

COVER SHEET

**FINAL ENVIRONMENTAL IMPACT STATEMENT FOR
AMENDMENT TO LICENSE**

HOLTWOOD HYDROELECTRIC PROJECT

Docket No. P-1881-050

Appendix A

Consent Order and Agreement Measures

FEIS

APPENDIX A
CONSENT ORDER AND AGREEMENT MEASURES

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Table A-1. Summary of meetings and plans required to be implemented in conjunction with the application for Water Quality Certification. (Source: COA, dated November 21, 2007)

Consent Order Paragraph	Description
3.a.1	By November 30, 2007, PPL Holtwood, LLC (PPL or licensee) is to provide the resource agencies a report on spillway crest control alternatives and a recommended plan for approval.
3.a.2	Final modeling reports for the fish passage facilities must be provided to the resource agencies by November 30, 2007.
3.a.3	Final design plans and schedule for all structures and excavations must be provided to agencies for approval by January 31, 2008.
3.a.4	PPL is to meet with agencies by January 31, 2008, to discuss operation of fish lifts for resident species from September 1 to October 15.
3.a.5	By January 31, 2008, PPL is to provide agencies a Minimum Stream Flow Operations Procedures (MSFOP) manual to agencies for approval. This would provide detailed information on how the project would provide minimum flows, turbine sequencing, flow split between powerhouses, etc.
3.a.6, 7, 8, 9	These paragraphs require that PPL meet with agencies by January 31, 2008, to discuss a plan and schedule for passing minimum flows.
3.a.10, 11, 12	These paragraphs require that PPL provide, by February 28, 2008, a plan and schedule for implementing and monitoring minimum flows at the project, for agency approval.
3.a.13	By March 31, 2008, PPL is to provide agencies a plan, for approval, for sequencing construction to prevent impacts to anadromous fish runs.
3.a.14	By March 31, 2008, PPL is to provide agencies a fishway operating plan (FOP), for approval, that would provide details of how fish facilities would be operated and monitored.
3.a.15 and 16	By March 31, 2008, PPL is to meet with agencies to discuss a plan and schedule for determining effectiveness of upstream shad passage, and a discrete survival study for shad downstream passage.

Consent Order Paragraph	Description
3.a.17	By June 30, 2008, PPL is to provide the agencies for approval, a plan to monitor upstream effectiveness of shad passage using passive integrated transponder (PIT) tags, including installation of PIT tag readers at Conowingo dam, if possible.
3.a.18	By June 30, 2008, PPL is to provide the agencies for approval, a plan to monitor the downstream passage survival of shad.
3.b	PPL to construct a new boat launch at Pequea Creek Access Site to replace one lost as a result of Pennsylvania Department of Transportation construction. By January 31, 2008, PPL is to meet with the agencies regarding plans for the launch, and within 30 days of the meeting provide plans for agency approval.
3.c	Allows PPL to withdraw its application for Water Quality Certification (WQC) should it withdraw the license amendment application.
3.d	PPL shall include the provisions of appendix A of the Consent Order and Agreement (COA) (proposed WQC conditions) in the final license amendment application.
3.e	PPL will not challenge the final WQC conditions if they are substantially the same as appendix A to the COA.
3.f	PPL may challenge the final WQC conditions if they are substantially different from appendix A to the COA.
3.g	PPL may challenge any final WQC conditions that are not set forth in appendix A to the COA.
3.h	Should any agency seek to require Safe Harbor to provide a minimum flow from the upstream Safe Harbor Project, PPL shall not participate in Safe Harbor's decision, nor shall oppose the effort to provide a minimum flow.

Table A-2. Summary of the proposed Water Quality Certification conditions in appendix A of the Consent Order and Agreement.³⁶ (Source: COA, dated November 21, 2007, as modified by staff)

Condition Number	Description
I. A, B, C	Defines final agency action and PPL’s right to challenge; operational modifications of the adaptive management requirements of the permit; and structural modifications.
II. A. 1 ^a	Requires the licensee to prepare and implement a FOP related to all operations and maintenance of each fishway, including daily and seasonal operations, attraction flows, powerhouse unit sequencing and flow split between powerhouses, and fish counting/monitoring programs for anadromous, catadromous, and riverine fishes. By December 31 of each year, the licensee shall prepare an annual operations report, describing any deviations from the FOP and measures taken to correct any deviations, and shall meet with the DEP ^b and agencies by January 31 to discuss any needed modifications to the FOP. Any fish passage enhancements or new facilities implemented after the license amendment shall be included in the FOP, and the modified FOP for these facilities shall be submitted to the DEP and agencies for approval 60 days prior to their initial operation.
II. A. 2 ^a	Requires the licensee to implement the enhancements approved by the DEP concurrent with construction of the new hydroelectric generating facilities. This includes fish lift improvements related to modifying the attraction water supply, rebuilding the skimmer wall, reconstruction of fish lift entrance C, and relocation of the tailrace crowder drive; redirection of the Unit 1 discharge through the diversion wall and into Piney Channel; excavations within the project boundary to reduce velocity barriers to fish migration in the tailrace, below the tailrace, and in Piney Channel; placement of eel monitoring ramps and traps in the tailrace and spillway; and implementing a spill control system approved by the U.S. Fish and Wildlife Service. <i>These enhancements must be operational no later than the beginning of operation of the amended project.</i>

³⁶ Where water quality conditions are similar to Interior’s preliminary fishway prescription, but in some cases expand on Interior’s prescription, these additional measures are shown in italics throughout this table.

Condition Number	Description
II. B. 1 ^a	<p>Requires the licensee to implement a monitoring plan for upstream shad passage approved by the DEP that would include annual fish counts and PIT tag monitoring. The licensee would monitor the effectiveness of upstream passage, including daily updates to the resource agencies, <i>beginning the first year of operation of the amended project</i>, for 3 years, with an annual monitoring report by December 31 of each year. Following completion of this “Tier I” study, <i>unless the results indicate that at least 75 percent of the shad that pass the downstream Conowingo Project pass through the amended Holtwood Project, and that 50 percent of the shad pass the Holtwood Project within 5 days of passage at Conowingo (annual average over the 3 years)(Tier I requirements)</i>, the licensee would consult with the DEP and agencies to develop a plan for a radio telemetry study to assess shad behavior below the project and to determine the percentage of shad that enter Holtwood Project waters and then successfully pass through the Holtwood fish passage facilities. This “Tier II” study would continue for a minimum of 4 years, concurrent with fish counts and PIT tag monitoring, to determine the need for any additional or modified fish passage facilities at the project. Daily updates would be provided to the DEP and resource agencies, and an annual report would be required on the radio telemetry study by December 31 of each year. <i>If at the end of each year of the Tier II study less than 85 percent of the shad entering Holtwood Project waters successfully pass upstream through the project, the licensee shall prepare a plan for operational changes to enhance passage in the following year, if studies indicate that such changes could enhance passage. If at the end of the Tier II monitoring period the fish passage efficiency remains at less than 85 percent, the licensee shall prepare a plan for structural changes to enhance passage, if studies indicate that such changes could enhance passage.</i></p>

Condition Number	Description
II. B. 2 ^a	<p>Requires the licensee to conduct a discrete survival study for shad during downstream passage through the project, once the new powerhouse begins operation. The report on the study would be provided to DEP and agencies within 90 days of completion of the study. <i>If the study results indicate that project operations can achieve a minimum survival of 95 percent for juvenile shad and 80 percent for adult shad, those operational measures shall be incorporated into the FOP. If the study results indicate that project operations cannot achieve a minimum survival of 95 percent for juvenile shad and 80 percent for adult shad, the licensee shall consult with the DEP and agencies and propose operational or structural modifications that would be implemented in the year following the year that lower survival is documented. Any modifications shall be incorporated into the FOP by submitting plans to the DEP and agencies for approval 60 days prior to their initial operation.</i></p>

Condition Number	Description
II. C. 1 ^a	<ul style="list-style-type: none"> a. The trigger date for initiation of upstream eel passage measures at Holtwood shall be: when eel passage becomes operational at the downstream Conowingo Project, or when eel stocking into Conowingo reservoir begins as part of an agency-approved plan, or when the DEP and other agencies determine that available data indicate that sufficient numbers of eels are available below Holtwood to require passage. b. Within 1 month of the trigger date, the licensee shall meet with DEP and resource agencies to develop a plan and schedule for a siting study for permanent eel fishway(s), with a final plan to be submitted for DEP and agency approval within 3 months of the meeting. The siting study shall be implemented on an annual basis until adequate information is available to make a siting decision. c. Once adequate information is available to make a siting decision, the licensee shall meet with DEP and resource agencies to develop a plan and schedule for constructing permanent eel fishways. Within 6 months of that meeting, the licensee shall submit design plans and a schedule for resource agency approval. d. Within 3 months of the approval of the design plans, the licensee shall submit a plan for monitoring the effectiveness of upstream eel passage to the agencies for approval. <i>PPL shall implement the plan as approved by DEP.</i> e. Once the eel passage facilities are operational, the licensee shall implement effectiveness studies via PIT tagging or other approved methods, with an annual report provided to the agencies by December 31 of each year.

Condition Number	Description
II. C. 2 ^a	<p>a. The trigger date for initiation of downstream eel passage measures at Holtwood shall be 3 years after eel passage becomes operational at the amended Holtwood Project, or 3 years after eel stocking into Lake Aldred begins as part of an agency-approved plan, or when DEP determines that available data indicate that sufficient numbers of eels are available upstream of Holtwood to require downstream passage.</p> <p>b. <i>Within 6 months of the trigger date</i>, licensee shall submit a study plan <i>for a discrete survival study</i> to determine the effectiveness of downstream eel passage at the project to the resource agencies for approval. <i>The plan shall include balloon tag studies or other methods approved by DEP and the agencies.</i> The licensee shall implement the approved study plan and shall provide a report on the study within 90 days of its completion.</p> <p>c. <i>If the study results indicate that project operations can achieve a minimum survival of 85 percent for downstream-migrating eels, those operational measures shall be incorporated into the FOP. If the study results indicate that project operations cannot achieve a minimum survival of 85 percent for downstream-migrating eels, the licensee shall consult with the DEP and agencies and propose operational or structural modifications that would be implemented in the year following the year that lower survival is documented. Any modifications shall be incorporated into the FOP by submitting plans to the DEP and agencies for approval 60 days prior to their initial operation.</i></p> <p>d. <i>For structural modifications, the licensee shall prepare a plan for measuring the effectiveness of the modifications, and submit to DEP and agencies for approval 60 days prior to their initial operation.</i></p>

Condition Number	Description
II. D	<p>During the first 5 years of operation of the amended project, the licensee shall operate the fish passage system for the passage of resident fish species from April 1 to June 30. All resident fish shall be identified and counted, with daily reports made available to the agencies, and an annual report by December 31 of each year of operation. At the FOP meeting prior to the end of the 5-year period, the licensee and agencies shall discuss whether any modifications to the fish passage system is needed to accommodate resident fish.</p>
III. A	<p>Requires the licensee to prepare and implement a MSFOP^c for all operations and maintenance related to providing minimum streamflows, including daily and seasonal operations, powerhouse unit sequencing and flow split between powerhouses and tailrace/Piney Channel, procedures for measuring and reporting minimum flows, procedures for determining net inflow to Lake Aldred and flows to the tailrace, Piney Channel, and the spillway, as well as emergency procedures. PPL shall implement the MSFOP as approved by DEP, and shall provide the approved MSFOP to the agencies. By December 31 of each year, the licensee shall prepare an annual MSFOP report, describing any deviations from the MSFOP and measures taken to correct any deviations, and shall meet with the agencies by January 31 to discuss any needed modifications to the MSFOP. Any required modifications to the MSFOP shall be implemented within 30 days of the request for the modification consistent with the approval of the DEP. PPL may request a waiver of the minimum streamflow requirements if necessary for the construction of the new powerhouse or fish passage facilities, and may deviate from the minimum streamflow requirements of the certification in the event of an emergency, followed by a notification to DEP within 24 hours and a report on the emergency within 15 days. DEP may require amendments to the MSFOP to maintain and protect existing and designated uses, and implement water quality standards, with the amendments to be reviewed and approved by the agencies and implemented by PPL consistent with DEP approval.</p>

Condition Number	Description
III. B	<p>Upon Commission approval of the license amendment, PPL shall operate the amended project to release a minimum streamflow (including leakage) equal to, on a daily volumetric basis, 98.7 percent of the minimum flow required by FERC to be released at the downstream Conowingo Project. If inflow to Lake Aldred is less than the required minimum streamflow, the amended project shall release a minimum flow equal to the inflow. PPL may request a waiver of this minimum flow requirement if necessary for the construction of the new powerhouse or fish passage facilities.</p>
III. C	<p>PPL shall implement a plan and schedule, approved by DEP, for providing minimum streamflows in the spillway area that would maintain and protect existing and designated uses and implement water quality standards. PPL shall implement a minimum flow monitoring plan for the spillway, and shall annually report the monitoring results by December 31 of each year, as part of the MSFOP annual report. After 3 years of operation, if monitoring indicates that existing or designated uses and water quality standards are not being maintained, DEP may require PPL to propose a plan and schedule to modify minimum flow releases, if operational changes would help to maintain and protect existing and designated uses and implement water quality standards. The plan and schedule shall be submitted to the resource agencies within 6 months of the notification that the plan is needed. PPL shall implement the plan as approved by DEP. Three years after the implementation of operational measures, if monitoring results indicate that existing or designated uses and water quality standards are still not being maintained, DEP may require PPL to propose a plan and schedule for additional modifications to minimum flows in the spillway area using operational or structural changes. The plan and schedule shall be submitted to the resource agencies within 6 months of the notification that the plan is needed. PPL shall implement the plan as approved by the DEP, and if structural changes are made, the plan must include an evaluation of the effectiveness of those structural changes.</p>

Condition Number	Description
III. D	<p>PPL shall implement a plan and schedule, approved by DEP, for providing minimum streamflows in the Piney Channel and the tailrace from Lake Aldred that would maintain and protect existing and designated uses and implement water quality standards. PPL shall implement a minimum flow monitoring plan for the Piney Channel and the tailrace, and shall annually report the monitoring results by December 31 of each year, as part of the MSFOP annual report. After 3 years of operation, if monitoring indicates that existing or designated uses and water quality standards are not being maintained in the Piney Channel and the tailrace, DEP may require PPL to propose a plan and schedule to modify minimum flow releases, if operational changes would help to maintain and protect existing and designated uses and implement water quality standards. The plan and schedule shall be submitted to the resource agencies within 6 months of the notification that the plan is needed. PPL shall implement the plan as approved by DEP. Three years after the implementation of operational measures, if monitoring results indicate that existing or designated uses and water quality standards are still not being maintained in the Piney Channel and the tailrace, DEP may require PPL to propose a plan and schedule for additional modifications to minimum flows in the Piney Channel and the tailrace using operational or structural changes. The plan and schedule shall be submitted to the resource agencies within 6 months of the notification that the plan is needed. PPL shall implement the plan as approved by the DEP, and if structural changes are made, the plan must include an evaluation of the effectiveness of those structural changes.</p>
^a	<p>These water quality conditions are similar to Interior’s preliminary fishway prescription, but in some cases expand on Interior’s prescription. These additional measures are shown in <i>italics</i>.</p>
^b	<p>All references to DEP mean Pennsylvania DEP.</p>
^c	<p>For all conditions where PPL is required to prepare a plan, the conditions also include a provision that in the event PPL fails to provide a plan as required, Pennsylvania DEP would prepare the plan in consultation with the other resource agencies and require PPL to implement it.</p>