted monitoring methodology? OR** **b) If the Facility is unable to meet the fish passage standards in 4a, has the applicant demonstrated, and obtained a letter from the US Fish and Wildlife Service or National Marine Fisheries Service confirming that demonstration, that the upstream and downstream fish passage measures (if any) at the Facility are appropriately protective of the fishery resource?**
	Applicant Response and Explanation: **Applicant bypass since C.1 answered in the affirmative.**
	Related Public Comments: None.
	Reviewer Analysis/Conclusions: Saywatt has not attempted to demonstrate effective eel passage as no measures are currently in place. Saywatt has agreed, however, to provide upstream and downstream passage through a combination of structural modifications (e.g., outmigration through an existing sluice and upstream passage via an eel pass) and suspension of operation and full spillage from dusk to midnight on rainy nights between September 1 and November 15. Formalizing this offer through a LIHI certification condition will provide appropriate protection for eels.

	YES to (b) = Go to C.5.
C.5	**Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and/or downstream passage of *Riverine* fish?**
	Applicant Response and Explanation: **Yes**
	Related Public Comments: None.
	Reviewer Analysis/Conclusions: There are no prescriptions for riverine fish. **N/A = Go to C.6.**
C.6	**Is the Facility in Compliance with Resource Agency Recommendations for Riverine, anadromous and catadromous fish entrainment protection, such as tailrace barriers?**
	Applicant Response and Explanation: **Yes**
	Related Public Comments: None.
	Reviewer Analysis/Conclusions: There are no Recommendations. **N/A = PASS**

Watershed Protection

The Facility dam creates an impoundment about 3/4 mile in length with a surface area of about 48 acres. No protected buffer zones have been created along the riverine impoundment through a settlement agreement or the federal exemption.

LIHI Questionnaire: Watershed Protection	
D.1	**Is there a buffer zone dedicated for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low-impact recreation) extending 200 feet from the high water mark in an average water year around 50 - 100% of the impoundment, and for all of the undeveloped shoreline?**
	Applicant Response and Explanation: **No**
	Related Public Comments: None.
	Reviewer Analysis/Conclusions: Such buffer zones are more typically associated with hydroelectric reservoirs rather than small riverine impoundments. There are no buffer zones at this project. **NO = Go to D.2.**
D.2	**Has the facility owner/operator established an approved watershed enhancement fund that: 1) could achieve within the project's watershed the ecological and recreational equivalent of land protection in D.1.,and 2) has the agreement of appropriate stakeholders and state and federal resource agencies?**
	Applicant Response and Explanation: **No**
	Related Public Comments: None.
	Reviewer Analysis/Conclusions: There is no watershed enhancement fund. The facility does not qualify for an extension of the LIHI certification term by three years. **NO = Go to D.3.**
D.3	**Has the facility owner/operator established through a settlement agreement with appropriate stakeholders and that has state and federal resource agencies agreement**

	an appropriate shoreland buffer or equivalent watershed land protection plan for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low impact recreation).
	Applicant Response and Explanation: **No**
	Related Public Comments: None.
	Reviewer Analysis/Conclusions: There is no settlement agreement. **NO = Go to D.4.**
D.4	**Is the facility in compliance with both state and federal resource agencies recommendations in a license approved shoreland management plan regarding protection, mitigation or enhancement of shorelands surrounding the project?**
	Applicant Response and Explanation: **Yes** *The original order granting exemption from licensing required a wetland study to assure that the watershed surrounding the Project would be protected. The Exemptee submitted a wetlands monitoring plan, which was approved by the FERC on September 28, 1992 as evidenced by the letter below.* *The results of the wetlands study showed no adverse effects resulting from the Project's operations. The Exemptee was released from further studies.* *The Town of Thompson's Together coalition, along with the Massachusetts-based French River Connection and other watershed stakeholders, continue action strategy development for watershed issues along the French River. A Connecticut DEP Section 319 grant agreement with USDA-NRCS was executed to design and develop community support and participation in a riparian buffer project on a highly visible municipal parcel along the French River, with the project completed in 2008. Trained town volunteers initiated riparian plantings in 2008. In 2009 NRCS successfully completed the French River Riparian Buffer Demonstration Project in Riverside Park along the French River. Final planting design led to town installation of a rain garden collecting runoff from a small park gazebo, 1000 feet of riparian area plantings of native perennials, shrubs and trees, interpretive signage and recreational amenities including pet waste collecting stations, picnic benches and a river fishing access site. Trained town volunteers and town maintenance staff continued raising funds to extend riparian plantings twice in 2009 and to extend the adjacent park walking trail to connect to the towns nearby Community Center. The town is considering additional stream corridor enhancement proposals identified in the final report's streamside assessment report.*
	Related Public Comments: None.
	Reviewer Analysis/Conclusions: There are neither recommendations nor a shoreline management plan related to the exemptee's activities. **N/A = PASS**

Threatened and Endangered Species Protection

The 1988 FERC EA (p. 2) indicates that there were no federally listed species present at that time. Connecticut does not list any state endangered or threatened fish species for Windham County. The record does not indicate the presence of listed species, and DEP's letter of July 11, 2011 (see Appendix) states, "The continued operation of the hydroelectric project will have no adverse affect on any Federal or State Listed species."

LIHI Questionnaire: Threatened and Endangered Species Protection	
E.1	**Are threatened or endangered species listed under state or federal Endangered Species Acts present in the Facility area and/or downstream reach?**
	Applicant Response and Explanation: **No** *There are no threatened or endangered fish species listed under state or federal Endangered Species Acts present in the facility area and/or the downstream reach. (A website link to a list of threatened and endangered species for Windham County, CT can be found in the footnote at the end of this Appendix).*[1] *During the Exemption process, it was determined that no further consultation with FWS under Section 7 of the Endangered Species Act is required. The FERC also concluded that continued Project operation is not likely to affect adversely any federally listed or proposed threatened and endangered species.* [1]*The Connecticut Department of Environmental Protection maintains a list of threatened and endangered species on its website http://www.ct.gov/dep/lib/dep/endangered_species/species_listings/windhamctyspecies.pdf. The following fish species are listed as special concern but not threatened or endangered.* *Scientific Name — Common Name — Protection Status* *Enneacanthus obesus — Banded sunfish — Special Concern* *Notropis bifrenatus — Bridle shiner — Special Concern*
	Related Public Comments: None.
	Reviewer Analysis/Conclusions: There is no record of state or federally listed T&E species at the Project presently. **NO = Go to F.**

Cultural Resource Protection

At the request of DOI, the exemption incorporated a special article, Article 13, to require the implementation of measures for cultural resources protection during initial construction activities. Textile mill ruins and the dam and powerhouse are considered cultural resources (FERC EA).

LIHI Questionnaire: Cultural Resource Protection	
F.1	**If FERC-regulated, is the Facility in Compliance with all requirements regarding Cultural Resource protection, mitigation or enhancement included in the FERC license or exemption?**
	Applicant Response and Explanation: **Yes** *The facility in compliance with all requirements regarding cultural resource protection, mitigation or enhancement included in its FERC license* [technically, it is an exemption]. *In view of the results of discovery efforts and the SHPO's determination, the FERC found that the Project would have no effect on any structure, site, building, district, or object listed in or eligible for listing in the National Register.* *The State Historic Preservation Officer (SHPO) recommended that the then applicant survey this area sufficiently to determine whether there would be any historic remains. Based on the SHPO's recommendation, a survey was conducted for the then applicant in the areas that would be affected by the proposed site. Besides the dam and powerhouse, which have been reconditioned in accordance with the National Park Service's "Standards for Rehabilitation," no archaeological materials were found other than the ruined remains of a nineteenth century textile mill, which was destroyed by fire during a flood in 1955. The Project has avoided and has no impact on said remains.* *The current owner is collecting pictures of the historic Project from before the flood through the rehabilitation period in the 1980s up until the present. These pictures will be assembled into a photo montage, a copy of which will be donated to the local library and historical society.* *Below is a copy of the letter from the FERC indicating that the SHPO and the FERC determined that the proposed Project would have no effect upon any structure or site of historic, architectural, or archaeological significance as defined by the National Historic Preservation Act of 1966.*
	Related Public Comments: None.
	Reviewer Analysis/Conclusions: No conflicts were identified in the record. **YES = PASS**

Recreation

According to DOI's terms letter filed with FERC on September 11, 1988, the National Park Service determined that there were no "significant or outstanding opportunities for the development of public outdoor recreational facilities within the project boundaries." The FERC EA indicated that the only developed facility was a rest area on the southeast side of the impoundment. DOI requested a special article on public access, but it was not included; however, the terms letters of both the USFWS and DEP require public access. DEP's letter specifically refers to fishing and canoe portage.

DEP's letter of July 11, 2011 indicates that there is a picnic area, boat launch, and parking area. I expect that these facilities may be in the area of the rest area mentioned in the FERC EA.

LIHI Questionnaire: Recreation	
G.1	**If FERC-regulated, is the Facility in Compliance with the recreational access, accommodation (including recreational flow releases) and facilities conditions in its FERC license or exemption?**
	Applicant Response and Explanation: **Yes**
	Related Public Comments: None.
	Reviewer Analysis/Conclusions: The only exemption requirement is to provide public access. DEP's recent letter suggests that a boat launch and picnic area are now also provided, although I do not believe that these facilities were required under the exemption. **YES = Go to G.3.**
G.3	**Does the Facility allow access to the reservoir and downstream reaches without fees or charges?**
	Applicant Response and Explanation: **Yes** *The Project is in compliance with the terms for recreational access in its FERC order granting exemption from licensing. The Project does allow access to the surrounding pond and downstream reaches without fees or charges.* *In the order granting exemption from licensing back in 1988, the conclusion was that due to poor water quality, there were limited on-water recreational activities such as fishing or boating. However, the water quality of the French River has improved dramatically over the years since the application. According to the latest Connecticut water quality report, the French River is no longer considered impaired and recreational use is no longer limited.* *<u>Terrestrial Access</u>: The Providence and Worcester Railroad (P&WRR) and a causeway running across the US Army Corps West Thompson flood control dam create uncontrollable boundaries, which prohibits easy access to the Project area. Terrestrial access to the Project area is controlled via a locked railroad crossing gate maintained by the P&WRR. Beyond the gate, the 800 feet long driveway, effectively screen out all but the most curious. There are local fishermen and their families, who enjoy access to the Project area and river. Visitors brave enough to traverse the barriers are welcome to visit the Project area. A public access area is provided upstream of the railroad bridge as shown in the photos below.* *<u>Aquatic Access</u>: The P&WRR bisects the pond upstream of the Project dam, creating a boundary, which prohibits aquatic access to the Project area. Boaters are prevented from approaching the spillway and intake by the West Thompson road causeway and the P&WRR bridge. The clearance between the causeway and bridge girders and the water surface prevent passage of canoes, kayaks and rowboats into the ponds upstream of the Project spillway.*

	However, public access is available on the southeast side of the Project impoundment, just upstream from the railroad bridge. It provides boaters access to the water via a boat ramp and fishermen along with sightseers have ample parking spaces and picnic tables to enjoy the beauty of the surrounding wetlands. And for those brave enough to cross the railroad tracks or traverse the US Army Corps' land, dirt roads do provide access to the dam and powerhouse located several hundred feet in the wooded area. Once they arrive on the Project site, they will be treated to a dam that has an 8 foot wide concrete bridge connecting the Project side of the French River to the USACE side. This is a favorite spot for local fishermen. The current Exemptee advises caution to those willing to traverse the railroad tracks or perch themselves on the dam but does not charge access fees or restrict access to the site. The dirt roads, riverside trails and dam bridge provide access to those wishing to portage a canoe or kayak downstream of the Project site. *The Town of Thompson received a Connecticut Department of Environmental Protection Recreational Trail Grant award for Phase 1 of the Air Line Trail Improvement Plan covering a 2.3 mile section of the state rail-trail project in northeastern CT. Improved trail conditions will lead to increased public access to, and managed uses of resources along the trail, including the previously underappreciated French River.*
	Related Public Comments: None.
	Reviewer Analysis/Conclusions: Access is provided without charge. **YES = PASS**

Facilities Recommended for Removal

The record does not indicate an interest on the part of resource agencies in removing the dam.

LIHI Questionnaire: Facilities Recommended for Removal	
H.1	**Is there a Resource Agency Recommendation for removal of the dam associated with the Facility?**
	Applicant Response and Explanation: **No** *There is no resource agency recommendation for removal of the dam associated with the Project.*
	Related Public Comments: None.
	Reviewer Analysis/Conclusions: No. **NO = PASS**

APPENDIX

Contents

From: Golembiewski, Brian [mailto:Brian.Golembiewski@ct.gov]
Sent: Monday, July 18, 2011 10:32 AM
To: 'Jeffrey Cueto'
Subject: RE: LIHI Certification For the Mechanicsville Hydroelectric Project, FERC Project No. 9611-001
Importance: Low

You are correct. I forgot that we only submitted "Terms and Conditions". So # 2 should be revised to read "…The project continues to comply with CT's water quality standards and the Terms and Conditions of its FERC Exemption.

From: Jeffrey Cueto [mailto:ompompanoo@aol.com]
Sent: Monday, July 18, 2011 10:27 AM
To: Golembiewski, Brian
Cc: Thomas, Eric; Gephard, Steve; Murphy, Brian; melissa_grader@fws.gov; indigoharbor@yahoo.com; Hannon, Robert
Subject: RE: LIHI Certification For the Mechanicsville Hydroelectric Project, FERC Project No. 9611-001

Thanks for your response, Brian. In #2, you refer to a valid water quality certification. Since it was granted a FERC exemption and not a license, CT did not apply Section 401. So there isn't any certification as I understand it, unless one was issued for a different federal action, like Section 404.
Jeff

From: Golembiewski, Brian [mailto:Brian.Golembiewski@ct.gov]
Sent: Monday, July 18, 2011 10:18 AM
To: 'ompompanoo@aol.com'
Cc: Thomas, Eric; Gephard, Steve; Murphy, Brian; 'melissa_grader@fws.gov'; 'indigoharbor@yahoo.com'; Hannon, Robert
Subject: RE: LIHI Certification For the Mechanicsville Hydroelectric Project, FERC Project No. 9611-001
Importance: Low

Mr. Cueto,

Please see attached responses to the questions posed in your 7/12/11 email:

1. Since the project is operated in a run-of-river mode, it would not contribute to the biological contamination in the French River.
2. The project continues to comply with CT's water quality standards and has a valid 401 Water Quality Certificate.
3. The 401 Water Quality Certificate does not specify the height of the flashboards, just that "…the exemptee shall remove the flashboards during July, August and September of each year…". The FERC Exemption details 2' flashboards, so the project appears to be in compliance. Based on recent emails regarding the project, maintaining a 1' height flashboard during the summer may be preferable for wildlife, wetlands and recreation. The Department will coordinate

with USFWS regarding modifying the Terms and Conditions of the FERC Exemption.

4. The applicant has voluntarily committed to provide/enhance safe upstream and downstream eel passage at the project site. This would not be considered a formal fish passage prescription that would need to be submitted to FERC.

If you have any further questions, please let me know.

Sincerely,

Brian Golembiewski, EA3
CT DEEP
860.424.3867

****

From: Golembiewski, Brian [mailto:Brian.Golembiewski@ct.gov]
Sent: Tuesday, July 12, 2011 3:55 PM
To: 'Jeffrey Cueto'; 'Melissa_Grader@fws.gov'; 'Rolland Zeleny'
Cc: Murphy, Brian; Thomas, Eric; 'Ronald Kreisman'; Hannon, Robert; Gephard, Steve
Subject: RE: LIHI Certification For the Mechanicsville Hydroelectric Project, FERC Project No. 9611-001
Importance: Low

Jeff,

Based on the information provided by Melissa and Mr. Zeleny, it appears that leaving a 1' height flashboard during the summer is preferable for wildlife, wetlands and recreation. I will need to coordinate in-house and get back to you ASAP.

Brian

From: Jeffrey Cueto [mailto:ompompanoo@aol.com]
Sent: Tuesday, July 12, 2011 3:36 PM
To: Melissa_Grader@fws.gov; 'Rolland Zeleny'; Golembiewski, Brian
Cc: Murphy, Brian; Thomas, Eric; 'Ronald Kreisman'; Hannon, Robert; Gephard, Steve
Subject: RE: LIHI Certification For the Mechanicsville Hydroelectric Project, FERC Project No. 9611-001

Melissa – Thanks for the supplemental information. It seems like the T&Cs should be amended if CT is in agreement. Otherwise, the exemptee is out of compliance with the exemption (and has been for 25 years m/l).

Rolland – Your email of 6/6 stated that the past practice has been to remove two feet of boards. Thanks for correcting this.

Brian G. – I guess it's up to your agency to determine whether retention of the one foot of boards during the summer is compliant with Water Quality Standards. If it is, it appears that amendment of the state T&Cs is in order, assuming that has not previously been done.

From: Melissa_Grader@fws.gov [mailto:Melissa_Grader@fws.gov]
Sent: Tuesday, July 12, 2011 2:12 PM
To: Rolland Zeleny
Cc: Golembiewski, Brian; Murphy, Brian; Thomas, Eric; Ronald Kreisman; Jeffrey Cueto; Hannon, Robert; Gephard, Steve
Subject: Re: LIHI Certification For the Mechanicsville Hydroelectric Project, FERC Project No. 9611-001

I have the wetlands report (also available via FERC Online in microfiche). According to the report, installing 2' boards decreased some wetlands (by app. 2%)and increased others (by app. 10%), for a net increase in wetlands at the project. When the boards were removed seasonally, some negative impacts to wetlands were noted (exposing fish nests and amphibian egg sacs), which is why SHA recommended (and FWS concurred) that 1' boards should be left on during the summer. I cannot tell from our files what DEP's position on that proposed flashboard protocol was. I also cannot tell if they submitted amended T&Cs to codify the new FB management, but I know FWS did not. If DEP supports the 1' summer, 2' at all other times protocol, then both DEP and FWS could submit modified T&Cs with FERC to make it "official". If DEP does not agree, then the original T&Cs would remain and we'd need to think of other ways to provide upstream eel passage....

Melissa
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Melissa Grader
Fish and Wildlife Biologist
US FWS/New England Field Office
c/o CT River Coordinator's Office
103 East Plumtree Road
Sunderland, MA 01375
413-548-8002, x124
413-548-9622 (FAX)
melissa_grader@fws.gov
www.fws.gov/newengland
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Rolland Zeleny <indigoharbor@yahoo.com>

Rolland Zeleny
<indigoharbor@yahoo.com>

07/12/2011
12:07 PM

To Jeffrey Cueto <ompompanoo@aol.com>, Melissa_Grader@fws.gov

cc "Golembiewski, Brian" <Brian.Golembiewski@ct.gov>, "Murphy, Brian" <Brian.Murphy@ct.gov>, "Thomas, Eric" <Eric.Thomas@ct.gov>, Ronald Kreisman <kreisman@gwi.net>, "Hannon, Robert" <Robert.Hannon@ct.gov>, "Gephard, Steve" <Steve.Gephard@ct.gov>

SubjectRe: LIHI Certification For the Mechanicsville Hydroelectric Project, FERC Project No. 9611-001

Hi All,

I acquired this project last June 1st. The former owner told me that he removed 1' of flashboards during the summer months July 1st - October 1st for the last 25 or so years. That is what I said in the application. Upon further review of the initial FERC license, it stated to remove 2'.

Last summer, when I removed 2' the pond turned mostly to mud. The recreation area became unusable. Locals complained about the lack of recreation and the smell. Some backyards turned muddy.

I believe after the wetlands study was completed, it was concluded that the removal of 1' was optimal.

Steve Gephard mentioned that he would like to install eel passage on the dam, which included a 4" diameter tube installed into a flash board. If the flash boards are removed completely it would make this very difficult.

I'll do what you all think is appropriate for fish and recreation. My opinion having witnessed the condition of the pond without flashboards is that we leave one foot for recreation and the eel passage issue.

Rolland

From: Jeffrey Cueto <ompompanoo@aol.com>
To: Melissa_Grader@fws.gov
Cc: "Golembiewski, Brian" <Brian.Golembiewski@ct.gov>; "Murphy, Brian"

<Brian.Murphy@ct.gov>; "Thomas, Eric" <Eric.Thomas@ct.gov>; indigoharbor@yahoo.com; Ronald Kreisman <kreisman@gwi.net>; "Hannon, Robert" <Robert.Hannon@ct.gov>; "Gephard, Steve" <Steve.Gephard@ct.gov>
Sent: Tue, July 12, 2011 11:36:14 AM
Subject: RE: LIHI Certification For the Mechanicsville Hydroelectric Project, FERC Project No. 9611-001

Hi, Melissa. My understanding from the owner is that the practice is to remove the two feet of boards during the summer for water quality protection in the impoundment and downstream per the exemption terms and conditions set by the State. The original exemptee apparently did a post-exemption water quality study. I didn't get a copy of the results, but assume that the study did not result in the State changing the flashboard removal requirement. So I wasn't going to pursue this any further, with the understanding that the owner is complying with the original removal requirement. Unless there is a wetland conflict now with removal of the full two feet of boards, instead of just one foot, during the summer, then I think all the bases are covered. I'd expect anyways that the boards need removal from time to time for maintenance or are lost during high flows or ice impacts. Sound okay?

Cheers,

Jeff

From: Melissa_Grader@fws.gov [mailto:Melissa_Grader@fws.gov]
Sent: Tuesday, July 12, 2011 10:19 AM
To: Jeffrey Cueto
Cc: 'Golembiewski, Brian'; 'Murphy, Brian'; 'Thomas, Eric'; indigoharbor@yahoo.com; Ronald Kreisman; 'Hannon, Robert'; 'Gephard, Steve'
Subject: RE: LIHI Certification For the Mechanicsville Hydroelectric Project, FERC Project No. 9611-001

Hi Jeff,

I'm still a little confused about the flashboards. From the documents in our files, it looks like originally SHA wanted to install 2' of boards on the dam - we said they needed to do a wetlands study to determine what impact the higher pond level had on wetlands. Based on the results of that study, the FWS agreed that 2' of boards from Nov. 1 through June 30 were acceptable, and 1' of boards in summer (July 1 through October 31) were OK. Our 2/11/92 letter transmitting our comments on the wetlands and DO study are not on FERC Online for some reason, and I don't see DEP comments in there either, so don't know what they agreed to. SHA submitted a final wetlands report but that is on microfiche. FWS did not amend our T&Cs to formally codify this new flashboard protocol, and I do not know if SHA ever actually implemented it (or instead, still removes 2' of boards in summer).

Melissa
~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Melissa Grader
Fish and Wildlife Biologist
US FWS/New England Field Office
c/o CT River Coordinator's Office
103 East Plumtree Road
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413-548-8002, x124
413-548-9622 (FAX)
melissa_grader@fws.gov
www.fws.gov/newengland
~~~~~~~~~~~~~~~~~~~~~~~~~~~~

"Jeffrey Cueto" <ompompanoo@aol.com>

To
"'Golembiewski, Brian'" <Brian.Golembiewski@ct.gov>
cc
"'Thomas, Eric'" <Eric.Thomas@ct.gov>, "'Gephard, Steve'" <Steve.Gephard@ct.gov>, "'Murphy, Brian'" <Brian.Murphy@ct.gov>, <melissa_grader@fws.gov>, <indigoharbor@yahoo.com>, "'Hannon, Robert'" <Robert.Hannon@ct.gov>, "Ronald Kreisman" <kreisman@gwi.net>
Subject
RE: LIHI Certification For the Mechanicsville Hydroelectric Project, FERC Project No. 9611-001

Thanks for your response, Brian. If you could clarify a few items, I'd appreciate it.

The message I sent Eric Thomas on May 27 and Brian Murphy on June 6 included a few questions that were not specifically answered. I'll quote from the emails and comment in caps:

1) "However, I do note that the this segment of the French River has been proposed for 303(d) listing (recreation impairment) per the draft April 2011 integrated water quality report based on bacteriological problems. The segment of the Quinebaug River

below the French River has also been biologically assessed and impairment of habitat for aquatic life is proposed although the cause and source are indicated as unknown. That segment is also listed for non-support of recreation due to bacteriological contamination. **In your opinion, is it reasonable to conclude that the project does not contribute to the impairments?"** YOUR LETTER STATES THAT THE FACILITY IS UNLIKELY TO CONTRIBUTE TO USE IMPAIRMENTS. I'LL INTERPRET THIS TO MEAN IT DOES NOT CONTRIBUTE TO THE BIOLOGICAL CONTAMINATION, ALTHOUGH THAT LISTING IS NOT SPECIFICALLY MENTIONED IN YOUR LETTER.

2) "In your opinion, does the project comply with water quality standards?" NO RESPONSE RECEIVED.

3) "While the exemption requires that the exemptee remove the flashboards during the summer and the project uses 2.0 feet of boards, only "1 foot" of boards are removed according to Appendix A of the LIHI application (p. 16). **Is that in compliance with your agency's terms and conditions?**" YOUR LETTER SAYS ONE FOOT IS IN COMPLIANCE. FOR YOUR INFORMATION, MR. ZELENY SENT ME AN EMAIL ON JUNE 6 CORRECTING HIS APPLICATION BY STATING THAT TWO FEET OF BOARDS ARE REMOVED.

4) "Although the FERC exemption reserves authority to the FWS and DEP to prescribe fish passage, my understanding is that no such action has been taken as of yet. Further Saywatt's application says that FWS and DEP "stated that they have no fishery management plans that would require fish passage in the Project vicinity in the near future [and] it could be 25 years before fish passage would become an issue in the Project area." I just wanted to confirm that with you." YOUR LETTER CONFIRMS THAT THERE IS NO PRESENT INTEREST IN ANADROMOUS FISH PASSAGE BUT THAT CONNECTICUT IS ASKING THE APPLICANT TO PROVIDE EEL PASSAGE AS A CURRENT NEED. DOES THIS MEAN THAT CONNECTICUT WILL BE DOING A FISH PASSAGE PRESCRIPTION? WHAT IS THE TIMETABLE FOR PROVISION OF PASSAGE?

Thanks again for your cooperation. I am trying to get this application before the LIHI Board meeting on July 28. If I could get a quick response from you, I'd appreciate it.

Jeff

From: Golembiewski, Brian [mailto:Brian.Golembiewski@ct.gov]
Sent: Monday, July 11, 2011 4:21 PM
To: 'ompompanoo@aol.com'

Cc: Thomas, Eric; Gephard, Steve; Murphy, Brian; 'melissa_grader@fws.gov'; 'indigoharbor@yahoo.com'; Hannon, Robert
Subject: LIHI Certification For the Mechanicsville Hydroelectric Project, FERC Project No. 9611-001
Importance: Low

Mr. Cueto,

Please see attached letter of support for the LIHI certification for the Mechanicsville Hydroelectric Project.

If you have any further questions, please let me know.

Sincerely,

Brian Golembiewski, EA3
CT DEEP
860.424.3867

****

LETTER FROM DEP SUPPORTING LIHI APPLICATION

July ll, 2011

Jeff Cueto
Low Impact Hydropower Institute
34 Providence Street
Portland, Maine 04103

RE: Application For Low Impact Hydropower Certification
Mechanicsville Hydroelectric Project, FERC Project No. 9611-001

Dear Mr. Cueto:
Thank you for the opportunity to comment on the above referenced application for Low Impact Hydropower Certification. The appropriate programs within the Department have reviewed the application materials located on your website and other related natural resource information. Based on this review, the Department finds that the application demonstrates consistency with the eight certification criteria:

1. River Flows - The hydroelectric development is always operated in a run-of-river mode, provides the minimum prescribed flow of 22 cfs through the dam and generates with the minimum start-up flow rate of 86 CFS, all in compliance with DEP's Recommendations for Terms and Conditions and FERC's Exemption. The applicant has also agreed to suppress leakage around the low level outlets (at least 3 or 4) to divert flow to the spillway where it can be more easily quantified and monitored;

2. Water Quality - The project is unlikely to contribute to the impairment of designated use(s) in the lower French River and receiving segment of the Quinebaug River. The flashboards at the project dam are lowered by 1 foot on or before July 1st and are replaced after October 1st to improve dissolved oxygen and lower temperatures in the impoundment and French River, all in compliance with DEP's Recommendations for Terms and Conditions and FERC's Exemption;

3. Fish Passage and Protection - The Department nor the US Fish and Wildlife Service have plans for anadromous fish restoration in the French River at this time. So, fish passage requirements are recommended solely for American eel. The applicant states that eels currently occur both upstream and downstream of the project dam, but will enhance eel passage as recommended by the Department. The applicant will install an eel pass for upstream passage and cease generation on rainy nights between September 1 to November 15 to aid downstream eel passage;

4. Watershed Protection - The operation of the hydroelectric project has had no adverse affects on the watershed of the French and Quinebaug Rivers. In accordance with the FERC Exemption, the applicant performed studies that demonstrated the healthy condition of the riparian wetlands along project impoundment;

5. Threatened and Endangered Species Protection - The continued operation of the hydroelectric project will have no adverse affect on any Federal or State Listed species;

6. Cultural Resource Protection - SHPO initially determined that the hydroelectric project would have no effect on historical/cultural resources, provided the ruined remains of a nineteenth century textile mill, which was destroyed by fire during a flood in 1955, were not disturbed. The Project operation has avoided this area and will continue to do so;

7. Recreation - Public access to the site is limited by the active Providence & Worcester Railroad right-of-way. However, public access is available on the southeast side of the Project impoundment, just upstream from the railroad bridge, via a boat ramp, picnic area and parking lot off of CT Route 12, in compliance with DEP's Recommendations for Terms and Conditions and FERC's Exemption; and

8. Facilities Recommended for Removal - There are no Federal or State resource agency recommendations for removal of the dam associated with the Project.

Consequently, the Department supports the Mechanicsville Hydroelectric Project application for Low Impact Hydropower Certification.

If I can be of further assistance, please let me know.

/s/ Brian GoIembiewski
Environmental Analyst 3

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From: Rolland Zeleny [mailto:indigoharbor@yahoo.com]
Sent: Friday, July 01, 2011 5:42 PM
To: Jeffrey Cueto
Subject: Fw: Mechanicsville LIHI Application- APPROVAL

Jeff,

Here is the email from Steve of the CT DEP Fisheries Division.

He was incorrect about his automation comments below. Mechanicsville is fully automated with one exception, which is start up, which is done with an operator. This should only have a positive impact if anything.

Rolland

----- Forwarded Message ----
From: "Gephard, Steve" <Steve.Gephard@ct.gov>
To: Rolland Zeleny <indigoharbor@yahoo.com>; "Golembiewski, Brian" <Brian.Golembiewski@ct.gov>
Cc: "Murphy, Brian" <Brian.Murphy@ct.gov>; "Wildman, Timothy" <Timothy.Wildman@ct.gov>
Sent: Fri, July 1, 2011 9:31:20 AM
Subject: RE: Mechanicsville LIHI Application- APPROVAL

Rolland and Brian,
With this last email, I feel that I know understand enough of this project and Rolland has committed to significant improvements that would allow our Division to endorse this certification. It sounds like the plant is not automated. An operator needs to come in and turn the on and off the turbine to adjust to changing flow conditions. That can lead to lag times. We also need to think about how to estimate the leakage from that fourth gate if we keep it unsealed. I trust we can resolve this issues. The email below will become the basis of our endorsement:

1. maintenance of the minimum flow regime
2. suppression of leakage around low level outlets (at least 3 or 4) to divert flow to the spillway where it can be more easily quantified and monitored.
3. provision of an eel pass (upstream passage) based upon recommendations of a summer field visit
4. provision of downstream eel passage via selected seasonal shutdowns per email below and possibly use of a low level outlet, depending upon results of a summer field visit.

Brian- based upon this, can you provide Rolland with what he needs?

Steve

From: Rolland Zeleny [mailto:indigoharbor@yahoo.com]
Sent: Thursday, June 30, 2011 1:53 PM
To: Gephard, Steve; Golembiewski, Brian

Cc: Murphy, Brian
Subject: Re: Mechanicsville LIHI Application

Steve,

Please see my responce in CAPS below.

From: "Gephard, Steve" <Steve.Gephard@ct.gov>
To: Rolland Zeleny <indigoharbor@yahoo.com>; "Golembiewski, Brian" <Brian.Golembiewski@ct.gov>
Cc: "Murphy, Brian" <Brian.Murphy@ct.gov>
Sent: Wed, June 29, 2011 10:02:47 PM
Subject: RE: Mechanicsville LIHI Application

Rolland,
I am generally comfortable with your proposal but some uncertainty exists.

1. Your emails about flow is confusing. I'M SORRY FOR ANY CONFUSION. IT IS A CONFUSING TOPIC. First, you say that you have a 22 cfs minimum flow that was based upon DEP (Brian Murphy) and USFWS recommendation. To me, that says that when you are not generating, you are releasing 22 cfs downstream (or inflow). WHEN WE ARE NOT GENERATING, WE RELEASE UP TO 86 CFS (OR INFLOW)

But then in a subsequent email, you say "...FOR FLOWS UNDER 86 CFS, ALL WATER GOES OVER THE DAM." That sounds like an 86 cfs minimum flow (86 CFS IS THE MINIMUM RIVER FLOW TO START GENERATION), particularly since you say you are run-of-river. If you're run-of-river, the minute you turn off your unit(s), the spill begins. I infer from your email that your turbine has a minimum operation flow of 64 cfs. Am I to assume that although the minimum flow per FERC is 22 cfs, in practice, the minimum flow is actually 86 (or inflow)? NO...WHEN FLOW EXCEEDS 86 CFS, WE ARE PERMITTED TO START. WE THEN CONSUME AT LEAST 64 CFS AND FLOW OVER THE DAM WILL GRADUALLY BE REDUCED FROM 86 TO 22 CFS. SEE THE DESCRIPTION BELOW AND THE ATTACHED SPREADSHEET FOR MORE REFINEMENT.

FLOW OVER THE DAM WILL FOLLOW THE INFLOW UNTIL THERE IS 86 CFS. IF FLOW IS AT 86 CFS OR MORE AND RISING, AN OPERATOR WILL VISIT THE PLANT AND TURN ON THE TURBINE. THE TURBINE WILL COME ON AND CONSUME 64 CFS OF THAT FLOW AND THE OPERATOR WILL HAND OFF CONTROL TO THE PLANT'S CONTROLLER. THE PLANT'S PROGRAMMABLE LOGIC CONTROLLER WILL GRADUALLY BRING THE HEAD POND TO A PRESET LEVEL COINCIDENT WITH 22 CFS OVER THE DAM. THE CONTROLLER WILL ADJUST WATER USAGE UP OR DOWN TO MAINTAIN THE REQUIRED MINIMUM 22 CFS OVER THE DAM UNTIL RIVER FLOW EXCEEDS THE PLANT'S MAXIMUM WATER USE AT WHICH POINT WATER OVER THE DAM WILL CLIMB ABOVE 22 CFS AND WILL EQUAL THE PLANT'S MAXIMUM CONSUMPTION MINUS RIVER FLOW. IF FLOW DROPS BELOW 86 CFS IN THE RIVER, THE PLANT SHUTS DOWN AND AND THE WATER OVER THE DAM WILL GRADUALLY CLIMB FROM 22 CFS TO 86 CFS AND WILL THEN TRACK THE RIVER FLOW.

THIS IS A TYPICAL FLOW REGIME FOR RUN-OF-RIVER PLANTS.

I TRUST THAT THE DESCRIPTION ABOVE ALONG WITH THE ATTACHMENT ILLUSTRATE THE FLOW REGIME FOR MECHANICSVILLE.

2. We normally don't comment on these applications without seeing the project. You have sent me two photos. One of your kids on the apron which doesn't really show me much and one of the southern extent of the spillway-- which is helpful, as far as it goes. But I haven't seen the powerhouse, the area of

the draft tubes and tailrace (if there is one), etc. Do you have any other shots of the project you can send me?

YOUR LAST EMAIL INDICATES THAT YOU NOW HAVE THE PHOTOS YOUR REQUIRE. PLEASE LET ME KNOW IF YOU NEED MORE.

3. In regards to the eel pass, you need to understand that eels are able to get over most dams to a certain degree but our data show that dams significantly reduce densities of eels upstream. The dams don't stop all but they stop a lot. Eel passes increase the number that get over the dam and increase the population size. There is also an issue of downstream passage of eels. When the adult eels head to sea, they are 24 - 36" long, all female, and very vulnerable to turbine mortality. Green projects are taking steps to protect them. The technology for passing eels downstream is not very advanced and the best way is to temporarily halt generation. The season is from September 1 to November 15 and they migrate only at night and only on rainy nights. Would you be willing to agree to turn off your unit(s) from dusk to midnight on rainy fall nights during this time period?

IF YOU AGREE TO MY PLAN AND WE CAN MOVE FORWARD WITH YOUR DEPARTMENTS APPROVAL WITHIN THE NEXT FEW BUSINESS DAYS, I WILL ACCEPT YOUR SUGGESTION TO SHUT DOWN DURING THE AFOREMENTIONED PERIODS.

In regards to the leakage in the four gates, I assume that this is truly just leakage with gaps of less than an inch wide, not suitable for passing large eels. Often such gates also have muck or debris around them, so they are not suitable for passing downstream running eels. If you suspect otherwise (that eels may be able to find the gaps and pass through them), advise me of this (photos?) prior to stopping all leakage.

THE FOUR "GATES" ARE 4" DIAMETER PIPES. YES THEY ARE VULNERABLE TO CLOGGING. ONE HOWEVER IS DIFFERENT THEN THE OTHER THREE. IT RESIDES AT THE SOUTHERN MOST POINT ON THE DAM, WHERE I HAVE FLOW OVER THE BOARDS...THUS AN ATTRACTION FLOW. IT IS ON THE FACE OF AN UNDER WATER CONCRETE BLOCK, NEAR THE BOTTOM OF THE POND, ABOUT THREE FEET IN FRONT OF THE DAM CREST. I THINK IT IS LARGE ENOUGH TO PASS EELS AND IN FACT SOUNDS SIMILAR TO YOUR DESCRIPTION OF THE "TUBE" YOU WANT TO INSTALL. I HAVE NEVER SEEN THIS PIPE CLOG AND IF IT DID, IT IS THE EASIEST ONE TO ACCESS AND CLEAR. I SUGGEST WE BLOCK THE OTHER THREE PIPES (WHICH CAN BE REVERSED LATER). I MAKE THE REPAIRS TO THE OTHER LEAKS AND YOU VISIT LATER THIS SUMMER. YOU CAN THEN DETERMINE IF YOU WANT TO BLOCK THE FOURTH PIPE OR NOT AND IF YOU WANT TO HAVE ME INSTALL THE 4" TUBE.

You have your exemption and you're able to generate. We know you're operating "legally". But we are not comfortable endorsing this certification until we know that you are operating as green as possible. If you can answer these questions and send some photos, we may be able to follow your proposal and provide an endorsement now with a summer visit later to check on how you've controlled the leakage and discuss the installation of an eel pass, which we would not expect you to initiate until after our visit.

I HOPE GIVEN MY COOPERATION AND SHARED DESIRE TO OPERATE IN AN ENVIRONMENTALLY RESPONSIBLE FASHION, YOU WILL ENDORSE MY CERTIFICATION NOW. I GIVE YOU MY WORD THAT I WILL COOPERATE WITH YOU WHEN YOU VISIT. I THINK IT WILL BE BENEFICIAL FOR ME TO HAVE THE PROPOSED CHANGES IN PLACE BEFORE YOUR VISIT SO THAT YOU CAN CONFIRM MY WORK. I LOOK FORWARD TO YOUR REPLY.

REGARDS,

ROLLAND ZELENY
MECHANICSVILLE HYDRO

603-498-8089

Steve

Steve Gephard
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From: Rolland Zeleny [indigoharbor@yahoo.com]
Sent: Wednesday, June 29, 2011 5:47 PM
To: Gephard, Steve; Golembiewski, Brian
Subject: Re: Mechanicsville LIHI Application

Steve,

Following on to my earlier email, I have confirmed with the former owner of the Mechanicsville site that I could easily block the four channels and make minor repairs to block leakage through the dam. I have given more thought to this and think that these steps will simplify the flow issues at my project. The final result would be to pass all minimum flows over the dam, which resolves the issue with low flows in the summer and complications in calculating minimum flows due to leakage. I would ask that you approve of the following plan and that we move forward asap:

1) Block all four channels (one may be opened up if you decide we can not install the 4" tube you suggested).
2) Make repairs to block leakage through the dam's granite blocks in several locations.
3) Pass all minimum flows over the dam through 3 of the southern bays (33 feet weir).
4) Install eel passage based on your earlier recommendation or modification thereof.
6) Send your recommendations to LIHI within the next next week.
5) Visit the site later this summer (if required) to verify all work.

If you give me your approval, I will commence work as soon as flows permit. I trust that this efforts will resolve the outstanding issues and that we can now move forward. I look forward to your reply.

Regards,

Rolland Zeleny
Mechanicsville Hydro
603-498-8089

CONTACTS

Entity	Authorized Representatives	Contact Information
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