

VIA EMAIL

December 23, 2024

Sheila Eyer US Fish and Wildlife Service Mid-Atlantic Fish and Wildlife Conservation Office 177 Admiral Cochrane Drive Annapolis, MD 21401	Scott Williamson PA Dept. of Environmental Protection Waterways & Wetlands Program 909 Elmerton Avenue Harrisburg, PA 17110-8200
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RE: BIF III HOLTWOOD LLC – 2024 FISH PASSAGE REPORT

Dear PADEP and USFWS:

Pursuant to Articles 47 and 53 of its License, the Prescription for Fishways, and Conditions VI.A.2 and III.B.1 of the Water Quality Certificate (WQC) for the Holtwood Hydroelectric Station, BIF III Holtwood LLC (Brookfield), licensee of the Project, hereby submits the 2024 Holtwood Fishways Operations Report.

Should any additional information be required, please contact me by phone at 717-284-6218, by e-mail at Adam.Slowik@brookfieldrenewable.com, or by mail at Brookfield Renewable, 482 Old Holtwood Rd., Holtwood, PA 17532.

Sincerely,



Adam C. Slowik
Compliance Specialist

Enclosure – Holtwood 2024 Fishways Operations Report

cc: Luke Anderson (Brookfield)
Cale Benard (Brookfield)
Dustin Droege (Brookfield)
Steven Giffin (Brookfield)
Katie Lester (Brookfield)
Walter Migliori (Brookfield)
Jon Rhoads (Brookfield)
Holtwood FPTAC Resource Agencies

Holtwood 2024 Fishways Operations Report

History:

The Holtwood Project was built in 1910 and is located at River Mile 24 on the Susquehanna River. It is the second upstream hydroelectric facility on the river, with Conowingo Dam being located below and Safe Harbor Dam and York Haven Dam being located above.

In 1993, the Susquehanna River Fish Passage Settlement Agreement was signed, requiring the licensee of the Holtwood Project to provide migratory fish passage at their facility. The licensee began construction in 1995 and the fishway was placed into operation in April of 1997. The Holtwood fish lift has operated each spring since 1997, as well as fall of 2014, 2015, 2017, 2018 and 2019. 2024 marks the 28th year of operation.

Fishway Design:

The Holtwood fish lift design incorporates numerous criteria established by the USFWS and state resource agencies. Physical design parameters for the fishway are given in the 1998 Fishway Report (Normandeau Associates, Inc. 1998. Summary of the operation at the Holtwood Fish Passage Facility in 1997. Report prepared for PPL, Inc., Allentown, PA.) The fishway is designed to pass a population of 2.7 million American Shad and 10 million river herring.

There are 2 lifts on the fishway, tailrace and spillway (see figure in Normandeau Associates, Inc. 1998). The tailrace lift has two entrances (gates A and B) and the spillway lift has one entrance (gate C). Each lift contains a mechanically operated crowder, picket screen(s), hopper, and hopper trough gate. Fish captured in the lifts are sluiced into one trough, which then leads into Lake Aldred. Attraction flows to the two fish lifts at Holtwood Dam are supplied via an attraction water piping system leading to five separate flow diffusers, with the flow distribution controlled by eight motor operated valves (MOVs). Generally, flows are introduced upstream of the crowder in each lift and upstream of the three entrance gates. Entrance gates at the three lift entrances control the depth of flow within the lift channels. Fish that enter the tailrace and/or spillway entrances are attracted by water flow into the mechanically operated crowder chambers. Once inside, fish are crowded into the hoppers, lifted, and then sluiced into the trough. Fish swim upstream through the trough, past a counting window, and into the forebay through a 14 ft wide fish lift exit gate.

For more information on the design and operation of the lift, please reference the Fishways Operations Plan. This plan includes operating protocols and guidelines that are flexible and utilize experience gained during previous years of fish lift operation.

Regulatory Dates:

Resident spring fish passage season at the Holtwood fish lift is from April 1 through June 30. Migratory fish passage season timing is based on the passage of fish at the Conowingo Dam, located downstream. Resident fall fish passage season is from September 1 to October 15.

2024 Fish Passage:

PADEP and US Fish and Wildlife Service (USFWS) submitted written requests to Brookfield on December 21 and 22, 2023 asking that the Holtwood fish lift not be operated in 2024 based on the recommendation from multiple resource agencies due to the potential spread of invasive species. USFWS and PADEP also noted that the Tier II radio telemetry study would then be deferred. By letter dated January 5, 2024, Brookfield submitted a request to FERC to suspend fish passage and the Tier II radio telemetry study for the 2024 fish passage season at the Holtwood fish lifts based on the agencies request.

Upstream Shad Passage – Tier II Radio Telemetry:

2024 would have been year 3 of the study, but it was deferred due to the request to suspend fish passage.

Maintenance/Upgrades:

- Basic PM maintenance work – electrical checks, mechanical greasing, I&C calibrations
- Tested and adjusted hoist limits
- The C gate was investigated and the issue preventing the gate from opening was identified. Brookfield is continuing to work on this gate due to the request to remove the cross braces.

Invasive Species:

In 2020, PADEP recommended that Brookfield evaluate the ability and/or mechanisms to manage invasive species in preparation for the 2022 fish passage season. A site visit to Conowingo Dam was conducted to see how the East Fish Lift (EFL), the West Fish Lift (WFL), and trap and transport operate. The Holtwood fish lift is engineered differently than the Conowingo EFL, WFL, and is designed as a true passage facility with no current method or means of sorting. With no safe or viable means to facilitate invasive removal or regulatory requirement, Brookfield has not pursued this topic further.

During a call with resource agencies on September 20, 2022, PADEP recommended that Brookfield continue to evaluate ways to manage invasive species in preparation for when traditional fish passage season resumes.

On September 27, 2023, agencies and hydropower facilities attending a call to discuss invasives. The meeting detailed the beginning of a collaborative effort involving resource agencies and hydro dam owners working together in effort to reduce the spread, movement, and population of aquatic invasive species in the Susquehanna River basin. Discussions are ongoing.

On December 5, 2023, during the annual Susquehanna River Anadromous Fish Restoration Cooperative (SRAFRC) meeting, the group discussed the draft draft Priority Invasive Fish Species Action Plan outline.

On April 4, 2024, a draft Priority Invasive Fish Species Action Plan for the Susquehanna River Basin was received for review. This plan is still being reviewed collectively by the hydroelectric facility owners and agencies. , and written comments were provided by several entities, including Brookfield. SRAFRC is in the process of forming Steering and Technical Committees to begin the process of facilitating implementation of the plan.

CFD Model Update:

Brookfield contracted with Gomez and Sullivan Engineers, to complete a CFD model of the Holtwood fish lift, as well as develop a new operating matrix, which was intended to be field tested for verification in 2021. Since the request to stop operation of the fish lifts, the new operating matrix has not yet been verified. Brookfield intended to verify the attraction flows coming from the entrance gates in 2024, but have been unable to due to the difficulty in repairing C gate. Once the operating matrix is verified and updated, the Fishways Operating Plan will be updated. Brookfield considers this an operational change, therefore pursuant to the approved study plan, Tier II radio telemetry data prior to the next operating season will not be included in our catch average moving forward.