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Ernest K. Hauser
SVP - Project Development & Management

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September 30, 2009 390-113320/2.0

Kimberly D. Bose, Secretary ***VIA E-FILING***
Federal Energy Regulatory Commission
888 First Street, NE, Room 1-A
Washington, DC 20426

Re: Nenana OCGen™ River TGU Power Project (P-13233)
Progress Report No. 2

Dear Ms. Bose:

ORPC Alaska, LLC. (ORPC) is pleased to submit the second progress report for the Nenana OCGen™ River TGU Power Project (P-13233-000) located in the Tanana River, within the Unorganized Borough of Yukon-Koyukuk, near Nenana Alaska.

Consultation

ORPC initiated consultation with resource and regulatory agencies and potential interested parties in preparation of a Project stakeholders contact list. Notice of a Project information and consultation meeting was issued to the stakeholders list and a public meeting was held at the community center in Nenana on June 17, 2009. The meeting summary, copies of presentations, and Project Questionnaire soliciting additional feedback and available information was distributed on July 7 and is attached to this progress report (Attachment A).

The University of Alaska, Fairbanks' Alaska Center for Energy and Power (ACEP) also held a Project meeting to bring partners including ORPC, and the Nenana Native Council as well as agency representatives from the Alaska Department of Fish and Game, the State of Alaska Department of Natural Resources, and Nation Marine Fisheries Service together. The purpose of the meeting was to begin scoping the environmental and technical studies to be undertaken through funding received by ACEP from the Alaska Renewable Energy Fund to further the Nenana Hydrokinetic Test Site in cooperation with ORPC.

Letters requesting information on rare, threatened and endangered species, protected habitats, and essential fish habitat were sent to appropriate agencies on September 17, 2009.

Feasibility Studies

ORPC continues collaboration with the ACEP to further ORPC's Nenana Project and to assist ACEP in establishing a hydrokinetic device test center at Nenana.

While there was a delay in the grant money distribution, ORPC and ACEP are continuing efforts to conduct feasibility and site characterization studies, including a field survey of the bathymetry and river velocities at the site completed by ACEP subcontractors in September 2009. ACEP is currently working on study designs to evaluate river sediment transport, erosion, ice formation, and debris, as well as a study to assess potential impacts to fish.

ORPC is in the process of developing a draft Pilot License Application for the Nenana Project with plans to file the draft application with FERC in November 2009. Pending all regulatory approvals, ORPC plans to build and install at one RivGen™ TGU at the Nenana site in 2010.

Please contact me at (207) 772-7707 if you have any questions or need any additional information.

Very truly yours,

Ernest K. Hauser
Senior Vice President - Projects

EH/MM/jph
Attachments

cc: Service List
M. McCann
File

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CERTIFICATE OF SERVICE

I hereby certify that I will, within the timeframe and means established in 18§C.F.R.385.2010, serve the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

DATED this 30th day of September, 2009.

Ernest K. Hauser
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July 7, 2009

ORPC – Nenana Hydrokinetic Project (FERC No. 13233)
Public Meeting

June 17, 2009, 7:00 PM
Nenana, Alaska

Meeting Attendees:

Bonnie Borba	Alaska Dept. of Fish & Game - Commercial Fisheries, Fairbanks
Jim Durst	Alaska Dept. of Fish & Game - Habitat, Fairbanks
Audra Brase	Alaska Dept. of Fish & Game – Sport Fish, Fairbanks
AJ Wait	Alaska Dept. of Natural Resources – MLW-lands, Fairbanks
Jason Mayrand	City of Nenana
Mike Wright	Golden Valley Electric, Fairbanks
James Brady	HDR Alaska, Anchorage
Mary McCann	HDR|DTA, Portland, Maine
Jim Townsend	interested person, North Dakota
Sue Walker	NOAA - Fisheries, Juneau
Ernie Hauser	Ocean Renewable Power Company, Portland, Maine
Monty Worthington	ORPC Alaska, Anchorage
Jerome Johnson	University of Alaska Fairbanks, ACEP
Andy Seitz	University of Alaska Fairbanks, ACEP
Ross Coen	Tanana Chiefs Conference / University of Alaska Fairbanks, ACEP

Advertisement:

In the months preceding the meeting a list of agency and stakeholder contacts was assembled. Telephone calls were made to many of the contacts verbally informing them of the June 17th public meeting. A formal meeting announcement was sent out on June 6th via email to 36 addresses on the assembled contact list.

Presentations:

The meeting was opened by Monty Worthington, project manager for the ORPC Alaska's (ORPC) Nenana River TGU Power Project. He noted that this was the first public meeting for the project initiating the Federal Energy Regulatory Agency (FERC) consultation process. With an accompanying PowerPoint presentation, Monty provided background on the project and the proposed operations under a FERC Pilot License. The project will deploy an ORPC turbine generation unit (TGU) in the Tanana River at Nenana. Technical studies for the project are being conducted by the University of Alaska Fairbanks. Ernie Hauser provided additional detail on the turbine design and development.

Mary McCann presented an overview of the FERC licensing process and how the Pilot License for the Nenana Project differs from a standard commercial license from FERC. Pilot License's are for small scale projects that can be removed. Pilot Licenses are given a short operational term of five to eight years that allows for the development of new technologies and to evaluate their environmental effects. Mary stated that this meeting was the initiation of consultation. ORPC would be sending out a questionnaire with the meeting summary to solicit feedback on the proposed project as well as any existing information people aware of that would be useful in preparing the draft license application. This information would also be used to develop proposed monitoring plans which are required for the Pilot Project License Application. ORPC will be working with University of Alaska Fairbanks in developing these plans.

Questions & Answers:

Will the PowerPoint Presentations be made available?

> **Response:** Yes, the PowerPoint presentations and a meeting summary will be distributed to everyone on the contact list and to anyone who requests a copy.

Has ORPC considered flume studies to evaluate the effects on fish passing through the turbine?

> **Response:** At this time flume studies are unlikely due to the limited availability of a suitably sized flume and the associated costs. It is unlikely that a flume study would accurately reproduce the operating environment of the turbine in the Tanana River, or the fish life stages likely to be in the river. ORPC has taken steps in its design to significantly reduce the chance of fish strikes or injury based on extensive studies conducted for conventional hydropower turbines. The turbine hydrofoils are shaped like airplane wings with a blunt leading edge. The velocities of the turbine foils are quite slow compared to that of windmill style turbines. There are no pinch points in the design and there is a good deal of free space in the turbine operating space. Under the Pilot License, the passage of fish will be tested in situ as part of the evaluation studies.

What is the size of the TGU? How deep is the river where the TGU will be tested?

Response: The TGU is 14 feet in diameter and approximately 50 feet long. River bathymetry studies are incomplete, however depths at the site indicate an approximate depth of 20 to 25 feet.

What is the cost of the TGU? What is the power output and where will the power go? What is the economic recovery time for costs?

Response: The beta TGU is estimated to cost $700,000 and will generate approximately 50 to 60 kilowatts. Power will be hooked into the power grid. Because this is a development unit, ORPC does not expect to recover costs through the sale of power under the term of the Pilot Project license. The pilot project is a demonstration test to continue technology development and to collect environmental effects information. This information is needed to evaluate a more conventional commercial project and licensing activities that would be economically viable.

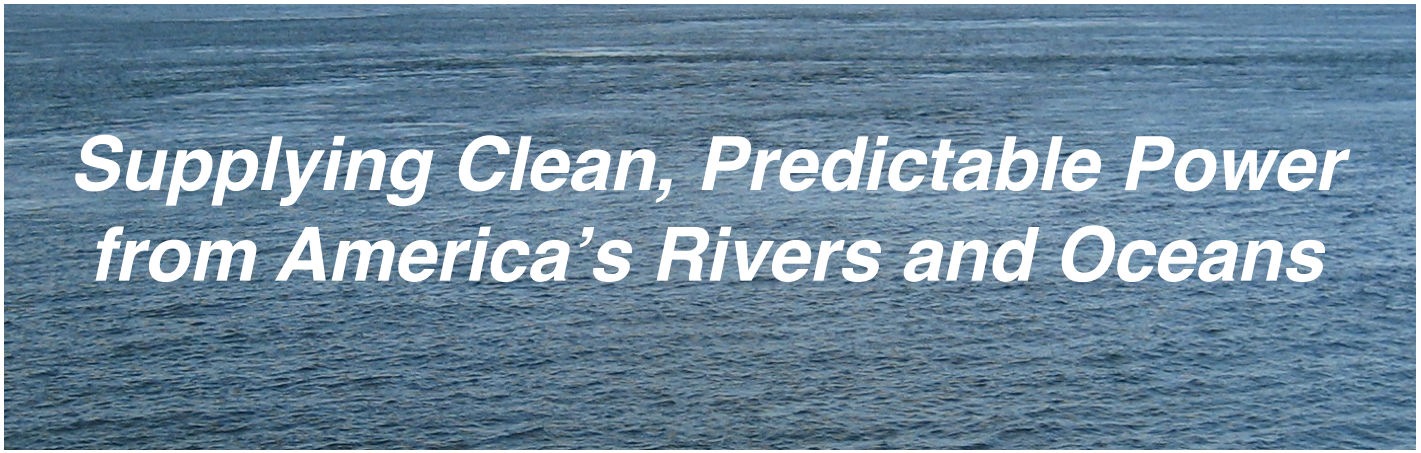
Will water turbulence at the TGU site result in a thinning of the ice during winter time operations?

Response: We do not have an answer at this time. Studies conducted under the Pilot License will address issues relating to this.

How will you remove the TGU from the water in the winter?

Response: Removing the TGU from the water in the winter will involve cutting an access hole in the ice and lifting the unit out with a crane. Late winter ice may provide a convenient platform to operate from when removing the TGU. The intent is to remove the unit prior to ice breakup and reinstall following breakup.

ORPC Alaska



Nenana Pilot River Project Presentation

June 17, 2009

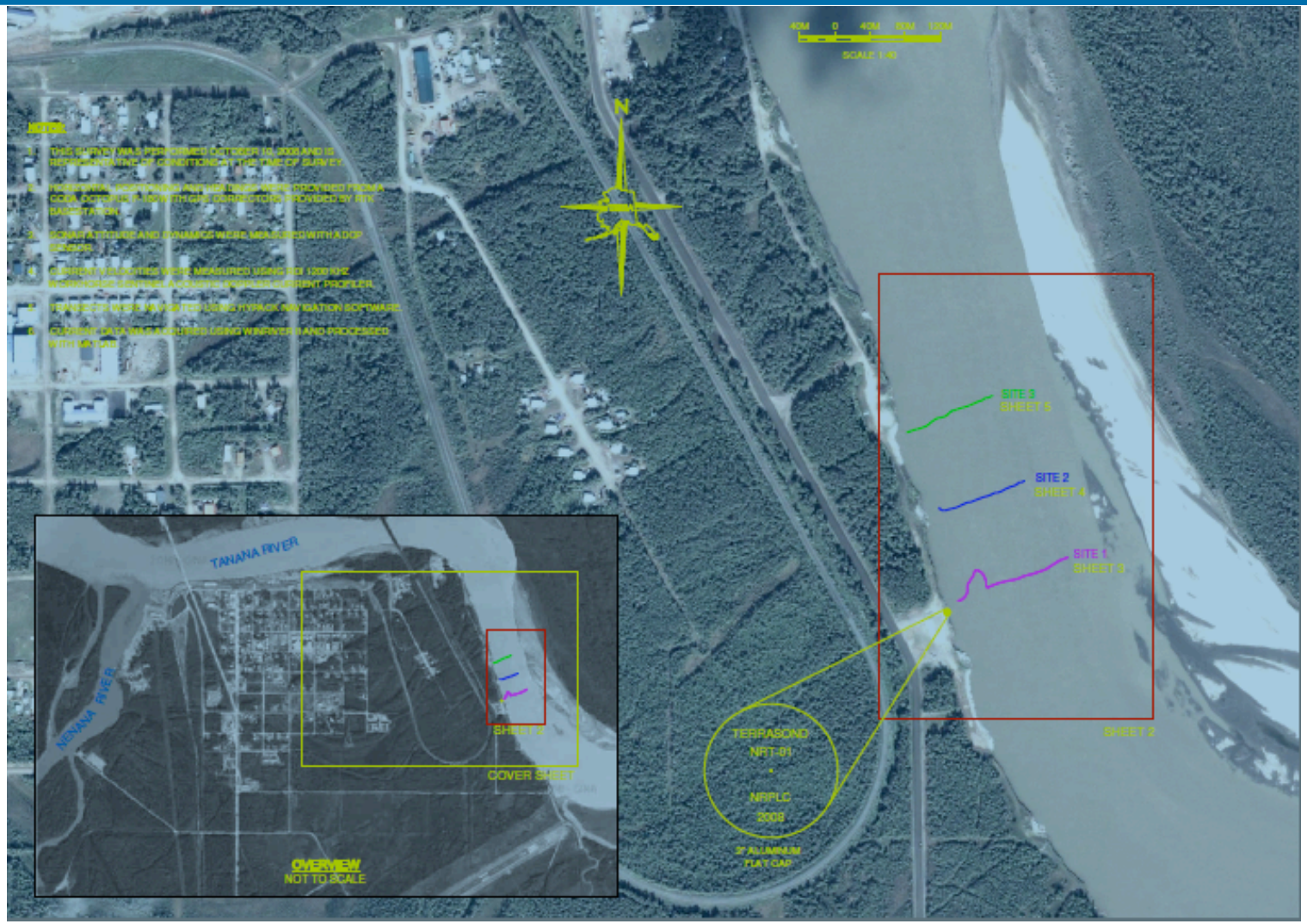
ORPC Overview

Ocean Renewable Power Company (ORPC) is a developer of technology and projects that convert river, tidal and deep water ocean currents into emission-free electricity

- A Delaware LLC founded in 2004 with its executive office in Portland, ME, a corporate office in Fall River, MA and project offices in:
  - Anchorage, AK (ORPC Alaska, LLC)
  - Eastport, ME (ORPC Maine, LLC)
  - Tampa, FL (ORPC Florida, LLC)
- Proprietary ocean current generation (OCGen™) technology.
- Successful demonstration of the technical feasibility of the core component of OCGen™ technology, the Turbine-Generator Unit (TGU), in Spring 2008.
- Project sites *in three* of the world's most promising tidal energy resources (Western Passage and Cobscook Bay, ME and Cook Inlet, AK), and one river site (Tanana River at Nenana, AK)
- Planning a tidal deployment of the commercial TGU design in the summer and fall of 2009.

ORPC Alaska

ORPC Project Area



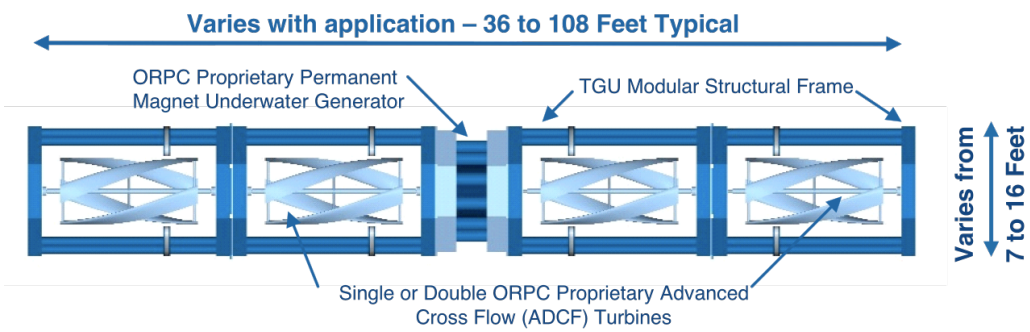
Nenana Project Schedule

- Draft Pilot License Application – Nov. 2009
- Final Pilot License Application – Jan. 2010
- FERC Approval of Pilot License – June 2010
- Deploy and begin testing ORPC River TGU – June 2010
- Test in conjunction with Alaska Center for Energy and Power - UAF (“ACEP”)
- Build out under Pilot License – June 2011 - Aug. 2012

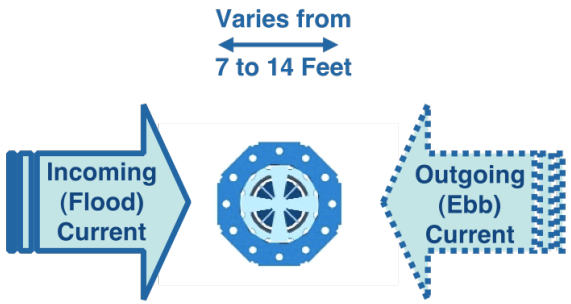
Core of the OCGen™ Technology
Turbine-Generator Unit (TGU)

A Simple and Rugged Underwater Workhorse

Patent applications filed



Front/Back Elevation



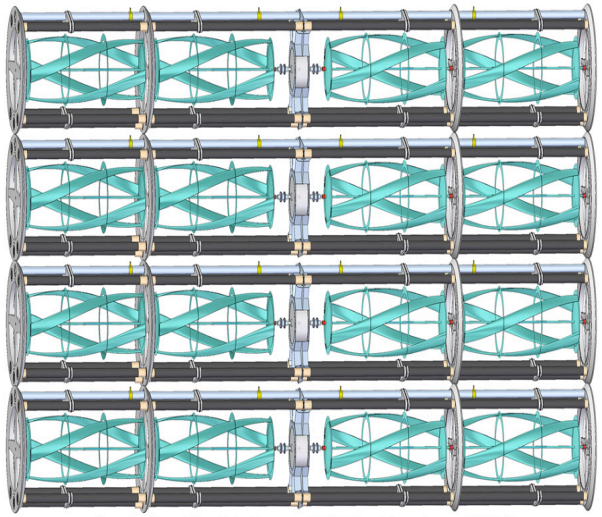
Side Elevation

- Adaptable to river, tidal and deep water ocean current applications.
- Single or double advanced design cross flow (ADCF) turbines positioned on both sides of a single underwater permanent magnet generator and connected on a single drive shaft.
- Robust power train with one moving part – no gears.
- Rotates in same direction for incoming and outgoing currents.
- Shop fabricated in modular components and shipped to project sites.

ORPC Technology Development Plan

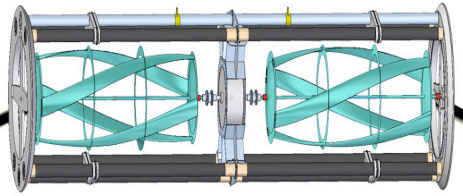
Tidal OCGen™ Module

4 Stacked TGUs.
Same as Beta Pre-Commercial With Additional Turbines Added on Each End.



Installed in Maine - 2010, Alaska - 2011

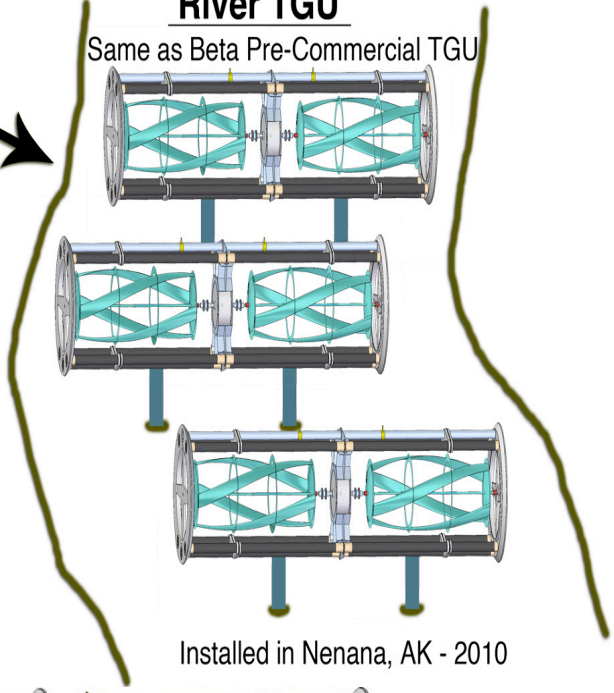
Beta Pre-Commercial TGU



The full scale TGU tested in 2009 is the primary component for River TGUs and OCGen™ modules to be installed in 2010 and beyond.

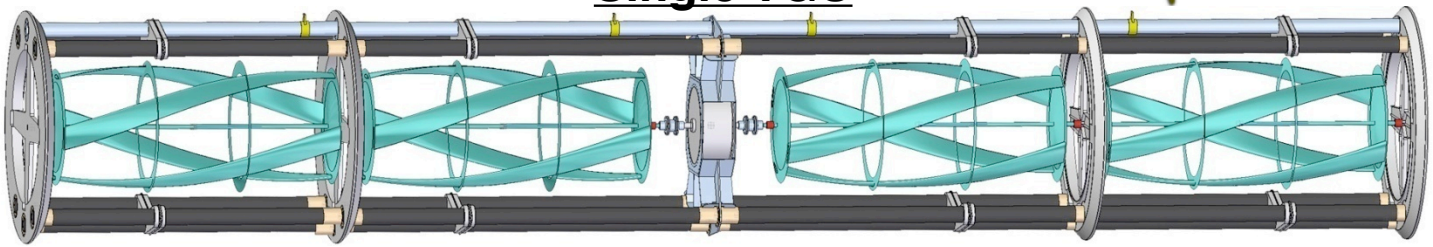
River TGU

Same as Beta Pre-Commercial TGU

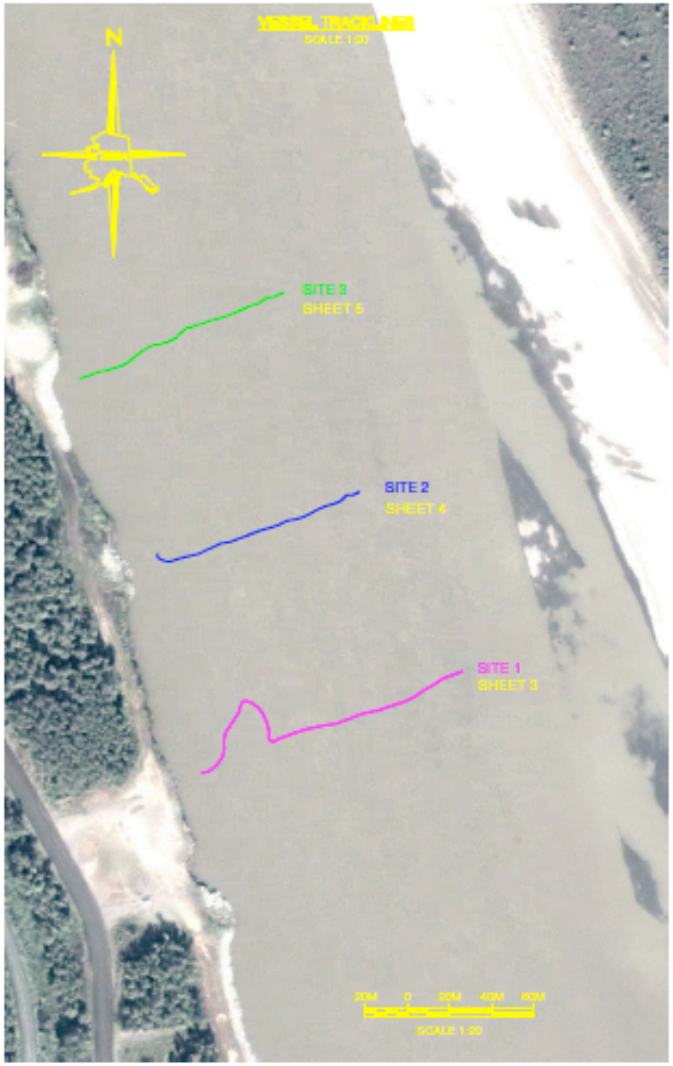


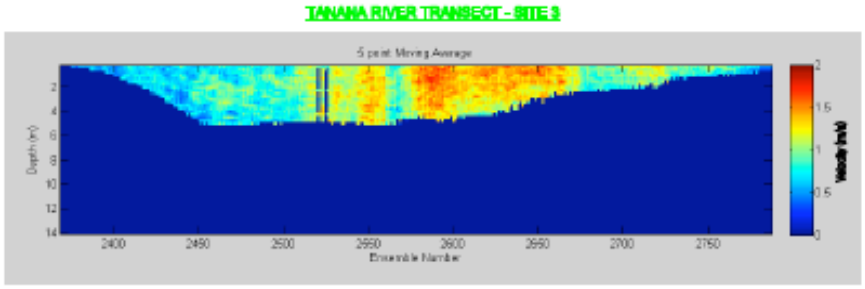
Installed in Nenana, AK - 2010

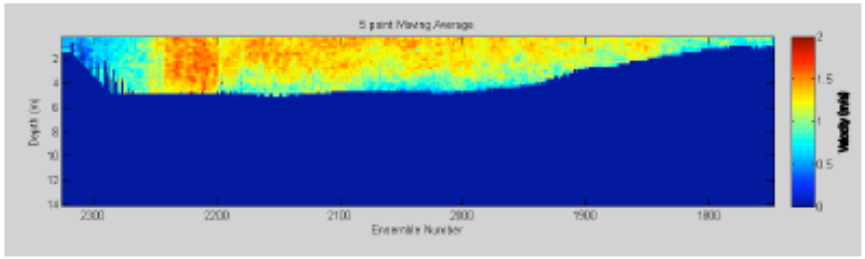
Single TGU

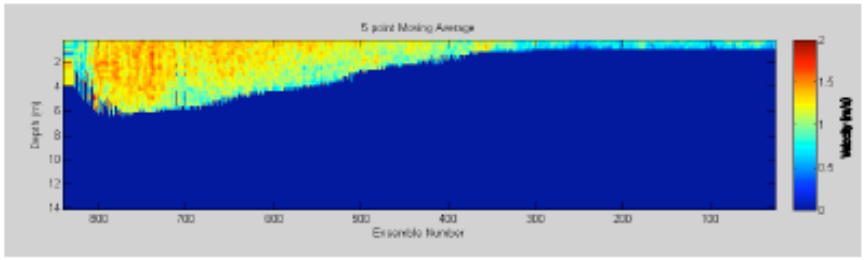


October 2008 Current Velocity Study









ACEP Environmental/Technical Effort

Studies supported by $450,000 from Alaska Renewable Energy Fund

- Year round study of current velocities in project area - July 2009
- Monitor baseline sediment suspension, deposition and erosion - July 2009
- Literature survey and data collection on fish distribution – July 2009
- Study debris abundance, distribution, and quality (size, type) – July 2009
- Study and monitor ice formation, breakup, and characteristics - Sept. 2009
- Funding for further studies applied for in cooperation with ORPC

Questions

ORPC Alaska
Nenana River TGU Power Project

FERC Commercial Licensing Process

- Federal Energy Regulatory Commission (FERC) jurisdiction over hydropower
- Preliminary Permits
  - Establish priority status for three years
- Notice of Intent (NOI) to file a license application and a Pre-Application Document (PAD) initiate the FERC licensing process
- Licensing process involves consultation and usually studies while developing license application
- FERC conducts NEPA analysis and develops license conditions
- Licenses authorize construction and operation for up to 50 years

New Hydrokinetic Energy Projects

- Fitting the existing FERC regulatory process to new technologies
- Implemented "stricter scrutiny" policy on new preliminary permits
- Pilot License Process

FERC Hydrokinetic Pilot License Program Objectives

To overcome barriers to realizing the potential of emerging hydrokinetic technologies by:

- Providing a streamlined approval process to allow short term testing of new hydrokinetic devices and to determine appropriate potential development sites;
- Gathering information on environmental and other effects of these devices;
- Collecting information to support full commercial buildout with actual units operating in the proposed buildout area; and
- Allowing the developer to realize a revenue stream from power sales under the pilot license term.

The Pilot License process has been designed to meet the needs of hydrokinetic developers, including the interconnection with the grid, while minimizing the risk of adverse environmental effects.

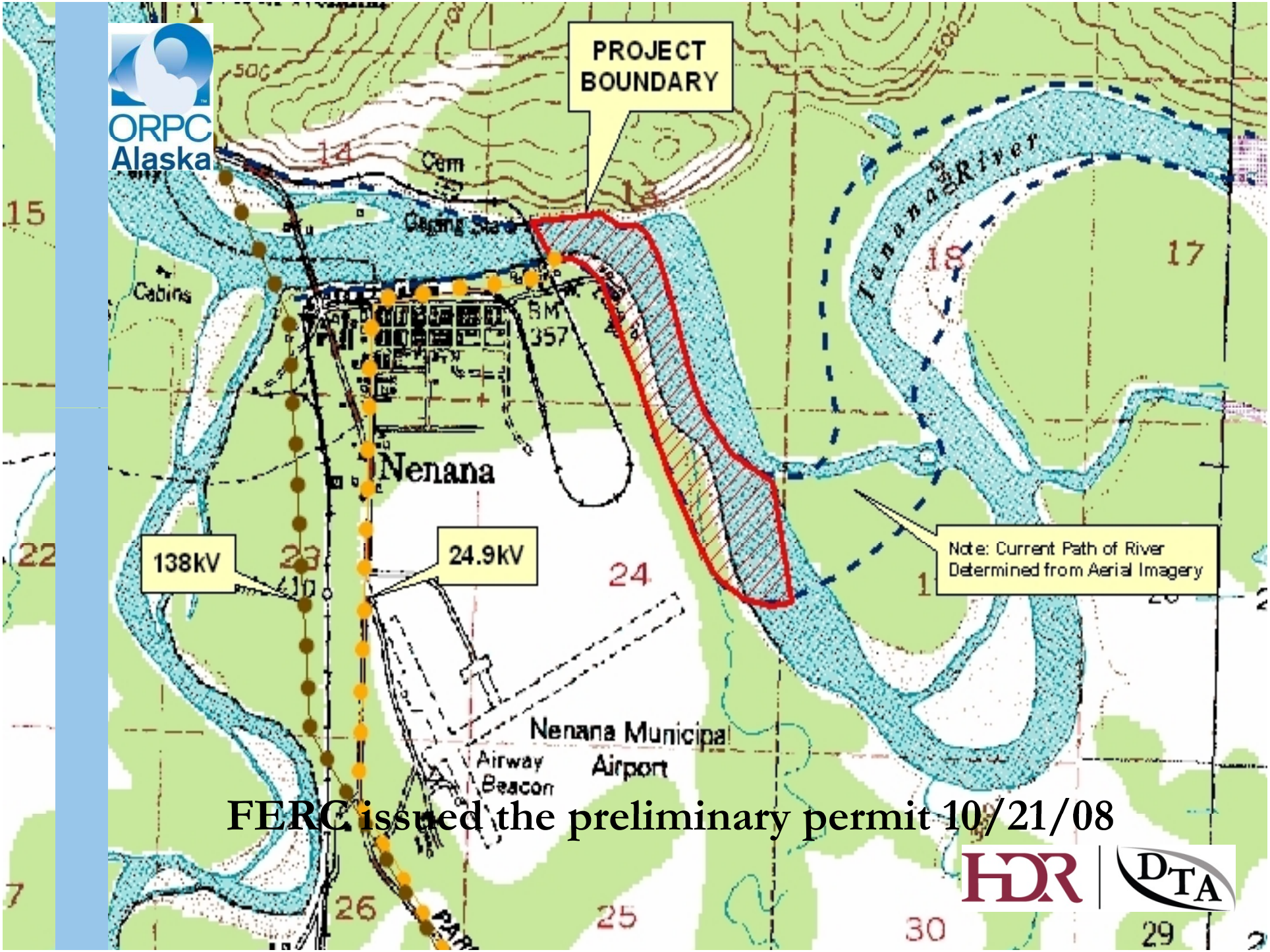
FERC Hydrokinetic Pilot License Program Criteria

- Pilot projects must be small and easily removable
- License will be short term
- Cannot be used in waters with "sensitive designations"
- Pilot project application must contain adequate information to support environmental analysis
- Pilot licenses subject to strict environmental safeguards
- Pilot project will be decommissioned and the site restored unless developer obtains a full FERC commercial license

Nenana River TGU Power Project

Responsible phased approach to development

- Nenana TGU pilot test design will build off results of the Eastport TGU testing and environmental monitoring
- Pilot License would allow for testing in the Tanana River under site-specific environmental conditions
- Results from the engineering and environmental monitoring would support project design of a commercial buildout



FERC issued the preliminary permit 10/21/08

Pilot License Process

Pre-Application Activity

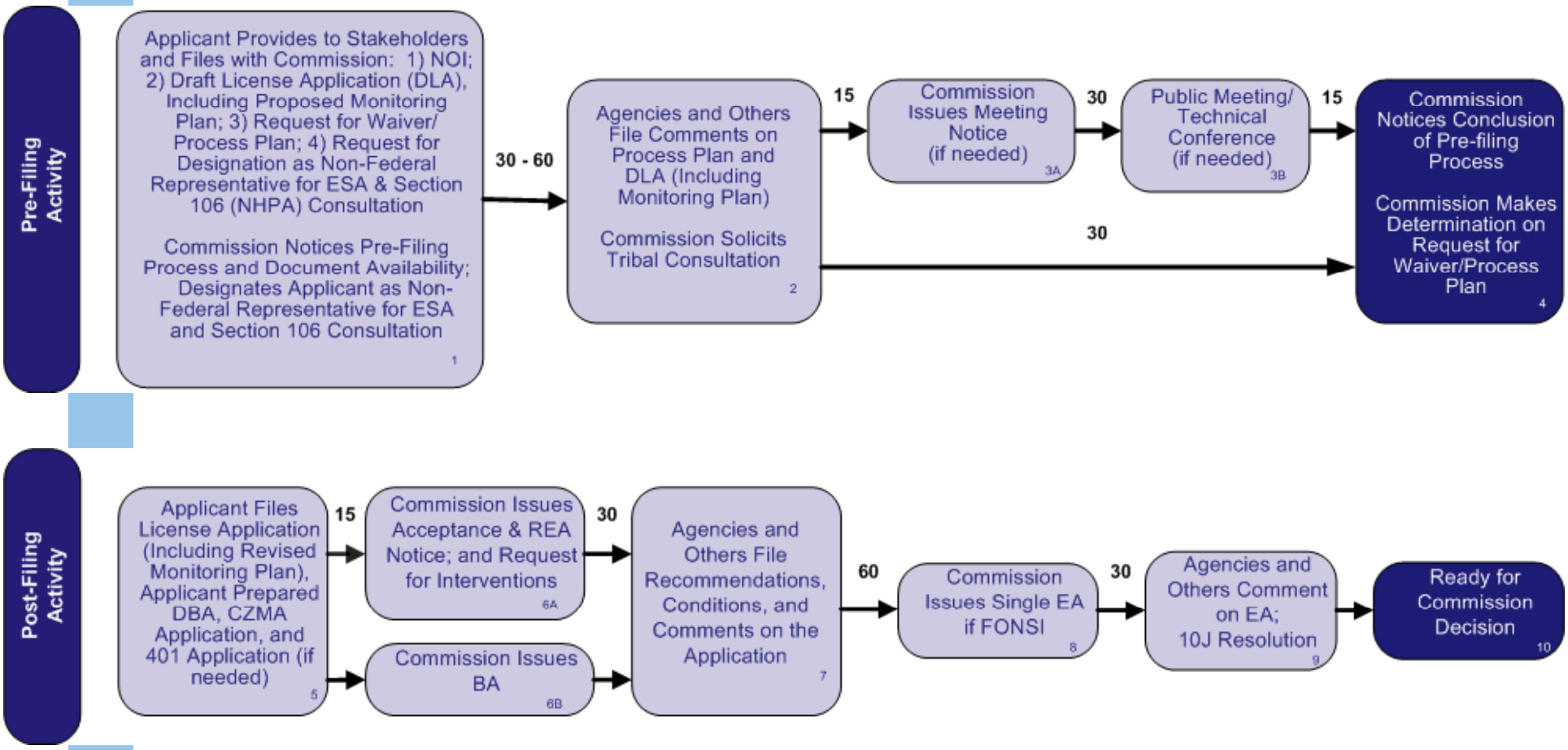
1. Obtain and review relevant existing information
2. Conduct Consultation
3. Develop Study Plans
4. Prepare Draft Pilot License Application (DPLA)
5. File NOI and DPLA with the FERC
6. DPLA out for public comment
7. Informal ESA (If appropriate) and Section 106 Consultation
8. Prepare Final License Application and file with FERC

Pilot License Process

Post-Application Activity

1. **FERC will review and issue notice that application is accepted and REA**
2. **Agencies, tribes, and public file comments; agencies file comments, recommendations, conditions**
3. **FERC issues EA if FONSI**
4. **Comments on EA and 10J resolution**
5. **Commission completes evaluation and issues conditional license if appropriate**

Pilot License Process Flow Chart



Nenana River TGU Power Project

WHERE ARE WE?

Initial Site Evaluation; submitted PPA 2008

Permit obtained October 2008

Working with University of Alaska Fairbanks and TerraSond on site characterization studies

ORPC has contacted multiple parties and presented at various conferences, meetings, etc.

Developed preliminary contacts list

Conducting initial consultation meeting

Nenana River TGU Power Project

WHAT'S NEXT?

Conduct research and evaluation of existing information

Obtain feedback on potential issues/concerns for monitoring studies

Work with UAF in identifying site-specific field studies in support of license application

Conduct consultation to develop monitoring study plans

File Draft Pilot License Application early November, 2009

Revise DPLA - additional study data and address comments

File Final Pilot License Application early January, 2010

Nenana River TGU Power Project

CONSULTATION PROTOCOL

ORPC acknowledges the importance of working with stakeholders and will be soliciting input and feedback by issuing a questionnaire with meeting summary

Digital distribution of consultation material via email

eFiling and eService