

# LIHI CERTIFICATION HANDBOOK

## -- PART VII -- CERTIFICATION QUESTIONNAIRE

\*\* PLEASE SUBMIT THIS QUESTIONNAIRE IN WORD FORMAT \*\*

**NOTE: The accompanying Supporting Information Document provides additional narrative and details in all requested information areas.**

<b>BACKGROUND INFORMATION</b>	
1) Name of the Facility as used in the FERC license/exemption.	Holtwood Hydroelectric Project, FERC No. 1881
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.	<p><b>Facility Owner/Operator:</b> PPL Holtwood, LLC Two North Ninth Street Allentown, PA 18101</p> <p><b>LIHI Application Contact:</b> Dale Zeisloft, PPL Generation, (610) 774-7850 <a href="mailto:dmzeisloft@pplweb.com">dmzeisloft@pplweb.com</a></p> <p>Tim Oakes, Kleinschmidt, (717) 687-7211 <a href="mailto:Tim.Oakes@KleinschmidtUSA.com">Tim.Oakes@KleinschmidtUSA.com</a></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.	<p>a) Pennsylvania b) Susquehanna River c) Approximately River Mile (RM) 25 d) Approximately 26,794 square miles e) Conowingo (FERC No. 405) – RM 10 Muddy Run Pumped Storage (FERC No. 2355) – RM 23 Safe Harbor (FERC No. 1025) – RM 33 York Haven (FERC No. 1888) – RM 54 f) Lat: 39.827; Long: -76.333</p> <p>A map is provided in the supporting information section of this application.</p>

<p>4) Installed capacity.</p>	<p>Prior to redevelopment, the Project had an installed capacity of 107.2 MW. Additional Capacity installed by the Expansion Project is:</p> <p>Unit 11 – 01.18 MW I/S Dec 2011  Unit 13 – 01.18 MW I/S Dec 2011  Unit 18 – 40.3 MW Expected I/S September 2013  Unit 19 – 40.3 MW Expected I/S September 2013</p> <p>Following redevelopment, the installed capacity will be 195.5 MW.</p>
<p>5) Average annual generation.</p>	<p>The average annual generation for the Holtwood Project from October 2006 through September 2011 is 590,043,642 kWh.</p>
<p>6) Regulatory status.</p>	<p>The Project is licensed under FERC No. P-1881. The current license was issued in 1980. A capacity-related license amendment to add generation capacity was approved in 2009; the order was issued on October 30, 2009. The order incorporates conditions from the state Section 401 Water Quality Certificate, and the Department of the Interior’s Section 18 Fishway Prescription.</p> <p>PPL Holtwood has also entered into Settlement Agreements with multiple parties. A Settlement Agreement was filed August 3, 2009 between PPL and the Greater Baltimore Canoe Club, Stark Moon, SWW Park Alliance, Conewago Canoe Club, Susquehanna Surf Society, Topher Smith, Chris Iverson and American Whitewater regarding recreational boating. A Settlement Agreement between PPL Holtwood and Exelon Generation was also filed on August 3, 2009 and, among other things, resolved issues regarding the provisions for minimum flows.</p> <p>The current license will expire on August 31, 2030. A copy of the 2009 license order is provided in Attachment 1 to this application. PPL Holtwood is in compliance with the license.</p>

7) Reservoir volume and surface area measured at the normal maximum operating level.	The Holtwood Dam forms Lake Aldred, which has a surface area of 2,648 acres and a gross storage of 54,768 acre-ft at El. 169.75 ft, which is the elevation of the top of the flashboards.
8) Area occupied by non-reservoir facilities ( <i>e.g.</i> , dam, penstocks, powerhouse).	8.3 acres for the dam, diversion wall, skimmer wall, and powerhouses
9) Number of acres inundated by the Facility.	2,890 acres
10) Number of acres contained in a 200-foot zone extending around entire reservoir.	421 acres
11) Contacts for Resource Agencies and non-governmental organizations.	This information is contained in Attachment 2.
12) Description of the Facility, its mode of operation ( <i>i.e.</i> , peaking/run of river) and photographs, maps and diagrams.	This information is contained in the supporting information section of this application.
<p><b>Questions for “New” Facilities Only:</b></p> <p>If the Facility you are applying for is “new” (<i>i.e.</i>, 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>	
13) When was the dam associated with the Facility completed?	1910
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>The original facility was placed in commercial service in October 1911 with five units in operation. Between 1912 and 1924, five additional units were installed, raising the station output to 108 MW nameplate rating.</p> <p>The Unit 18 and Unit 19 generating units are in the final phase of construction and turnover of equipment to start-up and commissioning is underway. The new generation facilities are expected to be online in September 2013.</p>

<p>15) Did the added or increased power generation capacity require or include any new dam or other diversion structure?</p>	<p>No. The increased generation capacity required widening and deepening of the existing forebay and tailrace, but no new dams or diversion structures were necessary.</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>No. The increased capacity did not include a change in water flow that worsened conditions for fish, wildlife, or water quality. Through rerouting of Unit 1 to flow into Piney Channel and minimum flow agreements, flow changes are expected to be an enhancement for fish, wildlife, and water quality.</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>	<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>Yes, the Project has received federal and state regulatory authorization. There are no pending appeals or litigation regarding that authorization.</p>

<b>A. FLOWS</b>	<b>PASS</b>
<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>The Project is in compliance with flow conditions at the Project. PPL Holtwood developed a Minimum Stream Flow Operating Plan in consultation with the PADEP, PA Fish and Boat Commission, PA Department of Conservation and Natural Resources, Susquehanna River Basin Commission, Maryland Department of Natural Resources, U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, and FERC to comply with Article 51 of the new license. The Plan was approved by FERC on April 19, 2012.</p> <p>The plan outlines a process for PPL Holtwood to release the following flows into the Susquehanna River below Holtwood Dam: (1) a 24-hour continuous minimum flow of 800 cfs (Continuous Minimum Flows); (2) a 200 cfs continuous minimum flow in the Piney Channel and (3) a daily volumetric flow equivalent to 98.7% of the minimum continuous flow requirements of the downstream Conowingo Project No. 405, aggregated over a 24-hour period (Daily Minimum Flows). In the event that the net inflow to Lake Aldred is less than the Continuous Minimum Flows and the Daily Minimum Flows, the MSFOP Manual shall require the licensee to maintain flows in the Susquehanna River below Holtwood Dam equal to the net inflow to Lake Aldred.</p> <p>Additional narrative on flow provisions is included in the supporting information section of this application. A copy of the FERC Order approving the Minimum Stream Flow Operating Plan, which summarized the plan as well as agency consultation, is provided in Attachment 3.</p> <p>Some of the flow provisions do not take effect until after the Project is operational so compliance cannot be shown until the provisions take effect.</p> <p><i>YES = Pass, Go to B</i></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><i>N/A</i></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><i>N/A</i></p>
<p><b>B. WATER QUALITY</b></p>	<p><b>PASS</b></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 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>A Section 401 Water Quality Certificate was issued to the Holtwood project on June 15, 2009 and was integrated into the current FERC license as Appendix B. The Holtwood Project is in compliance with the conditions in the water quality certificate. A copy of the most recent 401 Water Quality Certificate is provided in Attachment 1.</p> <p>Additional information on water quality is included in the supporting information section of this application.</p> <p><i>YES = Go to B2</i></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>Neither the Facility area nor the downstream reach has been identified by the state pursuant to Clean Water Act Section 303(d) as having impaired water quality.</p> <p><i>NO = Pass</i></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><i>N/A</i></p>

C. FISH PASSAGE AND PROTECTION	PASS
<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, the Holtwood Project is in compliance with a Mandatory Fish Passage Prescription. PPL Holtwood has operated an elevator-style fish passage facility since Spring 1997. On April 16, 2008, the Department of the Interior filed a preliminary fishway prescription for American shad, alewife, blueback herring, American eel, and other designated resident riverine fish species. On September 3, 2009, Interior filed a modified fishway prescription for these same species. The prescription is incorporated into the current FERC license, and can be found in Appendix B of the current FERC license, which is included in Attachment 1 of this application.</p> <p><i>YES = Go to C5</i></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 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><i>N/A</i></p>

<p>3) If, since December 31, 1986:</p> <ul style="list-style-type: none"> <li>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),</li> <li>b) The Resource Agencies declined to issue a Mandatory Fish Passage Prescription, and</li> <li>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?</li> </ul>	<p><i>N/A</i></p>
<p>4) If C3 was not applicable:</p> <ul style="list-style-type: none"> <li>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</li> <li>b) If the Facility is unable to meet the fish passage standards in 4.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?</li> </ul>	<p><i>N/A</i></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><i>N/A</i></p> <p>The Mandatory Fish Passage Prescription addresses design populations of anadromous and catadromous fish only. However, the state 401 certificate requires operation of the Project to allow for passage of riverine fish. The Project is currently in compliance with this requirement.</p> <p><i>N/A = Go to C6</i></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, the Project is in compliance with Resource Agency recommendations regarding riverine, anadromous, and catadromous fish. The Section 18 Mandatory Fishway Prescription and the state 401 Water Quality Certificate each require fish passage measures.</p> <p>PPL filed a Fishway Operating Plan on December 15, 2011 that was developed in consultation with the PA Fish and Boat Commission, the U.S. Fish and Wildlife Service, Susquehanna River Basin Commission, MD Department of Natural Resources, and the PA Department of Environmental Protection to comply with Articles 48 and 49 of the new FERC license. FERC approved the Fishway Operating Plan on May 9, 2012.</p> <p><i>YES = Pass, go to D</i></p>
<p><b>D. WATERSHED PROTECTION</b></p>	<p><b>PASS</b></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 average annual high water line for at least 50% of the shoreline, including all of the undeveloped shoreline?</p>	<p>Yes. PPL Holtwood’s Land and Shoreline Management Plan, approved by FERC on January 15, 2013 specifically calls for maintaining an undeveloped zone of 200-ft or greater around 95% of the reservoir as a buffer for conservation purposes.</p> <p><i>YES = Pass, go to E and receive 3 extra years of certification</i></p>

<p>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?</p>	
<p>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)?</p>	
<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><b>E. THREATENED AND ENDANGERED SPECIES PROTECTION</b></p>	<p><b>PASS</b></p>
<p>1) Are threatened or endangered species listed under state or federal Endangered Species Acts present in the Facility area and/or downstream reach?</p>	<p>Yes. Bald eagle is listed as threatened in Pennsylvania. Osprey is listed as threatened in Pennsylvania. The prothonotary warbler is currently listed as an "at risk" species in Pennsylvania. The red-bellied turtle and rough green snake are both listed as state-threatened, but are not listed at the federal level. Four state-listed plant species are on Project property: scarlet ammannia, American holly, sticky goldenrod, and white doll's daisy.</p> <p><i>YES = Go to E2</i></p>
<p>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?</p>	<p>N/A. There are no formal recovery plans for the threatened and endangered species at the Project.</p> <p><i>N/A = Go to E3</i></p>

<p>3) If the Facility has received authorization 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 authorization pursuant to similar state procedures; is the Facility in Compliance with conditions pursuant to that authorization?</p>	<p>The Project has received an incidental take permit for bald eagle at the Project under the Bald and Golden Eagle Act as it relates to the ongoing construction of the new powerhouse. The Project is in compliance with conditions pursuant to that authorization. A more detailed summary of the issue is provided in the Supporting Information Document. A copy of the application and/or the permit itself can be provided upon request.</p> <p><i>YES = Go to E4</i></p>
<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>The Incidental Take Permit was issued to address the temporary effects of construction at the Holtwood Project. The Incidental Take Permit outlines procedures for the Facility to follow until the construction activity is complete. The Incidental Take Permit was not issued in response to a long-term concern.</p> <p>There has been no biological opinion issued that would be applicable to the Facility. Thus, there is no recovery plan for the threatened or endangered species under active development.</p> <p><i>YES = Pass, go to F</i></p>
<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><i>N/A</i></p>

<b>F. CULTURAL RESOURCE PROTECTION</b>	<b>PASS</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?	<p>Yes. The Holtwood Project follows a Historic Properties Management Plan that was approved by FERC on January 11, 2010. The facility has provided annual reports as outlined in the HPMP and has otherwise remained in compliance with the plan.</p> <p><i>YES = Pass, go to G</i></p>
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?	N/A
<b>G. RECREATION</b>	<b>PASS</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?	<p>Yes. The current FERC license provides for construction of additional recreation facilities, such as improved boat launches, a new tailrace fishing platform, and whitewater features. These features are being constructed/modified as part of the redevelopment project and are on schedule.</p> <p>The facility also manages other project recreation facilities, such as overlooks and recreation facilities. PPL Holtwood filed a Recreation Use Monitoring Plan on April 29, 2010, and has been implementing the plan as required by Article 59 of the current FERC license since it was approved on June 1, 2010. PPL Holtwood is in the process of developing a long-term recreational use monitoring plan which will be filed in 2013.</p> <p>PPL Holtwood has also filed a Whitewater Boating Plan in accordance with Article 60 of the current FERC license on December 15, 2011. FERC approved the plan on July 10, 2012 and PPL Holtwood is currently constructing the whitewater features required by the plan.</p> <p><i>YES = Go to G3</i></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><i>N/A</i></p>
<p>3) Does the Facility allow access to the reservoir and downstream reaches without fees or charges?</p>	<p>Yes. The only fees imposed at the Project are at PPL Holtwood -owned camping facilities. All other recreation sites, as well as all access to the reservoir, including boat ramps, fishing areas, overlooks, picnic areas, and other amenities are provided free of charge.</p> <p><i>YES = Pass, go to H</i></p>
<p><b>H. FACILITIES RECOMMENDED FOR REMOVAL</b></p>	
<p>1) Is there a Resource Agency Recommendation for removal of the dam associated with the Facility?</p>	<p>No</p> <p><i>NO = Pass, Facility is Low Impact</i></p>