United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE

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November 01, 2024

Debbie-Anne A. Reese, Acting Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Re: Comments on Proposed Study Plan for the Brunswick Hydroelectric Project P-2284-052

Dear Acting Secretary Reese:

This letter provides the U.S. Fish and Wildlife Service's (Service) comments on Brookfield White Pine Hydro, LLC's (Brookfield) Proposed Study Plan (PSP) for the relicensing of the Brunswick Hydroelectric Project (Project) (P-2284-052). The Project is located on the Androscoggin River in the towns of Brunswick and Topsham, Cumberland and Sagadahoc Counties, Maine. Brookfield filed the PSP with the Federal Energy Regulatory Commission (FERC) on August 2, 2024,[1] and held a proposed study plan meeting on August 28, 2024. At the request of the Service and other resource agencies, Brookfield held an additional meeting to discuss the PSP on October 9, 2024. We are providing comments pursuant to 18 CFR 5.12.

On June 20, 2024, the Service submitted eight study requests[2] consistent with the content required in FERC's regulations at 18 CFR 5.9(b). Brookfield adopted, in whole or in part, five of the Service's requests. In the enclosed attachment, we respond to Brookfield's reasons for not adopting certain study requests and provide comments on the studies Brookfield does propose.

[1] Accession Number 20240802-5123
[2] Accession Number 20240620-5294

We appreciate this opportunity to comment and look forward to working with FERC, Brookfield, and other interested parties in the development of the license application. If you have any questions about this letter or our attached study requests, please contact Kyle Olcott by telephone at 207-536-9541 or via email at dudley_olcott@fws.gov.

Sincerely,

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Date: 2024.11.01 09:38:49 -04'00'

Amanda S. Cross, Ph.D.
Field Supervisor
Maine Ecological Services Complex

Attachment: Comments on PSP

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Attachment – Comments on Proposed Study Plan

PROPOSED STUDY PLAN SECTION 4 – REQUESTED STUDIES NOT ADOPTED OR ADPOTED IN PART

Downstream American Eel Passage Assessment (Study Request 1) and Downstream Alosine Passage Assessment (Study Request 2)

Summary of Proposed Study Plan

As discussed in Sections 4.2.1 and 4.2.2 of the Proposed Study Plan (PSP), Brookfield White Pine Hydro, LLC (Brookfield) did not adopt either of the Service's requested studies of the Project's effects on downstream passage for American eel or alosines (Study Requests 1 and 2). Brookfield provides the same rationale for rejecting both studies, stating on page 9 of the PSP that it, "does not see the benefit in conducting extensive and costly studies on a potentially outdated downstream passage system that may end up being dramatically changed as a result of this licensing proceeding." In the Pre-Application Document (PAD),[1] Brookfield proposes to operate the Project during the term of a new license, as currently operated, in a run-of-river mode and proposes no new or upgraded facilities, structural changes, operational changes, or environmental measures.

Service Response

As noted above, to date, Brookfield has not proposed any protection, mitigation, or enhancement measures at the Project. Although the PSP characterizes the existing downstream passage facilities as "potentially outdated" and appears to contemplate the need for major upgrades to downstream passage facilities, there is no information in the record that provides any proposal for protection, mitigation, or enhancement measures to address the Project's effects on downstream passage for American eel or alosines. The Service and FERC must evaluate the Project as proposed, and the information gathered from the Service's Study Request 1 and Study Request 2 is necessary for any assessment of behavior, passage success, immediate and latent survival, and internal and external injury of target species as they encounter the Project during downstream migrations through all downstream passage routes. Any environmental analysis of the Project relicensing would be incomplete without this information. Therefore, we ask that Brookfield either 1) provide a specific, detailed proposal for protection, mitigation, and enhancement measures to address the Project's effects on downstream passage of American eel and alosines, or 2) adopt the Service's Study Request 1 and Study Request 2 in the Revised Study Plan (RSP).

[1] Accession Number 20240221-5163

Invasive Plant Survey (Study Request 8)

Summary of Proposed Study Plan

In Section 4.3.5 of the PSP, Brookfield does not adopt the Service's requested *Invasive Plant Survey* (Study Request 8), asserting that we did not address 18 CFR 5.9(b)(5). The PSP states on page 11 that, "the presence of invasive species change [sic] is a likely result of factors unrelated to the operation of the Project."

Service Response

The Service's Study Request 8 would provide information that describes the current baseline condition of invasive plant species. This information is necessary to assess any continuing Project effects and potential measures to address those effects. Reservoirs and impoundments alter natural habitats and are known to provide conducive conditions for the spread and establishment of invasive aquatic plant species. The Project's land management and maintenance activities and continued operation of the Project's reservoir could provide suitable conditions for invasive species to establish and expand during the next license term. Studies to establish current baseline conditions at hydropower projects during relicensing are common and supported in the Commission's guidance *A Guide to Understanding and Applying the Integrated Licensing Process Study Criteria*,[2] and measures to address invasive species are often included as license conditions. Brookfield currently proposes no measures to address invasive plant species. Therefore, the Service asks that Brookfield include our requested *Invasive Plant Survey* in the RSP.

[2] *See* https://ferc.gov/sites/default/files/2020-04/AGuidetoUnderstandingandApplyingtheIntegratedLicensingProcessStudyCriteria.pdf (Accessed: October 28, 2024).

PROPOSED STUDY PLAN SECTION 5 – PROPOSED STUDIES

Computational Fluid Dynamics Modeling – Upstream and Downstream Passage Study

Summary of Proposed Study Plan

In Section 5.2.1 of the PSP, Brookfield proposes to conduct three-dimensional Computational Fluid Dynamics (CFD) modeling in the vicinity of the Project forebay, downstream fishway entrance, and Project tailrace. The modeling results will be used to evaluate potential modifications to the upstream and downstream fish passage systems at the Project.

Service Response

At the PSP follow-up meeting, resource agency staff suggested that Brookfield extend the area of the CFD modeling to include the area upstream of the dam up to the island located in the Androscoggin River and to conduct 2D modeling in the bypassed reach below the project spillway. Brookfield staff agreed to these proposed modifications, and the RSP should reflect this.

Visual Surveys of Upstream American Eel Movements

Summary of Proposed Study Plan

In Section 5.2.3 of the PSP, Brookfield proposes to conduct nighttime visual surveys to investigate upstream migration movements of American eel at the Project. Brookfield proposes to conduct the surveys from "safely accessible locations along existing project structures" which include: 1) the entrance and lower section of the existing upstream fishway, 2) the area overlooking the ogee overflow spillway adjacent to the powerhouse, and 3) the deck structure on the Topsham side of the river overlooking the Tainter gate structures.

Service Response

During the PSP meeting, Service and other resource agency staff expressed concerns with the ability of observers to obtain useful information from the proposed vantage points because these vantage points are distant from the areas where eel would congregate. In the PSP, Brookfield asserts that the choice of vantage points and overall study approach is due to safety considerations related to sudden water level fluctuations resulting from the operations of upstream hydropower projects.

We recommend that Brookfield investigate the feasibility of lowering the Project headpond to reduce safety risks associated with sudden water level fluctuations due to inflows into the project. If feasible, this approach could allow staff to safely place temporary eel ramps and traps in various locations below the Project dam. If this approach is not feasible, Brookfield should investigate other alternative approaches that would provide information necessary to evaluate the Project's effects on upstream eel migration and develop any protection, mitigation, and enhancement measures. As proposed, the proposed study methods consisting solely of visual observations from distant vantage points are unlikely to yield adequate data that could inform FERC's environmental analysis of the effects of the Project on upstream American eel migration.

Diadromous Fish Behavior, Movement, and Project Interaction Study

Summary of Proposed Study Plan

Phased Approach and Timing

Brookfield adopted the Service's requested study, proposing to conduct the study in two phases over two study seasons. The first phase would determine whether the requested Juvenile Salmon Acoustic Telemetry System (JSATS) technology is appropriate for the hydro-morphological conditions in the study area. The second phase would utilize JSATS to assess the distribution and movement of alosines and sea lamprey in the tailrace and downstream river reach, assess alosine and sea lamprey movement near the existing fishway entrance, and determine the extent of fish behavioral modification due to Project-induced passage delay.

Sample Size

The Service's study request specifies that Brookfield should first run power analyses to determine the number of fish they would need to tag to determine passage differences between all release cohorts through the project (i.e., attraction, within fishway, and overall passage for each cohort). In the PSP, Brookfield disputes the need to obtain a statistically significant sample, and instead proposes to consult with the resource agencies to determine an appropriate sample size, estimating a sample of 200 adult river herring, 200 adult American shad, and 100 sea lamprey for the purposes of cost estimation.

Sea Lamprey

The Service requested an *Upstream Sea Lamprey Passage Assessment* (Study Request 4). Brookfield proposes to include sea lamprey in this study, rather than conduct a separate telemetry study of upstream sea lamprey passage.

Service Response

Phased Approach and Timing

The Service appreciates Brookfield's adoption of our requested study. As discussed during the PSP meeting and follow-up meeting, the Service and other resource agencies are concerned that the proposed phased approach would result in a delay that would potentially require other proposed studies (CFD study, upstream alternatives study, etc.) to be re-done. To avoid this delay and potential duplication of efforts, Service and other resource agency staff suggested that Brookfield conduct both phases in a single year. As noted in the PSP follow-up meeting, Service staff can assist with this effort by providing our input on phase 1 results as quickly as possible, including being on site while the study is conducted, if necessary.

Sample Size

The Service disagrees with Brookfield's assertion that a statistically significant sample of fish is unnecessary. Without an adequate sample, the study results may not achieve the goal of understanding fish movement and behavior in the study area. Brookfield should calculate the appropriate sample size using the formula in Molina-Moctezuma and Zydlewski, 2020. This has been applied at other hydro projects in Maine, and the Service has previously recommended this formula for determining the sample size for a similar JSATS study at the Lawrence Hydroelectric Project (P-2800) on the Merrimack River in Massachusetts.

Sea Lamprey

The Service agrees with Brookfield's proposal to include sea lamprey in this study. However, if this study does not progress to phase 2, then Brookfield will need to propose an alternate telemetry study for sea lamprey, as requested in our Study Request 4.

References

Molina-Moctezuma, A., & Zydlewski, J. (2020). An interactive decision-making tool for evaluating biological and statistical standards of migrating fish survival past hydroelectric dams. River Research and Applications, 36(7), 1024-1032.