

Low Impact Hydropower Institute

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LOW IMPACT HYDROPOWER QUESTIONNAIRE

[Excerpted from Part VI, Section E of the Low Impact Hydropower Certification Program. Words in italics are defined in Part VI, Section C, and line-by-line instructions are available in Section D of the program, available on-line in PDF format at <http://www.lowimpacthydro.org>.

E. LOW IMPACT HYDROPOWER QUESTIONNAIRE

Background Information			
1) Name of the <i>Facility</i> .	Deerfield River Project (LP 2323)		
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.	TransCanada Hydro Northeast Inc 110 Turnpike Road, Suite 203 Westborough, MA 01581		
3) Location of Facility by river and state.	Deerfield River, Vermont and Massachusetts		
4) Installed capacity.	<p>A total of 86 MW installed capacity, based on the most recent audit, as follows:</p> <table border="1" data-bbox="1213 1187 1829 1256"> <tr> <td>Searsburg</td> <td>5 MW</td> </tr> </table> <p style="border: 1px solid red; padding: 2px;">Harriman = 41 MW ? to get 86 total</p>	Searsburg	5 MW
Searsburg	5 MW		

	Sherman	6 MW
	Deerfield No. 5	14 MW
	Deerfield No. 4	6 MW
	Deerfield No. 3	7 MW
	Deerfield No. 2	7 MW
	TOTAL	86 MW
5) Average annual generation.	10-Year Average Net Generation:	
	Searsburg	18,392 MWH
	Harriman	103,686 MWH
	Sherman	30,457 MWH
	Deerfield #5	54,469 MWH
	Deerfield #4	24,213 MWH
	Deerfield #3	27,070 MWH
	Deerfield #2	28,337 MWH
	TOTAL	286,625 MWH
6) Regulatory status.	Federal Energy Regulatory Commission #2323 issued April 4, 1997 for a 40 year term. The License is based upon a comprehensive Settlement Agreement executed between TransCanada and Resource Agencies and stakeholders. See Attachment A.	

7) Reservoir volume and surface area measured at the high water mark in an average water year.	Development	Storage (acre ft)	Area (acres)
	Somerset	57,345	1,514
	Searsburg	412	30
	Harriman	117,300	2,039
	Sherman	3,593	218
	Deerfield No. 5	118	38
	Deerfield No. 4	467	75
	Deerfield No. 3	221	42
	Deerfield No. 2	350	63.5
8) Area occupied by non-reservoir facilities (e.g., dam, penstocks, powerhouse).	Not required		
9) Number of acres inundated by the Facility.	Not required		
10) Number of acres contained in a 200-foot zone extending around entire impoundment.	Not required		
11) Please attach a list of contacts in the relevant Resource Agencies and in non-governmental organizations that have been involved in Recommending conditions for your Facility.	See Attachment B		
12) Please attach a description of the Facility, its mode of operation (i.e., peaking/run of river) and a map of the Facility.	See Attachment C		
Questions for 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	N/A		
13) When was the dam associated with the Facility completed?	N/A		

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.	N/A	
15) Did the added or increased power generation capacity require or include any new dam or other diversion structure?	N/A	
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)?	N/A	
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? (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.	N/A	
18 (a) If the increased or added 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 (b) Are there any pending appeals or litigation regarding that authorization? If so, the facility is not eligible for consideration.	N/A	
A. Flows	PASS	FAIL
1) Is the Facility in <i>Compliance with Resource Agency Recommendations</i> 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?	YES = Pass, Go to B N/A = Go to A2 YES – A variety of flow and reservoir conditions were included in the License. See Attachment D	NO = Fail
2) If there is no flow condition recommended by any Resource Agency for the	YES = Pass, go to B	

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?	NO = Go to A3	
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?	YES = Pass, go to B	NO = Fail
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 = Go to B2 a) YES – See Attachment D. Water Quality Certifications are included in Attachment A.	NO = Fail
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?	YES = Go to B3 NO = Pass YES – See Attachment D.	
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?	YES = Pass YES - See Attachment D.	NO = Fail
C. Fish Passage and Protection	PASS	FAIL
1) Is the Facility in Compliance with <i>Mandatory Fish Passage Prescriptions</i> for upstream and downstream passage of anadromous and catadromous fish issued by Resource Agencies after December 31, 1986?	YES = Go to C5 N/A = Go to C2 YES - See Attachment D.	NO = Fail

<p>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 (<i>e.g.</i>, because passage is blocked at a downstream dam or the fish run is extinct)?</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>YES = Go to C2a NO = Go to C3</p> <p>YES = Go to C2b N/A = Go to C2b</p> <p>YES = Go to C5 N/A = Go to C3</p>	<p>NO = Fail</p> <p>NO = Fail</p>
<p>3) 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 C2a 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>NO = Go to C5 N/A = Go to C4</p>	<p>YES = Fail</p>
<p>4) If C3 was not applicable:</p>	<p>YES = Go to C5</p>	<p>NO = Fail</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 4.a., 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?</p>		
<p>5) Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and/or downstream passage of <i>Riverine</i> fish?</p>	<p>YES = Go to C6 N/A = Go to C6</p> <p>N/A - There is no federal mandatory prescription for the passage of riverine fish within the Project, however License Article 407 reserves future FERC authority to order such fishways as prescribed by the US Department of Interior.</p>	<p>NO = Fail</p>
<p>6) Is the Facility in Compliance with Resource Agency Recommendations for Riverine, anadromous and catadromous fish entrainment protection, such as tailrace barriers?</p>	<p>YES = Pass, go to D N/A = Pass, go to D</p> <p>YES – See Attachment D.</p>	<p>NO = Fail</p>
<p>D. Watershed Protection</p>	<p>PASS</p>	<p>FAIL</p>
<p>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</p>	<p>YES = Pass, go to E and receive 3 extra years of certification</p> <p>YES –Based on total Project area and all facilities taken as a whole, the conservation easements (see D.3 below) provide for this buffer. Taken</p>	<p>NO = go to D2</p>

	individually, Somerset, Searsburg, Harriman and Sherman impoundments have this buffer zone; while the smaller Deerfield No. 5, No. 4, No. 3 and No. 2 impoundments do not.	
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?	YES = Pass, go to E and receive 3 extra years of certification YES – See Attachment D.	NO = go to D3
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)	YES = Pass, go to E YES - See Attachment D.	NO = go to D4
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.	YES = Pass, go to E	No = Fail
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?	YES = Go to E2 NO = Pass, go to F YES – See Attachment D.	
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?	YES = Go to E3 N/A = Go to E3 N/A - Vermont has a state recovery plan for the formerly state-listed common loon. The Project is in compliance with all loon-related	NO = Fail

	<p>recommendations relevant to Somerset Reservoir. The Company implemented a local recovery plan for the tubercled orchid although there is no State recovery plan for that species.</p> <p>See Attachment D.</p>	
<p>3) If the Facility has received authority to incidentally <i>Take</i> 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 authority pursuant to similar state procedures; is the Facility in Compliance with conditions pursuant to that authority?</p>	<p>YES = Go to E4 N/A = Go to E5</p> <p>YES - See Attachment D.</p>	NO = Fail
<p>4) If a biological opinion applicable to the Facility for the threatened or endangered species has been issued, can the Applicant demonstrate that:</p> <p>a) The biological opinion was accompanied by a FERC license or exemption or a habitat conservation plan? Or</p> <p>b) The biological opinion was issued pursuant to or consistent with a recovery plan for the endangered or threatened species? Or</p> <p>c) There is no recovery plan for the threatened or endangered species under active development by the relevant Resource Agency? Or</p> <p>d) The recovery plan under active development will have no material effect on the Facility's operations?</p>	<p>YES = Pass, go to F</p> <p>a) YES – The state biological opinion for the tubercled orchid was included in the FERC License. See Attachment D.</p> <p>b) N/A</p> <p>c) N/A - There is no Vermont recovery plan for the tubercled orchid. However, there is a Vermont recovery plan for the formerly listed common loon. See Attachment D.</p> <p>d) N/A</p>	NO = Fail
<p>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?</p>	<p>YES = Pass, go to F</p>	NO = Fail

	N/A	
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 = Pass, go to G N/A = Go to F2 YES - See Attachment D.	NO = Fail
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 <i>Native American Tribe</i> , 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?	YES = Pass, go to G	NO = Fail
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 = Go to G3 N/A = Go to G2 YES - See Attachment D.	NO = Fail
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?	YES = Go to G3	NO = Fail
3) Does the Facility allow access to the reservoir and downstream reaches without fees or charges?	YES = Pass, go to H YES – All access is free and open to the public.	NO = Fail
H. Facilities Recommended for Removal	PASS	FAIL
1) Is there a Resource Agency Recommendation for removal of the dam associated with the Facility?	NO = Pass, Facility is Low Impact	YES = Fail

	NO – There are no Resource Agency Recommendations for removal of any dams associated with the Project.	
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