

UNITED STATES OF AMERICA 117 FERC ¶62,131
FEDERAL ENERGY REGULATORY COMMISSION

Benton Falls Associates

Project No. 5073-078

ORDER APPROVING UPSTREAM AND DOWNSTREAM EEL PASSAGE
OPERATION PLAN AND EFFECTIVENESS STUDY

(Issued November 07, 2006)

On August 30, 2006, Benton Falls Associates (licensee) filed an Upstream and Downstream Eel Passage Facility Operations and Effectiveness Study Plan for the Benton Falls Hydroelectric Project (FERC No. 5073) pursuant to ordering paragraph (D) of the Order Approving Settlement, Transferring License, and Amending Fish Passage Requirements.¹ The Benton Falls Project is located in the town of Benton, on the Sebasticook River, a tributary of the Kennebec River, in Somerset and Waldo Counties, Maine.

BACKGROUND

The Order Approving Settlement, Transferring License and Amending Fish Passage Requirements approved an agreement developed between seven hydroelectric project owners, state and federal fish and wild life resource agencies, and several non-governmental organizations regarding the disposition of several hydropower projects in Maine. The agreement is called the Kennebec Hydro Developers Group (KHDG) Settlement Agreement.

The KHDG Agreement provides, in part, for a research project to determine permanent upstream and downstream eel passage facilities. Based on the results of the studies, the licensee, in consultation with the resource agencies, and after Commission approval, is required to construct permanent upstream and downstream eel passage facilities at the Benton Falls Project.

THE LICENSEE'S PLANS

I. Upstream Eel Passage

During the summer of 2001 the licensee installed an upstream eel passage ramp at the Benton Falls Project as part of the research project. The licensee's current plan

¹ 84 FERC ¶ 61,227 (issued September 16, 1998).

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describes the components of the permanent eel passage facility, the specific operational procedures for start-up, daily operation and shut-down of the facility.

A. Operation

The licensee stated that the ramp is sited and operated to pass juvenile eels. The licensee stated that the eel ramp is maintained and operated in consultation with the Maine Department of Marine Resources (DMR). The licensee proposed to have the ramp ready for operation by June 1 each year and operated until September 15 or a date mutually agreed upon with the DMR. The licensee added that the operational plans and schedule for the eel ramp will be reviewed annually and amended, if necessary, to address any problems identified in the previous year.

B. Effectiveness Study

The licensee provided a summary of upstream eel passage data for the Ft. Halifax and Benton Falls Projects as referenced in the 2005 Kennebec River Anadromous Fish Restoration Annual Progress Report prepared by the DMR and Maine Atlantic Salmon Commission (ASC). The data showed a maximum of 231,859 eels passed the Benton Falls Project in 2001 and a minimum 469 eels passed in 2005. The licensee added problems with the catch box lead to less than anticipated catch data for 2005. Nevertheless, the licensee stated that based on five years of monitoring data, the upstream eel ramp provides effective passage of migrating eels and therefore, the licensee does not propose further effectiveness testing. However, the licensee added, the DMR has indicated it would to continue monitoring upstream eel passage.

II. Downstream Eel Passage

The licensee stated that the downstream eel passage facility consists of an aluminum grate screen that overlay the trash racks of the large generating unit at the project. The licensee added that the upper seven-foot section of the intake rack has closed-spaced racks to assist in downstream passage. The licensee stated that its eel protection screen is designed with one-inch clear spacing to overlay that portion of the existing rack which has three-inch spaced bars, in the lower 30 feet of the intake, in order to prevent downstream migrating eels from entering the turbine area.

A. Operation

The licensee proposed to install the eel screen by September 1 of each year and operate the facility with the screen in place until the earlier of November 30 or a date

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mutually agreed upon with the DMR. The licensee stated it would contact the DMR if it has any problems during the annual start-up operations. The licensee added that the screen would be in place during the nighttime hours and likely during the daytime hours as well, although the licensee proposed to retain the option to lift the screen during the daytime hours. The licensee stated that the screen would be cleaned as needed using the plant's hydraulic trash rake.

The licensee proposed not to use the small generating unit no. 2 during nighttime hours unless protection measures are installed or it is determined, in consultation with DMR, that eel protection is not warranted (i.e. seasonal or daily eel migration has not yet started or has been deemed to have concluded). The licensee stated that it would immediately notify the DMR of any observed eel mortality at the project to determine appropriate actions. The licensee added that it reserves the right to modify the operation schedule, after consultation with the DMR, based on actual experience gained in eel screen overlay operation and observations of eel migratory patterns. The licensee proposed to review the schedule and operational plan annually and amend it if necessary to address any problems identified in the previous year.

B. Downstream Passage Effectiveness Study

The licensee stated in September 2005, the DMR installed and operated a trap in the west dropbox of the anadromous downstream passage facility. The licensee added that based on eel research, once migrating eels encounter a screen, they seek alternate passage routes which are provided via the downstream fish passage facilities at the intake. The licensee stated that the trap was successful in capturing downstream migrating eels. The licensee also stated that from September 20, 2005 until the screen was removed in early November 2005, the licensee inspected the tailrace of the project, on a daily basis, and did not observe any eel mortality.

The licensee proposes to continue effectiveness testing of the overlay screen by monitoring the project's tailrace and inspecting the overlay screen on a daily, weekday basis. The licensee proposed to report any eel mortality immediately to the DMR to determine what appropriate actions should be taken.

RESOURCE AGENCY CONSULTATION

On July 3, 2006, the licensee submitted draft upstream and downstream eel passage plans and effectiveness studies to the DMR, ASC, Maine Department of Environmental Protection (DEP), the U.S. Fish and Wildlife Service (FWS), Maine Department of Island Fisheries and Wildlife (DIFW), and the National Marine Fisheries Service (NOAA Fisheries)

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for their review and comment. The DMR, ASC, FWS and DEP submitted comments which were included with the licensee's filing.

By email dated August 4, 2006, the DEP indicated they had no comment regarding the plans, but would appreciate a final copy of the plans including responses to agency comments.

The ASC, by email dated August 7, 2006, deferred to the DMR, FWS and NOAA Fisheries for comments regarding the draft operations and effectiveness plans.

By email dated August 8, 2006, the FWS recommended that the licensee also inspect the overlay eel screens at unit 1 on a daily basis for impingement related mortality. The FWS noted that any debris accumulation on the screens will increase the approach velocity, which is already at the maximum at the rated capacity, and may possibly impinge eels.

The FWS also stated that the eel fishway is sited and operated to pass elvers (less than eight inches) which the FWS concurs with. However, the FWS suggested that the plan include wording noting that additional measures may be required in the future if upstream passage of larger yellow eels becomes an objective.

Lastly, by email dated August 10, 2006, the DMR provided its comments. Regarding downstream eel passage, the DMR concurred with the FWS's comment that the licensee should include daily inspection of the overlay eel screens at unit 1 for impingement related mortality in case debris accumulates on the screens.

Regarding upstream passage, the DMR stated that the low counts since 2003 can be explained mostly by high flows over the spillway due to turbine repair or excess rainfall and a hole in the trap. The DMR added that it will continue to monitor passage and will work with the licensee to further test effectiveness if needed in the future.

DISCUSSION

The licensee's final eel passage plans and effectiveness studies incorporated all the comments of the resource agencies with the exception of the FWS's wording regarding the upstream passage of yellow eels. The licensee explained that the management objective for eel passage focuses on the upstream passage of juvenile eels and not adults.

Adult eels are believed to die after spawning in the Sargasso Sea. After hatching and some development, the young eels, or elvers, return to freshwater rivers where they migrate

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upstream and remain until sexual maturity. After maturing, the adult eels migrate downstream to the ocean and return to the Sargasso Sea to spawn. Given the eel's life history, we concur with the licensee that it does not appear necessary, at this time; to include a provision in the plan for additional language regarding upstream passage of adult yellow eels.

The licensee's plan provides flexibility and adaptive management provisions for installing and removing the eel screens. The plan states that the licensee, based on consultation with the DMR, reserves the authority to modify the annual schedule based on actual experience gained in eel screen overlay operation and migratory patterns. Rather than formally requesting an amendment of the plan's schedule each year and approval from the Commission, the licensee's proposal and DMR's concurrence, that discretion for installing and removing the screens be left to the licensee and DMR appears reasonable. The dates for installation and removal should center on the dates specified in the approved downstream eel passage plan. Please note that a substantial or permanent alteration of the dates would require an amendment of the schedule, but modifying the schedule several days or a week based on migratory patterns, streamflows, weather conditions, etc. should not affect the overall rationale of the plan. The licensee, however, should be required to document its consultation with the DMR regarding any change from the September 1 installation date and the November 30 removal of the eel overlay screens. Written or email correspondence with the DMR should be retained at the project.

CONCLUSION

The licensee's upstream and downstream eel passage plans and effectiveness studies, filed August 30, 2006, for the Benton Falls Project, adequately meets the requirements of the Order Approving Settlement, Transferring License and Amending Fish Passage Requirements and the KHDG Settlement Agreement. Accordingly, the licensee's plan, as modified, should be approved.

The Director Orders:

(A) Benton Falls Associates' (licensee) upstream and downstream eel passage plans and effectiveness studies, filed August 30, 2006, for the Benton Falls Hydroelectric Project, as modified by paragraph (B), is approved.

(B) The licensee shall document its consultation with the Maine Department of Marine Resources (DMR) regarding any change from the September 1 installation date and the November 30 removal date of the eel overlay screens. Written or email correspondence with the DMR shall be retained at the project.

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(C) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 CFR ¶ 385.713.

George H. Taylor
Chief, Biological Resources Branch
Division of Hydropower Administration
and Compliance