

# 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	Applicant Response
1) Name of the Facility.	Raystown Hydroelectric Project (William F. Matson Generating Station)
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.	Applicant/Operator:  Allegheny Electric Cooperative RD1 Raystown Dam P.O.Box 395 Huntingdon, PA 16652 Mr. Bill Shearn, Superintendent, Raystown Operations  Owner:  Mr. Steve Jacobs DFO Partnership-Mail Code CA57050403 Attn: Contracts Administration c/o Security Pacific Leasing Corporation 555 California Street, Fourth Floor San Francisco, CA 94104

3) Location of Facility by river and state.	Raystown Branch, Juniata River Huntingdon County, PA
4) Installed capacity.	21 MW
5) Average annual generation.	87,895,876 KWh (1996 – 2005)
6) Regulatory status.	FERC Licensed Project No. 2769. License (see Attachment A) issued November 10, 1982. License expires October 31, 2032.
7) Reservoir volume and surface area measured at the high water mark in an average water year.	U.S. Army Corps of Engineers Raystown Dam; Raystown Lake, 514,000 acre-feet of storage at 786.0 ft above MSL; 8,300 acres surface area.
8) Area occupied by non-reservoir facilities (e.g., dam, penstocks, powerhouse).	Raystown Dam is managed by the U.S. Army Corps of Engineers. The Raystown Hydroelectric Project (William F. Matson Generating Station) is located at the base of Raystown Dam, which encompasses approximately 150 acres. The FERC Project boundaries for this hydroelectric facility occupy approximately 11.5 acres.
9) Number of acres inundated by the Facility.	The existing U.S. Army Corps of Engineers Raystown Dam was constructed for flood control, recreation, fish, and wildlife management purposes. Construction of the dam began in October 1968 and was completed in October 1973. The flood storage elevation of Raystown Lake is 812 ft above MSL. At this elevation the surface area of the lake is 10,800 acres. The Raystown Hydroelectric Project (William F. Matson Generating Station), which was completed in 1988, inundated no land.
10) Number of acres contained in a 200-foot zone extending around entire impoundment.	The impoundment (Raystown Lake), which includes approximately 118 miles of shoreline, is managed by the U.S. Army Corps of Engineers. The number of acres contained in a 200-foot zone extending around the entire impoundment is approximately 2,500. The guide taking line for fee acquisition was all land within a line 300 feet horizontal from elevation 812 ft above MSL.
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 – Resource Agency Contact Information. Attachment C summarizes an agency meeting held at the facility on May 8, 2006. The U.S. Army Corps of Engineers and Pennsylvania Fish & Boat Commission have issued letters in support of Low Impact certification for the Facility (Attachment D).
12) Please attach a description of the Facility, its mode of operation (i.e., peaking/run of river) and a map of the Facility.	21-MW hydroelectric plant located at the base of the 225-foot high Raystown Dam in Huntingdon County, Pennsylvania. Raystown Dam is managed by the U.S. Army Corps of Engineers. The hydroelectric facility is operated in close cooperation with the U.S. Army Corps of Engineers. Constant flow discharges from the Facility are adjusted on a daily basis to minimize fluctuations downstream. See Attachment E – Description of the Facility – for additional information. A map of Raystown Lake and the hydroelectric facility is included as Attachment F and photographs are included as Attachment G.

<p><b>Questions for 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>	
<p>13) When was the dam associated with the Facility completed?</p>	
<p>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.</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?           (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 increased or added generation is not yet operational, has the increased or added</p>	

<p>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>			
<b>A. Flows</b>	<b>PASS</b>	<b>FAIL</b>	<b>Applicant Response</b>
<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 = Pass, Go to B N/A = Go to A2</p>	<p>NO = Fail</p>	<p>N/A. Facility is in compliance with Resource Agency Recommendations included in the FERC operating license issued November 11, 1982, and the Operating Agreement between the U.S. Army Corps of Engineers and Allegheny Electric Cooperative (relevant portions includes in Attachment H).</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 = Pass, go to B NO = Go to A3</p>		<p>No. Facility is in compliance with minimum flows contained in the Operating Agreement between the U.S. Army Corps of Engineers and Allegheny Electric Cooperative: 200 cfs minimum flow May – November; 480 cfs minimum flow December – April. As shown in Attachment I, these minimum flows are categorized by the Montana-Tenant method as "outstanding" to "optimum" from December through March, "excellent" to "outstanding" in April, "good" to "excellent" in October and November, and "poor" to "fair" from May through September.</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?	YES = Pass, go to B	NO = Fail	Yes. The hydroelectric facility is operated in close cooperation with the U.S. Army Corps of Engineers. As shown in Attachment D, the Corps and Pennsylvania Fish & Boat Commission have stated that flows are appropriately protective of fish, wildlife, and water quality.
<b>B. Water Quality</b>	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	NO = Fail	a) N/A. The Pennsylvania Department of Environmental Resources, Bureau of Water Quality Management, issued a Clean Water Act Section 401 water quality certification for the facility on June 24, 1980 (Attachment J). b) Yes. The facility is in compliance with the following Raystown Branch Juniata River protected water uses: water supply, recreation, aquatic life, trout stocking, and warm water fisheries. The facility is also in compliance with Article 34 of its FERC operating license, Water Temperature Monitoring Plan.

<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>No. However, approximately 6.6 miles (river mile 38.8 to 45.4) of the Raystown Branch Juniata River (State Water Plan: 11D) at the upstream end (28 miles upstream of the facility) of Raystown Lake (Assessment ID 20020111-1234-FIT) were listed as 303(d) impaired for Human Health Uses in the 2004 Pennsylvania Integrated Water Quality Monitoring and Assessment Report. The cause of impairment is Mercury. The source of the impairment is Unknown.</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><b>C. Fish Passage and Protection</b></p>	<p>PASS</p>	<p>FAIL</p>	
<p>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?</p>	<p>YES = Go to C5 N/A = Go to C2</p>	<p>NO = Fail</p>	<p>N/A.</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 (e.g., 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>Yes. American shad and American eel were once numerous in the Juniata River.</p> <p>a) Yes. In the early 1900s, four large hydroelectric dams were built on the Susquehanna River, blocking shad and eel passage. An earlier Raystown Dam, constructed about three miles upstream of the existing dam in 1904, also blocked shad and eel passage. The existing U.S. Army Corps of Engineers Raystown Dam, which inundated the earlier dam, was completed and operational in 1973. These facilities resulted in the extirpation of shad and eel from the Raystown Branch of the Juniata River long before the Raystown Hydroelectric Project (William F. Matson Generating Station), located at the base of Raystown Dam, was completed and operational in 1988.</p> <p>b) N/A. Article 15 of the FERC operating license allows for the implementation of such measures, if ordered by FERC or upon the recommendation of resource agencies. No such order or recommendations have been made.</p>
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<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.</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 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>YES = Go to C5</p>	<p>NO = Fail</p>	

5) Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and/or downstream passage of Riverine fish?	YES = Go to C6 N/A = Go to C6	NO = Fail	N/A. No mandatory fish passage prescriptions have been made.
6) Is the Facility in Compliance with Resource Agency Recommendations for Riverine, anadromous and catadromous fish entrainment protection, such as tailrace barriers?	YES = Pass, go to D N/A = Pass, go to D	NO = Fail	N/A. No such recommendations have been made.
<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 high water mark in an average water year around 50 - 100% of the impoundment, and for all of the undeveloped shoreline	YES = Pass, go to E and receive 3 extra years of certification	NO = go to D2	Yes. The U.S. Army Corps of Engineers, which manages the Raystown Lake shoreline and adjacent lands, owns and has dedicated for conservation purposes all undeveloped land within 300 feet horizontal from elevation 812 ft above MSL.
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	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	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	
<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?	YES = Go to E2 NO = Pass, go to F		Yes. Bald eagles (state endangered, federally threatened) are known to nest in the vicinity of Raystown Dam. Virginia mallow (state endangered ) is also known to occur in the vicinity of the facility.
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	Yes. A bald eagle recovery plan has been adopted. The facility is in compliance with all relevant recommendations in this plan.
3) If the Facility has received authority 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 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.	N/A.

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?	YES = Pass, go to F	NO = Fail	
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	Yes. See response to E.2.
<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 = Pass, go to G N/A = Go to F2	NO = Fail	Yes. The facility is in compliance with Article 33 of the FERC license, which requires consultation with the State Historic Preservation Office prior to the commencement of any construction or alteration.
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?	YES = Pass, go to G	NO = Fail	

<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 = Go to G3 N/A = Go to G2	NO = Fail	Yes. The facility is in compliance with Article 35 of the FERC license, which required finalizing a recreation plan in consultation with the U.S. Army Corps of Engineers and filing of as-built recreation drawings. The approved recreation plan required installation of an ADA-accessible fishing pier in the facility tailrace area. Photographs of this pier are included in Attachment G.
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	Yes. The facility described in response to G.1 is accessible without fees or charges. In addition, the U.S. Army Corps of Engineers provides a variety of day-use and overnight recreational facilities around the 118-mile reservoir shoreline, along with recreational facilities on the downstream reach. These facilities are accessible without fee or at a nominal fee.
<b>H. Facilities Recommended for Removal</b>	<b>PASS</b>	<b>FAIL</b>	
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.