

## Alaska Energy Cost Reduction Program Progress Report

**Grantee:** Alaska Power Company

**Grant #** 313-07

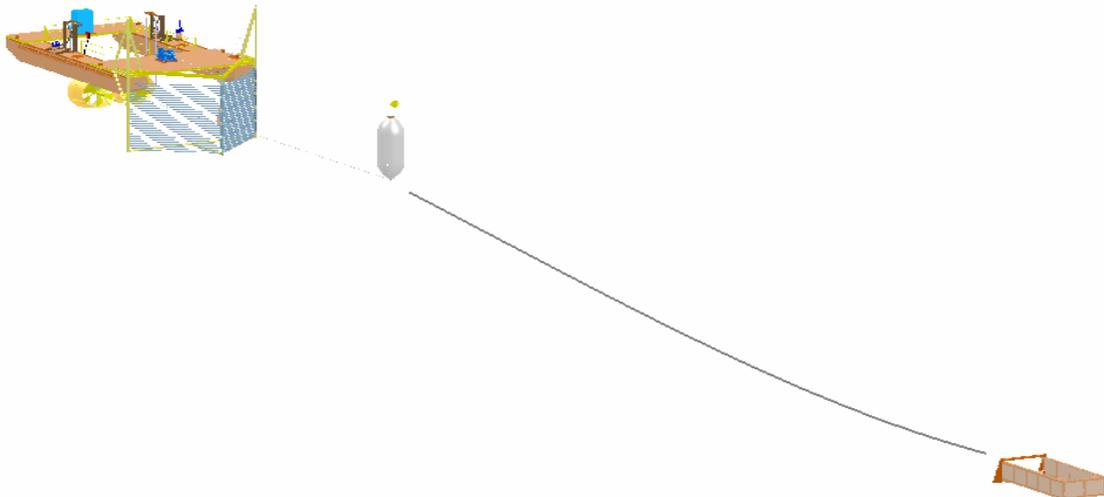
**Period of Report:** Third Quarter 2008 (July 1 through September 30 2008)

**Project Name:** Eagle Hydrokinetic River Turbine Project (Denali)

### Quarterly project activities:

Work continues on a number of turbine equipment design pieces. The turbine mechanical design is complete and manufacturing of turbine elements initiated. Engineering activities continue on the electrical design. Designs call for monitoring and control systems integration with the turbine assembly. UEK completed the turbine support platform, trash rack, anchor and mooring system design and submitted to AP&T for review and approval. Also submitted for review were deployment and recovery procedures.

The sketch below shows the primary elements of the turbine equipment. The turbine support platform and buoy are moored to an anchor sled located 200 feet upstream. The anchor sled will penetrate the river bottom.



### Stream and Fishery Studies

BioSonics completed the in-stream fishery survey 2008 and extracted the equipment from the river. BioSonics will analyze the data collected and return a report submitted in a couple of months. To get a better understanding of the BioSonics data, additional sampling was performed in September under ADF&G permit number SF2008-224. AP&T contracted Environmental Dynamics Inc. of Whitehorse, Yukon Territory, Canada, to perform the sampling and prepare the report. They deployed a drift net from the AP&T workboat. They conducted 51 drifts covering the potential turbine deployment area from the surface to 18 feet deep. This sampling yielded no fish. During this time of year it is known that salmon move upstream near the river edge outside the sampling area. There was an expectation of collection local whitefish species but this sampling contributes to the lack of species behavior understanding. The absence of these species in the turbine operation area indicates that these species will not be affected by the turbine.



**Figure 2** – Drift net rigged for 0-6ft deep collection.



**Figure 3** – Drift on the river

**Activities Targeted for Next Reporting Period, Fourth Quarter 2008:**

- Continuing with the design of the final turbine features including monitoring and control systems
- Continuing the planning and design of the turbine deployment and extraction procedures.
- Continuation of fish monitoring data review and submittal of report for studies performed in 2008.