

LOW IMPACT HYDROPOWER INSTITUTE

APPENDIX B – QUESTIONNAIRE DECEMBER, 2013 REVISION

Background Information	
1) Name of the Facility as used in the FERC license/exemption.	Glendale Hydroelectric Project
2) Applicant's name, contact information and relationship to the Facility. If the Applicant is not the Facility owner/operator, also provide the name and contact information for the Facility owner and operator. Also provide contact information for Compliance and Accounts Payable, including email addresses.	<p>Littleville Power Company, Inc One Tech Drive, Suite 220 Andover, MA 01810 Attn: Randald Bartlett Regional Manager- MA/CT (978) 513-3401 Email: Randald.Bartlett@ENEL.com</p> <p>Mr. Bartlett can be contacted for information regarding Compliance.</p> <p>Accounts Payable may be contacted regarding accounts payments at (978) 296-1900 or at Accounts.Payable@ENEL.com</p> <p>Littleville Power Company, Inc (LPC), a subsidiary of ENEL Green Power North America, Inc., is the owner, licensee and operator of the Facility</p>
3) Location of Facility including (a) the state in which Facility is located; (b) the river on which Facility is located; (c) the river-mile location of the Facility dam; (d) the river's drainage area in square miles at the Facility intake; (e) the location of other dams on the same river upstream and downstream of	The Glendale Hydroelectric Project is located at Housatonic River Mile 122 in the town of Stockbridge, Berkshire County, MA. The Project has a 272 square mile drainage area and is located

<p>the Facility; and (f) the exact latitude and longitude of the Facility dam.</p>	<p>approximately 6 miles downstream of the Willow Mill Hydroelectric Project (FERC No. 2985) and 4 miles upstream of the Risingdale Dam (non-hydroelectric). The project's coordinates are: Latitude: 42.2800000000 Longitude: -73.3500000000 Refer to Attachment 3 for a location basin map for the development.</p>
<p>4) Installed capacity.</p>	<p>Glendale Hydroelectric Project currently has 1.14MW of installed capacity at a four unit powerhouse development. The new operating license authorizes installation of a 165 kW unit at the dam for a future installed capacity of 1.305 MW.</p>
<p>5) Average annual generation.</p>	<p>5.0 GWH</p>
<p>6) Regulatory status.</p>	<p>The Glendale Hydroelectric Project received a subsequent license from the FERC on August 19, 2009 as FERC Project No. 2801. The license expires on November 1, 2049. The Project has completed all license order compliance requirements. LPC has begun installation of the new generation unit with expected completion by April 2014. Refer to Attachment #6 for the complete license document.</p>
<p>7) Reservoir volume and surface area measured at the normal maximum operating level.</p>	<p>The Glendale Hydroelectric Project impoundment has a surface area of approximately 23 acres. Gross storage capacity at the normal pond level is 87-acre feet. The Project is operated as a run-of-river facility with no appreciable usable storage capacity.</p>

8) Area occupied by non-reservoir facilities (e.g., dam, penstocks, powerhouse).	9 acres
9) Number of acres inundated by the Facility.	16 acres
10) Number of acres contained in a 200-foot zone extending around entire reservoir.	47 acres
11) Contacts for Resource Agencies and non-governmental organizations	See Attachment #11
12) Description of the Facility, its mode of operation (i.e., peaking/run of river) and photographs, maps and diagrams.	See Attachment #12
Questions for “New” Facilities Only: If the Facility you are applying for is “new” (i.e., an existing dam that added or increased power generation capacity after August of 1998) please answer the following questions to determine eligibility for the program.	
13) When was the dam associated with the Facility completed?	1906
14) When did the added or increased generation first generate electricity? If the added or increased generation is not yet operational, please answer question 18 as well.	The additional generation is currently under construction. The new 165 kW unit will be located at the dam and will be used to pass the development's bypass minimum flow requirement.
15) Did the added or increased power generation capacity require or include any new dam or other diversion structure?	No. The new unit will be located downstream of the existing dam waste gates with water supplied from the existing power canal.
16) Did the added or increased capacity include or require a change in water flow through the facility that worsened conditions for fish, wildlife, or water quality (for example, did operations change from run-of-river to peaking)?	No. The new unit will be used to supply bypass reach flows.

<p>17 (a) Was the existing dam recommended for removal or decommissioning by resource agencies, or recommended for removal or decommissioning by a broad representation of interested persons and organizations in the local and/or regional community prior to the added or increased capacity?</p> <p>(b) If you answered “yes” to question 17(a), the Facility is not eligible for certification, unless you can show that the added or increased capacity resulted in specific measures to improve fish, wildlife, or water quality protection at the existing dam. If such measures were a result, please explain.</p>	<p>No</p>	
<p>18 (a) If the added or increased generation is not yet operational, has the increased or added generation received regulatory authorization (e.g., approval by the Federal Energy Regulatory Commission)? If not, the facility is not eligible for consideration; and</p> <p>(b) Are there any pending appeals or litigation regarding that authorization? If so, the facility is not eligible for consideration.</p>	<p>a) Yes - refer to Attachment #18</p> <p>b) No - the resource agencies have been consulted regarding the details of the new unit and have approved the design. Refer to Attachment #18</p>	
<p>A. Flows</p>	<p>PASS</p>	<p>FAIL</p>
<p>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?</p>	<p>Yes. The resource agencies confirmed in their comments on the final license application their support for run-of-river operations and a bypass minimum flow of 90 cfs. Refer to Attachment A for documentation. Historic bypass flow violations have been rectified through the increase of bypass flow (formerly 10 cfs) and new operation equipment and</p>	

	monitoring. Since implementation of the new license conditions there have been no minimum flow release violations.	
2) If there is no flow condition recommended by any Resource Agency for the Facility, or if the recommendation was issued prior to January 1, 1987, is the Facility in Compliance with a flow release schedule, both below the tailrace and in all bypassed reaches, that at a minimum meets Aquatic Base Flow standards or “good” habitat flow standards calculated using the Montana-Tennant method?	Not Applicable	
3) If the Facility is unable to meet the flow standards in A.2., has the Applicant demonstrated, and obtained a letter from the relevant Resource Agency confirming that demonstration, that the flow conditions at the Facility are appropriately protective of fish, wildlife, and water quality?	Not Applicable	
B. Water Quality	PASS	FAIL
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?	Yes - refer to Attachment B	

<p>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?</p>	<p>Yes. Based upon the 2002 water quality assessment, the entire 19.9 mile Housatonic River segment (MA21-19) from the upstream Woods Pond (10.5 miles upstream of the Project) to 0.7 miles downstream of the Project has been classified as impaired for aquatic life and fish consumption due to polychlorinated biphenyls (PCBs) contamination from the General Electric Company superfund site in Pittsfield, MA.</p> <p>The report also noted that historic flow fluctuations downstream of the Glendale project contributed to poor water quality. The new operation of the project as a ROR operation and the enhanced bypass minimum flow has rectified this</p>	
---	---	--

	contributing factor.	
<p>3) If the answer to question B.2 is yes, has there been a determination that the Facility does not cause, or contribute to, the violation?</p>	<p>Yes. LPC collected water quality data during relicensing activities and confirmed temperatures and DO concentrations met the state standards for Class B waters (class designation for river segment MA21-19). The change to run-of-river operations eliminated the Project's contribution to poor water quality due to flow fluctuations. The impaired status is due to historic PCB contamination from upstream sources. Refer to Attachment B.</p>	

C. Fish Passage and Protection	PASS	FAIL
1) Are anadromous and/or catadromous fish present in the Facility area or are they know to have been present historically?	Yes	
2) 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?	Not Applicable: Mandatory Fish Passage Prescriptions have not been issued for the Project. Article 402 of the operating license reserves FERC's authority to require fishways prescribed by the Secretary of the Interior. Installation of upstream passages systems for anadromous and catadromous fish is delayed pending installation of passage at the downstream Risingdale Dam and other dams downstream of the project. The Risingdale Dam is a non-hydroelectric project and upstream of several dams which are not equipped with anadromous or catadromous fish	

	<p>passage and protection systems. Passage at the Risingdale Dam is not expected for a significant number of years. The Glendale Project has installed 1-inch spaced racks to enhance entrainment protection and has confirmed impingement velocity satisfy current standards. Refer to Conditions 22 through 24 of the Water Quality Certificate (copy attached). Attachment C provides documentation of current status of prescriptions.</p>	
<p>3) 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 no longer have a migratory run)?</p> <p>a) If the fish are extinct or extirpated from the Facility area or downstream reach, has the Applicant demonstrated that the extinction or extirpation was not due in whole or part to the Facility?</p>	<p>Yes:</p> <p>a) Not Applicable. Migratory fish species are not able to reach the project area due to blockage by several dams downstream of the Project.</p>	

<p>b) If a Resource Agency Recommended adoption of upstream and/or downstream fish passage measures at a specific future date, or when a triggering event occurs (such as completion of passage through a downstream obstruction or the completion of a specified process), has the Facility owner/operator made a legally enforceable commitment to provide such passage?</p>	<p>b) Yes. The Project's subsequent operating license and WQC contain specific provisions for the design, installation and testing of upstream and downstream fish passage systems. Refer to License Articles 401 (a), 402, 404 and 405 and WQC Conditions 22, 23 and 24.</p>	
<p>4) If, since December 31, 1986:</p> <p>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 C.3.a above), and</p> <p>b) The Resource Agencies declined to issue a Mandatory Fish Passage Prescription,</p> <p>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?</p>	<p>a) Resource Agencies have reserved the right to prescribe Mandatory Fish Passage Prescription in the future.</p> <p>b) Yes</p> <p>c) Fish passage is not presently required at the Project since diadromous species are not able to reach the Project area due to lack of passage at several downstream dams</p>	

<p>5) If C4 was not applicable:</p> <p>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</p> <p>b) If the Facility is unable to meet the fish passage standards in 5.a, has the Applicant either i) demonstrated, and obtained a letter from the U.S. 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, or ii) committed to the provision of fish passage measures in the future and obtained a letter from the U.S. Fish and Wildlife Service or the National Marine Fisheries Service indicating that passage measures are not currently warranted?</p>	<p>Not Applicable</p>	
<p>6) Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and/or downstream passage of Riverine fish?</p>	<p>Not Applicable - no prescription for passage of riverine fish species has been issued for the Project. Refer to Attachment C for additional information.</p>	
<p>7) Is the Facility in Compliance with Resource Agency Recommendations for Riverine, anadromous and catadromous fish entrainment protection, such as tailrace barriers?</p>	<p>Yes: The Project is equipped with prescribed 1-inch spaced trashracks and maintains low inlet velocity to protect against entrainment and impingement. In</p>	

	addition, the new minimum flow unit will be equipped with 1-inch clear spaced trashracks in compliance with license article 403 and WQC Condition 21. The resource agencies have reviewed and approved the trashrack design. Refer to Attachment C	
D. Watershed Protection	PASS	FAIL
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 average annual high water line for at least 50% of the shoreline, including all of the undeveloped shoreline?		No - refer to Attachment 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?		No
3) Has the Facility owner/operator established through a settlement agreement with appropriate stakeholders, with 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)?		No. Refer to Attachment D for additional information.

<p>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?</p>	<p>Not Applicable - Neither the EA or license required the development of a shoreline management plan.</p> <p>The Project is operated in a run-of-river mode with little water level changes, except during seasonal high flow events. The Project has been in operation for numerous years with established and stable shorelines that do not have evidence of erosion concerns. Land ownership, local ordinances and land/water rights prevent the ability to install docks and similar systems along the impoundment.</p> <p>Attachment D provides excerpts from the original Environmental Assessment.</p>	
--	--	--

E. Threatened and Endangered Species Protection	PASS	FAIL
1) Are threatened or endangered species listed under state or federal Endangered Species Acts present in the Facility area and/or downstream reach?	No. Refer to Attachment E for additional information.	
2) If a recovery plan has been adopted for the threatened or endangered species pursuant to Section 4(f) of the Endangered Species Act or similar state provision, is the Facility in Compliance with all recommendations in the plan relevant to the Facility?	Not Applicable	
3) If the Facility has received authorization to incidentally Take a listed species through: (i) Having a relevant agency complete consultation pursuant to ESA Section 7 resulting in a biological opinion, a habitat recovery plan, and/or (if needed) an incidental Take statement; (ii) Obtaining an incidental Take permit pursuant to ESA Section 10; or (iii) For species listed by a state and not by the federal government, obtaining authorization pursuant to similar state procedures; is the Facility in Compliance with conditions pursuant to that authorization?	Not Applicable	
4) If a biological opinion applicable to the Facility for the threatened or endangered species has been issued, can the Applicant demonstrate that: a) The biological opinion was accompanied by a FERC license or exemption or a habitat conservation plan? Or b) The biological opinion was issued pursuant to or consistent with a recovery plan for the endangered or threatened species? Or c) There is no recovery plan for the threatened or endangered species under active development by the relevant Resource Agency? Or	Not Applicable	

d) The recovery plan under active development will have no material effect on the Facility's operations?		
5) If E.2 and E.3 are not applicable, has the Applicant demonstrated that the Facility and Facility operations do not negatively affect listed species?	Not Applicable	
F. Cultural Resource Protection	PASS	FAIL
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?	YES: The project is subject to the provisions of an approved Historic Properties Management Plan (HPMP). A copy of the FERC order approving the HPMP is provided in Attachment F. LPC is not required to provide annual or periodical compliance reports but contacts the State Historic Preservation Office when required by the HPMP. LPC has requested a letter from the State Historic Preservation Office to provide written confirmation that the	

	project remains in compliance with the terms of the HPMP. Attachment F also provides excerpts from the 2009 Environmental Assessment created during the recent licensing activities.	
2) If not FERC-regulated, does the Facility owner/operator have in place (and is in Compliance with) a plan for the protection, mitigation or enhancement of impacts to Cultural Resources approved by the relevant state or federal agency or Native American Tribe, or a letter from a senior officer of the relevant agency or Tribe that no plan is needed because Cultural Resources are not negatively affected by the Facility?	Not Applicable	
G. Recreation	PASS	FAIL
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?	Yes: Article 406 of the FERC license required the installation of a canoe portage, take-out, put-in, vehicle access road with parking and appropriate signage and fencing. The recreational requirements have been completed. Attachment G includes the general	

	<p>site plan for public access, the recreational plan with consultation notes, the FERC order approving the plan and site photographs of the completed facilities. LPC has requested a confirmation letter to be submitted to LIHI in support of this application.</p>	
<p>2) If not FERC-regulated, does the Facility provide recreational access, accommodation (including recreational flow releases) and facilities, as Recommended by Resource Agencies or other agencies responsible for recreation?</p>	<p>Not Applicable</p>	
<p>3) Does the Facility allow access to the reservoir and downstream reaches without fees or charges?</p>	<p>YES: Public access to the reservoir and downstream reaches are without fee or charges. Access to the southern impoundment and bypass shore is not available through LPC controlled or public lands. Public access near the transformer yard and powerhouse area is restricted by fencing for public safety and</p>	

	<p>security measures. All public access to the impoundment and immediate downstream reach is along the northern shore. Vehicular access and parking is provided near the portage route. The facility is equipped with a canoe portage route and put in/take out at the impoundment and bypass.</p>	
H. Facilities Recommended for Removal	PASS	FAIL
1) Is there a Resource Agency Recommendation for removal of the dam associated with the Facility?	No	