

Low Impact Hydropower Institute

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LOW IMPACT HYDROPOWER QUESTIONNAIRE APPLICANT FORMAT

[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/Jan02criteria.pdf>].

E. LOW IMPACT HYDROPOWER QUESTIONNAIRE

Background Information	Applicant Answer
1) Name of the <i>Facility</i> .	Beaver River Project, FERC No. 2645, comprised of the following eight facilities (from upstream to downstream): Moshier, Eagle, Soft Maple, Effley, Elmer, Taylorville, Belfort, and High Falls.
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.	Reliant Energy [fill in name/address of person to be official contact on application]
3) Location of Facility by river and state.	Beaver River, New York
4) Installed capacity.	Total installed capacity is 44.8 MW. By facility, installed capacity is as follows [insert]:

	Moshier: Eagle: Soft Maple: Effley: Elmer: Taylorville: Belfort: High Falls:
5) Average annual generation.	[Should be total average annual generation over the past ten years; FERC EA listed as 197 gigawatt hours, or 197,000 megawatt hours; correct if needed]
6) Regulatory status.	Relicensed via a collaborative settlement. The settlement was signed in 1995 and the new license was issued in 1996.
7) Reservoir volume and surface area measured at the high water mark in an average water year.	Moshier: 7,339 acre feet and 340 surface acres Eagle: 668 acre feet, 138 surface acres Soft Maple: 2,678 acre fee and 400 surface acres Effley: 3,140 acre fee, and 340 surface acres Elmer: 345 acre feet and 34 surface acres Taylorville: 1,091 acre feet and 170 surface acres Belfort: 120 acre feet and 50 surface acres High Falls: 1,058 acre feet and 145 surface acres [From the FERC license order]
8) Area occupied by non-reservoir facilities (e.g., dam, penstocks, powerhouse). [Requested information, but not required]	
9) Number of acres inundated by the Facility. [Requested information, but not required]	
10) Number of acres contained in a 200-foot zone extending around entire impoundment. [Requested information, but not required]	
11) Please attach a list of contacts in the relevant	[Attach list with names and telephone or e-mail

<p>Resource Agencies and in non-governmental organizations that have been involved in Recommending conditions for your Facility.</p>	<p>address of key resource agencies –eg FWS, DEC, and NGOs involved with settlement]</p>
<p>12) Please attach a description of the Facility, its mode of operation (<i>i.e.</i>, peaking/run of river) and a map of the Facility.</p>	<p>Beaver River Project operations are controlled by the daily releases of the upstream Stillwater Reservoir, which is operated by Hudson-Black, an entity created by New York to regulate river flows, principally for the purposes of flood control and flow augmentation. Reliant operates its eight developments as store-and-release facilities that operate in a peaking mode. Reliant discharges water in a concentrated time frame associated with peak electric demand periods, usually weekday hours. Discharges are curtailed during off-peak hours.</p> <p>The Soft Maple Development has the greatest discharge capacity and, therefore, operates with the highest concentration of power generation. At the succeeding downstream developments, water is stored and released at lower generation levels over longer peak demand periods. Together, the developments convert (reregulate) the peaking flow into a steadier continuous flow at the furthest downstream development, High Falls, which maintains a base minimum flow of 250 cubic feet per second (cfs) downstream of the powerhouse. During periods of reduced flow from the Stillwater Reservoir, Reliant draws water from the storage at the Moshier, Soft Maple, Effley, and High Falls Developments to maintain the base minimum flow. [Taken verbatim from FERC licensing order, changing Niagara Mohawk to Reliant].</p>
<p>Questions for “New” Facilities Only:</p>	<p>Not applicable.</p>

<p>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. [If your facility was constructed and operating as of August of 1998, skip questions 13-17 and proceed to section A].</p>	
<p>13) When was the dam associated with the Facility completed?</p>	
<p>14) When did the added or increased generation first generate electricity?</p>	
<p>15) Did the added or increased power generation capacity require or include any new dam or other diversion structure?</p>	
<p>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)?</p>	

<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>			
A. Flows	PASS	FAIL	Applicant Answer
<p>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?</p>	<p>YES = Pass, Go to B N/A = Go to A2</p>	<p>NO = Fail</p>	<p>Yes, the Beaver River project is in compliance with resource agency recommendations issued after December 31, 1986 regarding flow conditions.</p> <p>The settlement agreement includes requirements for flow releases recommended by the New York State Department of Environmental Conservation (NYSDEC) and the U.S Fish and Wildlife Service (USFWS).</p> <p>Minimum flows in the bypassed reaches are specified at each development as follows:</p> <p>Moshier: 30 cfs until structural modifications are put in place, then release 45 cfs (implementation date?) Eagle: 45 cfs, with a possible reduction to 30 cfs (commenced August 1997)</p>

		<p>Soft Maple: 20 cfs until structural modifications are in place, then release 35 cfs (implementation date?) Effley: 20 cfs (implementation date?) Elmer: 20 cfs, with a possible reduction to 10 cfs. (implementation date?) Taylorville: 60 cfs, with a possible reduction to 45 cfs (commenced August 1997) Belfort: 20 cfs (implementation date?) High Falls: 10 cfs until structural modifications are put in place, then release 30 cfs (implementation date?)</p> <p>The method of release and time of implementation are also established in the settlement as recommended by the resource agencies and others.</p> <p>Year-round flows of 250 cfs are provided at High Falls. Under low-flow conditions, Reliant must take additional steps to maintain the flow to the extent feasible.</p> <p>Maximum daily reservoir fluctuations under normal flow conditions are limited as follows:</p> <p>Moshier: 1.5 feet from July 1 to April 30, 1 foot from May 1 to June 30. Eagle: 1 foot. Soft Maple: 1.5 feet from July 1 to April 30, 1 foot from May 1 to June 30. Effley: 1.5 feet from July 1 to April 30, 1 foot from May 1 to June 30. Elmer: 1 foot. Taylorville: 1 foot. Belfort: 1 foot. High Falls: 1.5 feet.</p>
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			<p>During low-flow periods, an additional fluctuation of 3 feet is permitted at Moshier, Soft Maple, Effley, and High Falls.</p> <p>Reliant provides releases for whitewater recreation at Moshier, Eagle, and Taylorville Developments. Unless modified by agreement, there is one release of 400 cfs for four hours in September or October at Moshier, five 4-hour releases of at least 200 cfs in September or October at Eagle, and five 4-hour releases not to exceed 400 cfs in September or October at Taylorville. Ramping flows (200/100 cfs) and a maximum equivalent lost energy (96,600 kWh) are also part of the recommended flow regime.</p> <p>[Adapted from FERC licensing order]</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?	YES = Pass, go to B 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:			Yes, the Beaver River Project is in compliance with

<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 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>YES = Go to B2</p>	<p>NO = Fail</p>	<p>all conditions issued pursuant to a Clean Water Act Section 401 water quality certification issued for the project on August 24, 1995. The section 401 certification is conditioned on compliance with the terms of the settlement agreement.</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>YES = Go to B3 NO = Pass</p>		<p>? [Need to answer this—my check of the EPA database for 303d listed rivers does not include the Beaver, though the Black is listed, primarily for metals in ponds/lakes; maybe talk about ph problems from tributaries?]</p>
<p>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?</p>	<p>YES = Pass</p>	<p>NO = Fail</p>	<p>? [If Beaver is listed as 303d limited, then would have to show that Beaver River project is not listed or considered a contributing factor; showing list may be enough, but confirmation from NYSDEC ideal]</p>
<p>C. Fish Passage and Protection</p>	<p>PASS</p>	<p>FAIL</p>	
<p>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?</p>	<p>YES = Go to C5 N/A = Go to C2</p>	<p>NO = Fail</p>	<p>?N/A—There are no mandatory fish passage prescriptions for upstream and downstream passage of anadromous or catadromous fish. ?</p>
<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</p>	<p>YES = Go to C2a NO = Go to C3</p> <p>YES = Go to C2b N/A = Go to C2b</p>	<p>NO = Fail</p>	<p>?No (natural barriers historically?) Or no anadromous—landlocked Atlantic salmon only? Eels?</p>

<p>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 C5 N/A = Go to C3</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>?No; the agencies had the opportunity to issue and considered issuing fish passage prescriptions, but did not do so because the project area is outside the expected range of anadromous or catadromous species, and there are other passage barriers downstream (???). The USFWS reserved section 18 authority. ??</p>
<p>4) If C3 was not applicable:</p> <p>a) Are upstream and downstream fish passage survival rates for anadromous and catadromous fish at the dam each</p>	<p>YES = Go to C5</p>	<p>NO = Fail</p>	

<p>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>NO = Fail</p>	<p>?N/A-there are no mandatory prescriptions (section 18 or similar) for the passage of riverine fish. However, as agreed in the settlement, downstream passage for riverine fish (what fish?) is assisted by flows, new release structures, or channel modifications at all but the Soft Maple facility. At Soft Maple, the agencies did not want to encourage passage of warmwater fish in the reservoir to the coldwater habitat of the bypassed reach, and so no downstream passage was enhanced (need confirmation).?</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>NO = Fail</p>	<p>?Yes, the settlement agreement requires the installation of 1 inch trash racks at all developments on a staggered implementation schedule. In addition, to prevent the passage of warmwater fish below the Soft Maple facility, ½ inch trash racks have been installed. ?</p>
<p>D. Watershed Protection</p>	<p>PASS</p>	<p>FAIL</p>	
<p>1) Is the Facility in Compliance with Resource Agency Recommendations, or, if none, with license conditions, regarding protection, mitigation or enhancement of lands inundated by the Facility or otherwise occupied by the Facility, and regarding other watershed protection, mitigation and enhancement activities?</p>	<p>YES and N/A= Pass</p>	<p>NO = Fail</p>	<p>??Yes, the Beaver River project is in compliance with resource agency recommendations regarding PM&E of lands and watershed protection. These include {list any erosion control, shoreline protection, habitat conservation easements, etc here}??</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?	YES = Go to E2 NO = Pass, go to F		?No—there are no state or federal threatened or endangered species present in the Beaver River project area or downstream reach. {Would want at least verbal on the record confirmation from NYSDEC and USFWS that prior conclusions to this effect remain the same}?
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	NO = Fail	
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?	YES = Go to E4 N/A = Go to E5	NO = Fail	
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	YES = Pass, go to F	NO = Fail	

<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>			
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?	YES = Pass, go to F	NO = Fail	
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	NO = Fail	? Yes, the facilities in the Beaver River project are in compliance with all requirements regarding cultural resource protection, mitigation, or enhancement included in the FERC license. A Programmatic Agreement and a Cultural Resources Management Plan for addressing the historic character of many of the facilities are in place. ?
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	

	PASS	FAIL	
G. Recreation			
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	NO = Fail	?Yes, the facilities of the Beaver River project are in compliance with access, accommodation and facilities conditions in its FERC license. This includes (summarize here the recreation improvements/enhancements provided):
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	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, no resource agency recommended removal of any of the dams associated with the Beaver River project??.