

**LOW IMPACT HYDROPOWER INSTITUTE**  
**P-2986 Crescent Hydroelectric Project Application**

APPENDIX B – QUESTIONNAIRE  
 April 2014 REVISION

<b>Background Information</b>	
1) Name of the Facility as used in the FERC license/exemption.	Crescent (Texon) Hydroelectric Project
2) Applicant's complete contact information (please use Appendix D, Project Contact Form)	<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>Littleville Power Company, Inc (LPC), a subsidiary of ENEL Green Power North America, Inc., is the owner, licensee and operator of the Facility.</p> <p>Refer to Appendix D for additional contact information</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 Facility; and (f) the exact latitude and longitude of the Facility dam.	The Crescent Project is operated in a run-of-river mode and is located at Westfield River Mile 24 (to confluence with the Connecticut River) in the town of Russell, Hampden County, MA. The Project has a 329 square mile drainage area and is located approximately 6 miles downstream of the

	<p>Knightville Dam (ACOE non-hydroelectric) and 2.4 miles upstream of the Indian River Hydroelectric Project (FERC No. 12462). The project's coordinates are:  Latitude: 42.26500000000  Longitude: -72.88167000000  Refer to Attachment 3 for a location basin map for the development.</p>
4) Installed capacity.	Crescent Project has 1.5MW of installed capacity at a single unit powerhouse development.
5) Average annual generation.	5.6 GWH
6) Regulatory status.	The Crescent Project received an Order Granting Exemption from Licensing from the FERC on May 11, 1982 as FERC Project No. 2986. The Project has completed all license order compliance requirements. Refer to Attachment #6 for a copy of the original Exemption Order which has not been modified since initial issuance.
7) Reservoir volume and surface area measured at the normal maximum operating level.	The Crescent Impoundment has a reservoir volume of 12 Acre-Feet with a surface area of 3 acres. The Project is operated as a run-of-river facility with no appreciable usable storage capacity.
8) Area occupied by non-reservoir facilities (e.g., dam, penstocks, powerhouse).	0.5 acres
9) Number of acres inundated by the Facility.	3 acres
10) Number of acres contained in a 200-foot zone extending around entire reservoir.	7.5 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.	The Crescent Project is operated in a run-of-river mode and consists of: (a) a 250 wide 12 foot high masonry gravity dam with 3 foot high wooden flashboards; (b) an angled bar rack intake; (c) a downstream fish passage collection chamber and bypass pipe; (d) a trash sluice; (e) concrete inlet channel and forebay; (f) a single unit powerhouse; (g) substation; (h) a canoe portage; and (i) appurtenant facilities. Refer to Attachment #12 for additional information and project photographs.
<p><b>Questions for “New” Facilities Only:</b>  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.</p>	Not Applicable
13) When was the dam associated with the Facility completed?	
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.	
15) Did the added or increased power generation capacity require or include any new dam or other diversion structure?	
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)?	
17 (a) Was the existing dam recommended for removal or decommissioning	

<p>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>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><b>A. Flows</b></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>Not Applicable, conditions issued prior to December 31, 1986</p>	
<p>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?</p>	<p>Yes. The License and Water Quality Certificate, issued prior to January 1, 1987, each set the required minimum flow release for the Project that established the Aquatic Base Flow standard for the Project. As noted in the</p>	

	<p>October 1980 USFWS Letter (copy in Attachment A), operation of the project in a run-of-river mode will satisfy the Aquatic Base Flow standard. The Project is operated in a run-of-river mode and has a limited bypass area. River flows are typically in excess of the required minimum project flow which resource agencies have verbally confirmed remain appropriate for the Project. Refer to Attachment A for documentation that required minimum flow releases have been supplied as required by the operating license.</p>	
<p>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?</p>	<p>Not Applicable</p>	
<p><b>B. Water Quality</b></p>	<p>PASS</p>	<p>FAIL</p>
<p>1) Is the Facility either:</p> <p>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</p> <p>b) In Compliance with the quantitative water quality standards established</p>	<p>1 a) Not Applicable (Water Quality Certificate issued prior to December 31, 1986.</p> <p>1 b) Yes - The Project waters are classified as Class B (refer to</p>	

<p>by the state that support designated uses pursuant to the federal Clean Water Act in the Facility area and in the downstream reach?</p>	<p>Attachment B for a copy of the designation and standards). Attachment B provides excerpts from the most recent water quality monitoring information confirming compliance with the standards. In addition, the State agencies have verbally confirmed the standards are being met. Refer to Attachment B for additional information.</p>	
<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>No. The 2001 Water Quality Assessment Report (excerpts in Attachment B, results summarized on pp 58-59 of report), the most recent river data, reported dissolved oxygen levels of between 8.0 and 10 mg/l, exceeding the state standard of 5.0 mg/l. The water quality also satisfies all other state standards. The 2010 Westfield River Water Quality Monitoring Project (excerpts in Attachment B, table 3) provides additional confirmation of meeting state standards. Refer to Attachment B for additional information.</p>	
<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>Not Applicable</p>	

<b>C. Fish Passage and Protection</b>	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?	Yes. LPC and Resource agencies consulted in the 1990s regarding fish passage at the Project, effectively establishing the mandatory fish passage prescription for the Project. Downstream fish passage to support Atlantic Salmon stocking efforts was installed at the Project in 1993 with modifications occurring in 1997. Installation of upstream passages systems for anadromous and catadromous fish is delayed pending installation of passage at the downstream Indian River Project and other dams downstream of the project. The downstream fish passage includes an angled bar rack intake with seasonally installed 1-inch bar racks, collection chamber and transport pipe. Efforts to stock Atlantic Salmon upstream of the Project have been discontinued by State and Federal agencies.	

	<p>As an Exempted Project the resource agencies retain the authority to require fishways prescribed by the Secretary of the Interior in the future once a need for such facilities has been established. Upstream fish passage at the Indian River Project is not expected for a significant number of years. Upstream passage for catadromous species is expected to be required and installed within the next few years, once such facilities have been installed at the downstream Indian River Project. Attachment C provides documentation of the most recent discussions regarding passage requirements at the Project. Attachment C also provides a letter of commitment from LPC to install catadromous passage facilities when required by the resource agencies.</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>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>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>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>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 Mandatory Fish Passage Prescriptions for Riverine Fish has been issued.</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 to protect against entrainment and impingement. The resource agencies have reviewed and approved the trashrack design. Refer to Attachment C. Tailrace measures are not required.</p>	

<b>D. Watershed Protection</b>	<b>PASS</b>	<b>FAIL</b>
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?	Yes - The 1996 Massachusetts Rivers Protection Act creates a 200-foot riverfront area that extends on both sides of rivers and streams. The area is also subject to provisions of the Memorandum of Agreement for Protection of the Westfield River administered by the local permitting commission. Refer to Attachment D for additional information.	
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
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?	Not Applicable	

<b>E. Threatened and Endangered Species Protection</b>	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 a copy of the Federal Listing which indicates that none are in the Project area.	
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?		
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?		
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		

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?		
<b>F. Cultural Resource Protection</b>	<b>PASS</b>	<b>FAIL</b>
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. Attachment F provides confirmation that the project is not subject to an historic management plan and includes a copy of the Exemption Order conditions relating to Cultural Resource protection.	
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	
<b>G. Recreation</b>	<b>PASS</b>	<b>FAIL</b>
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. The original Exemption Order did not require the installation of recreational facilities. Significant recreational facilities are available at the	

	upstream Knightville Dam operated by the ACOE. LPC has installed canoe portage and fishing access trails on the river left embankment. Refer to Attachment G for photographs of the access trail and canoe put-in/take-out facilities.	
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?	Not Applicable	
3) Does the Facility allow access to the reservoir and downstream reaches without fees or charges?	Yes. Access to the impoundment is available from the powerhouse drive. Access to the river right tailrace area is restricted by the non-project mill security fencing and the steep topography of the area. Access to the river left tailrace area is accomplished through the canoe portage trail. Public access near the transformer yard and powerhouse area is restricted by fencing for public safety and security measures.	
<b>H. Facilities Recommended for Removal</b>	PASS	FAIL
1) Is there a Resource Agency Recommendation for removal of the dam associated with the Facility?	No	

