

Alaska Energy Cost Reduction Program Progress Report

Grantee: Alaska Power & Telephone Company

Grant # 313-07

Period of Report: First Quarter 2008 (January 1 through March 31, 2008)

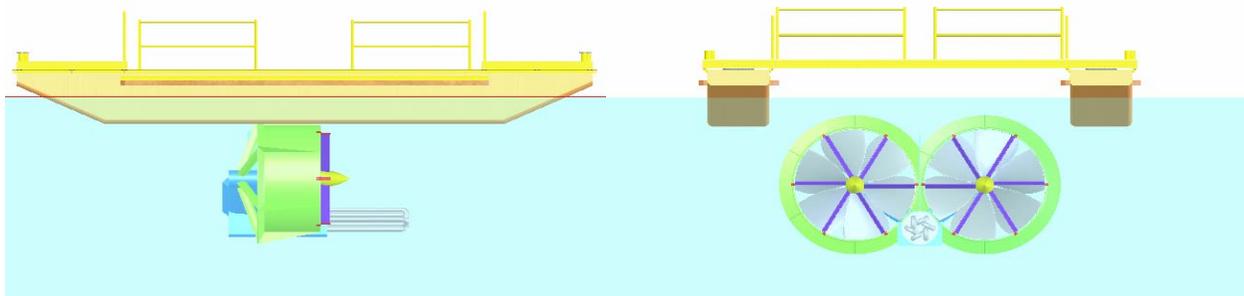
Project Name: Eagle Hydrokinetic River Turbine Project (Denali)

Quarterly project activities completed:

License application were prepared and submitted to FERC for the Yukon River turbine project at Eagle. The FERC acknowledged the receipt the application and provided a few comments but stated the license application could not be fully reviewed and would be placed in abeyance as an earlier application for a permit to construct a similar project had been granted. The permit period is three years. The older permit holder was informed of the AP&T project.

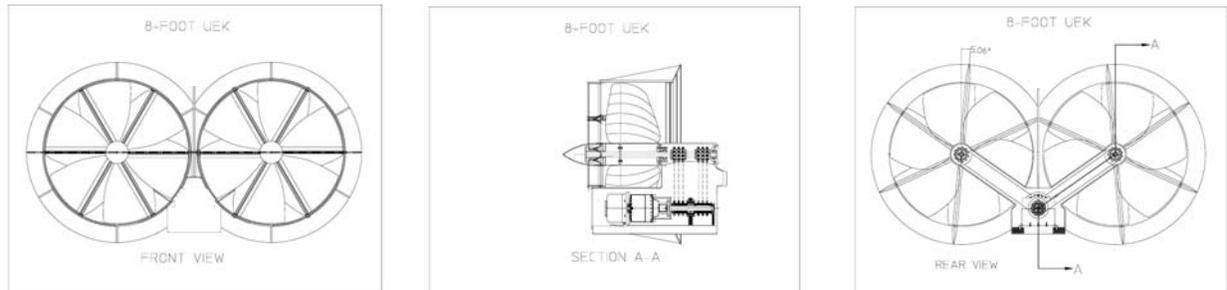
Several interviews were conducted with fishery agencies involved with the Yukon River to develop testing procedures and required analysis to measure turbine impact on the river and fish species. The greatest concern is the turbines impact on the salmon fishery because the turbine will be in the river during the outward migration of juveniles occurring in late spring, and the inward migration of the adults occurring late in summer. AP&T staff attended the Yukon River Joint Technical Committee meeting to discuss the project with governing agencies. Upcoming UEK testing virtually identical turbine will provide a great deal of performance information. A consultant has been contracted to assist evaluating the best practices for observing fish proximity to the turbine. At this time it is expected a combination of sonar/acoustic devices will be used around the turbine to study fish.

UEK has continued with engineering and design work for the project. As mentioned previously, a nearly identical similar turbine to the Yukon project is in the final stages of assembly and should be tested during April. AP&T staff will witness the turbine testing and study the results of turbine performance, deployment and handling methods. This data will help define the requirements for this project. UEK has said a complete design package available for review in April and will meet with AP&T staff for a design review.



UEK renderings of barge deployed turbine equipment

AP&T contracted Clifton Labs of Seattle, WA to perform an energy study of the Eagle generation utility including the hydrokinetic project. The initial portion of the study is complete and provides a guide for efficiently operating the hydrokinetic turbine within the Eagle generation utility. Clifton Labs will revise their results with performance data acquired from UEK testing. They are developing plans and equipment specifications for integrate the hydrokinetic generation into the existing diesel generation system.



UEK drawings of the Yukon River hydrokinetic turbine

AP&T has been studying several approaches to anchoring the turbine in the river, originally the anchor was to be a Danforth type, but river studies have provided information that the river bottom is made up of larger river rock that would prevent this type of anchor from properly securing the turbine. Studies of deploying deadweight type anchors, installing pilings, or a combination of methods continue.

The property for the shore facility has been identified and the City of Eagle has agreed to its use. A plan has been submitted for the deployment of the power cable from the land side station to the river turbine.

Project existing or potential problems:

None known at this time

Activities Targeted for Next Reporting Period, Second Quarter 2008:

- Initial UEK turbine equipment design review by AP&T scheduled at the end of April 2008,
- Witnessing of UEK turbine testing at the UEK facilities in Annapolis, MD scheduled in April 2008.
- Continuation of anchorage design evaluation
- Continuation of landside equipment design evaluation
- Continuation of environmental/ fishery impact testing methods evaluation.