NOAA's National Marine Fisheries Service
Southwest Regional Office- Habitat Conservation Division

California Wave and Tidal Energy Projects

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David White
707-575-6810
david.k.white@noaa.gov

Why is NMFS interested in Wave and Tidal Projects?

- West coast wave energy rush
  - Lots of projects, lots of water
- NOAA resources and authorities implicated
  - MMPA, MSFCMA, ESA, FPA, NMSA, FWCA
  - Coordination needed
- What is a preliminary permit?

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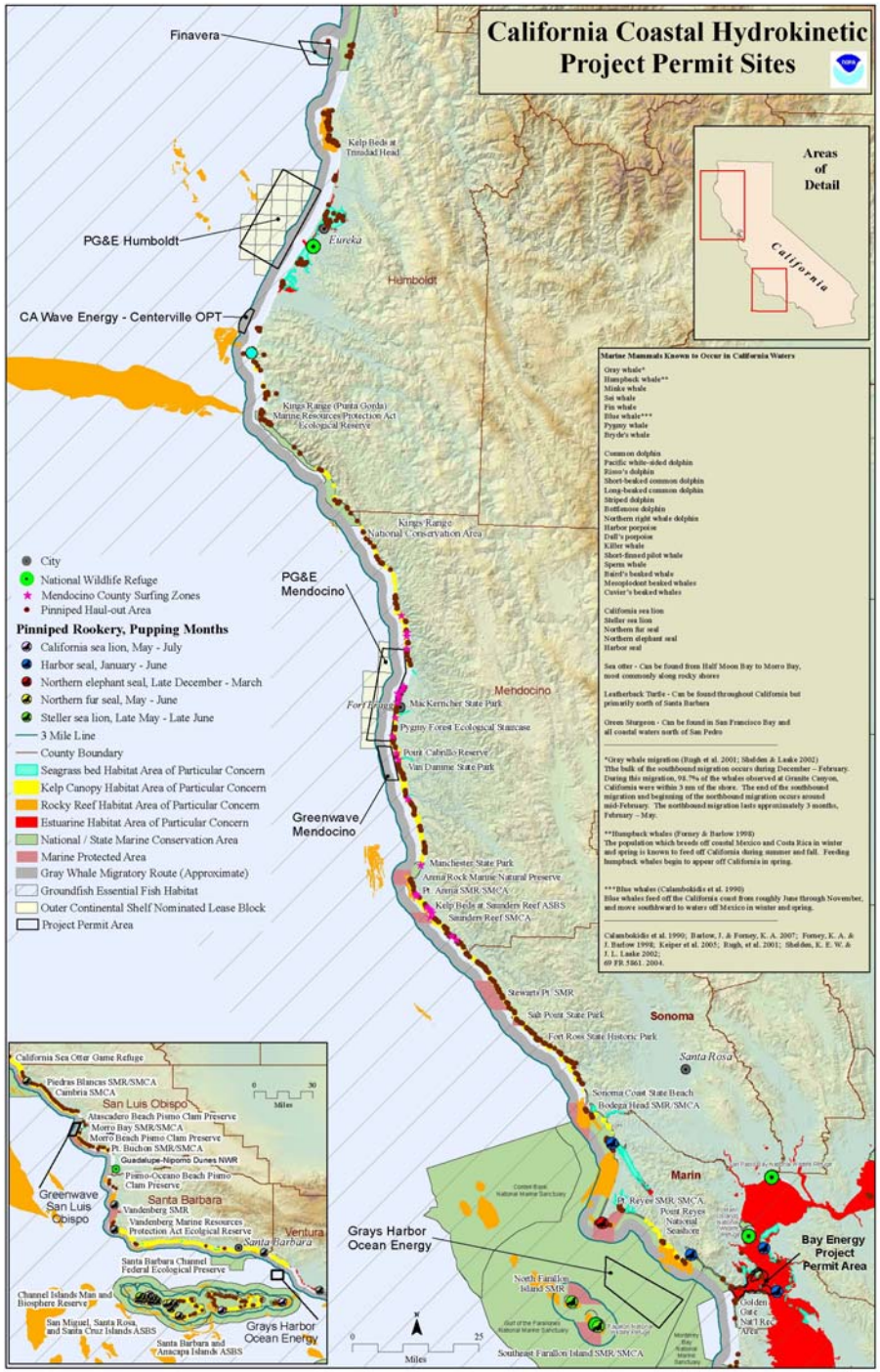

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Finavera Humboldt Project (P-12753)

100 MW

200-300 AquaBuoys

Water depth 150 ft

8 Sq mi

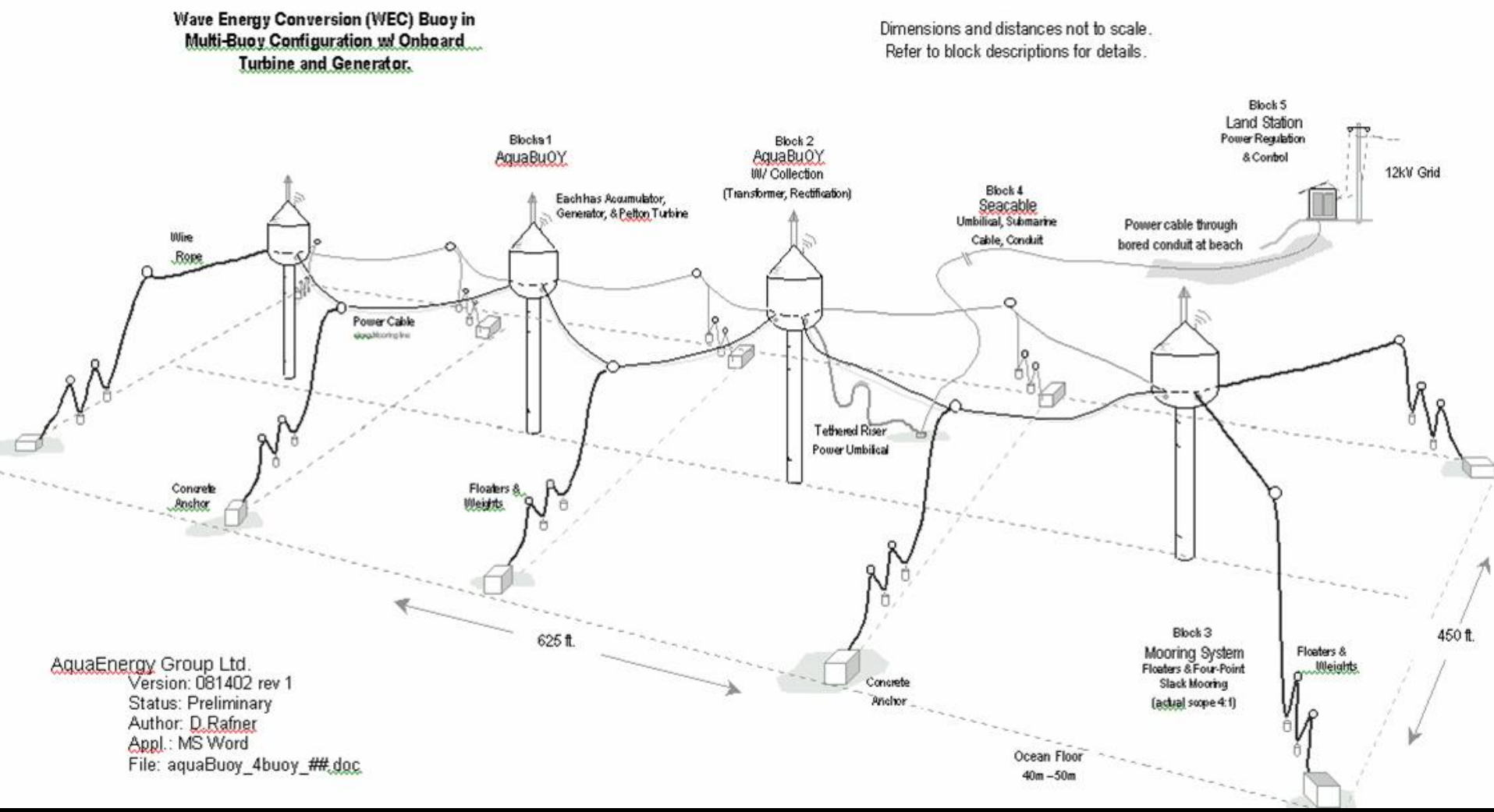
Permitted Feb 08

Transmission Line

Dimensions

Mooring Design

NMFS MOI



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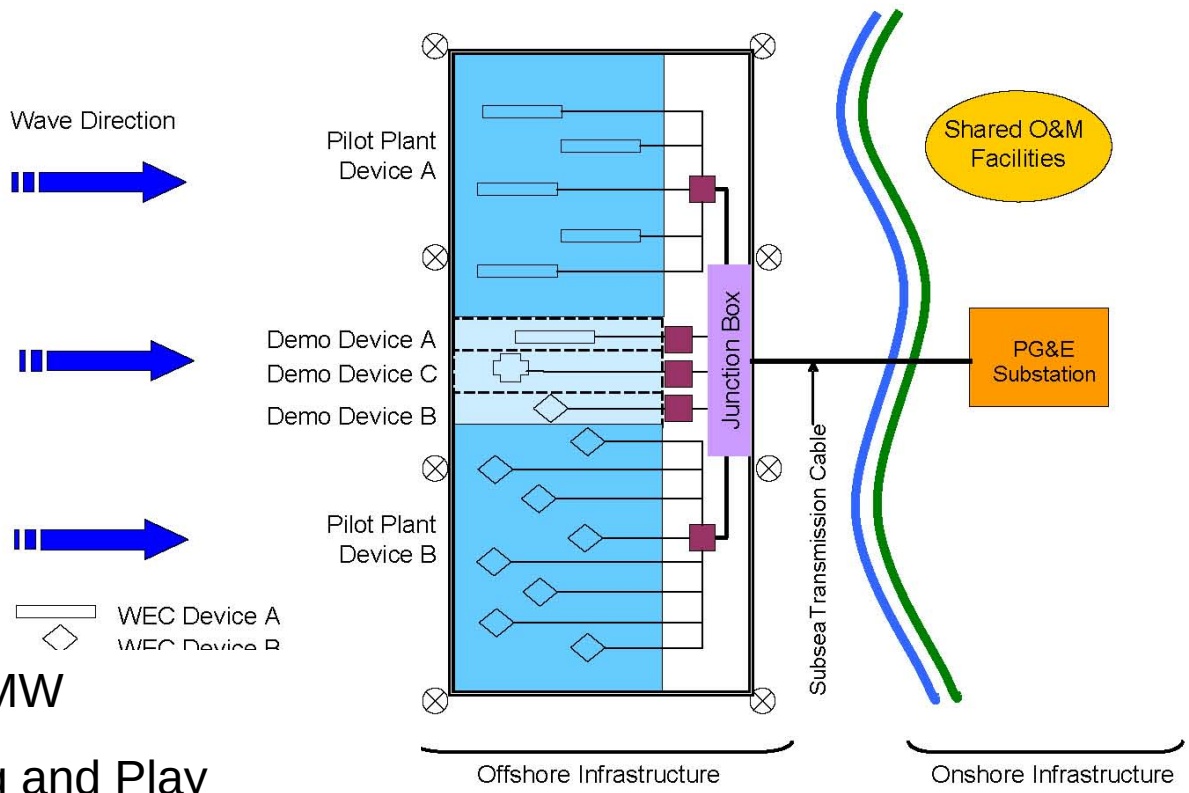
PG&E Humboldt & Mendocino WaveConnect (P-12779 and P-12781)



- PG&E is lead project developer
- PG&E obtains site control and conducts initial feasibility analyses
- PG&E develops infrastructure to evaluate, test, and deploy various WEC devices
- Open process for device selection
- Individual WEC device developers responsible for device-specific permitting
- Project is scaled up to 40 MW total
- Contributes to post-2010 RPS goals

40 MW

Plug and Play

Water depth 150 ft

136 sq mi /68 sq mi

Permitted Mar 08

Centerville Ocean Power Technologies (P-13075)

20 MW

OPT WECs

Water depth 150 ft

7 sq mi

Permitted June 08

Transmission Line

Dimensions

Mooring Design

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GreenWave
Mendocino & San Luis Obispo
(P-13053 and P-13052)

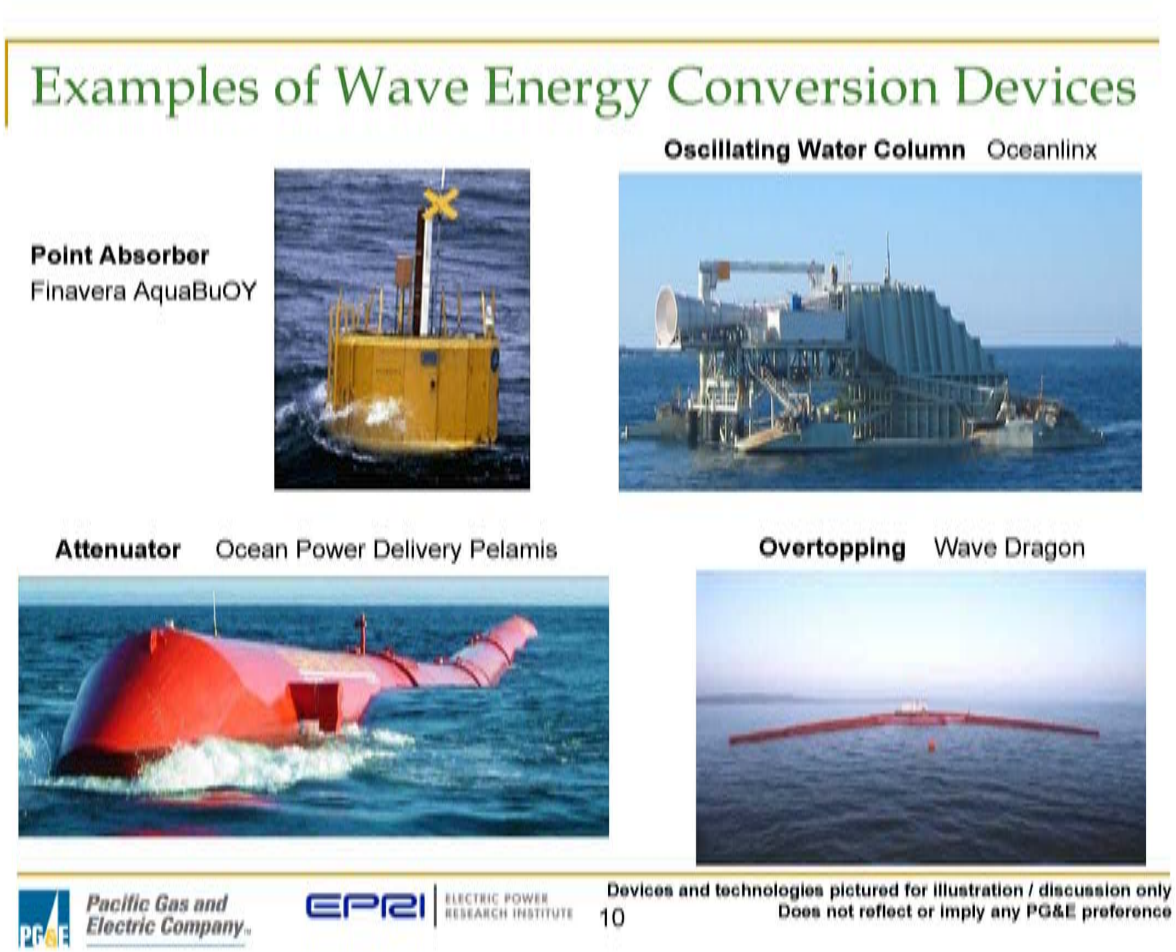
100 MW

Several WECs

Depth 150 ft

17 sq mi each

No permit



San Francisco Tidal Energy (P-12585)

San Rafael

Oakland

San Francisco

San Jose

- Two 30 to 50 ft counter rotating blades
- 60 units/sq mi
- NMFS Comments on Pilot Project and 2nd permit
- Permit?

- Pinniped Rookery
- Pinniped Haulout Site
- Gray Whale Migration Route (Approximate)
- EFH Conservation Areas
- Designated EFH
- Designated Critical Habitat
- Golden Gate Energy Company Proposed Project Site

N

0 10

Miles

Tidal Power Turbines

Verdant Power Turbine – East River Project – Installation Illustration

OpenHydro Open-Centre Turbine

MCT Seaflow SeaGen Turbines

Devices and technologies pictured for illustration / discussion only
Does not reflect or imply any PG&E preference

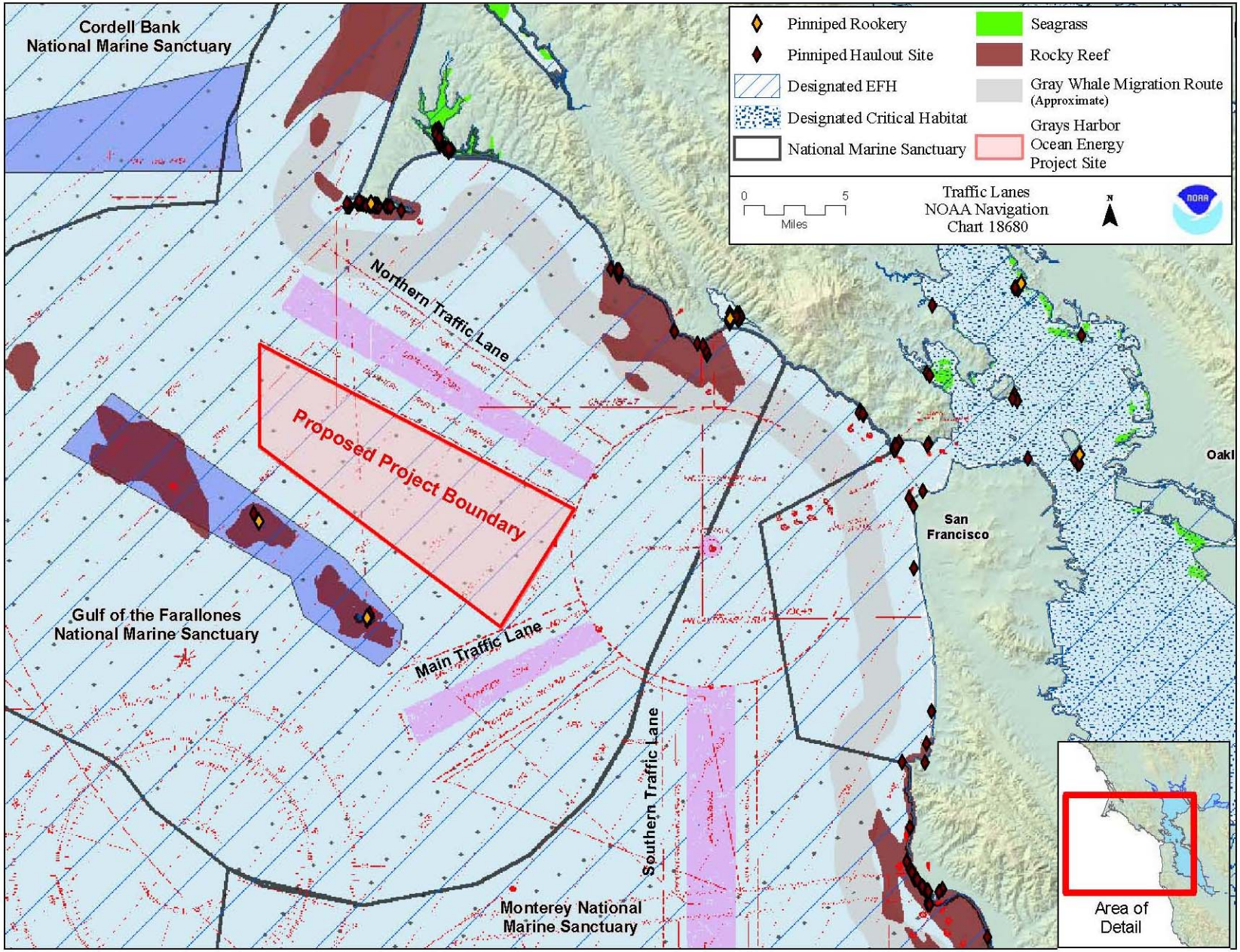
Grays Harbor
San Francisco and Ventura
(P-13308 and P-13309)

100 MW

OWC and Wind

90 and 28 sq mi

No permit



Grays Harbor San Francisco Wave Energy Project

Grays Harbor San Francisco (P-13308)

ONMS-NMFS MOI and Comments

"Given the information currently available, the ONMS recommends that FERC deny issuance of a preliminary permit for a project in this location. However, should FERC and the Applicant decide to progress with a preliminary permit, we recommend that the Applicant show just cause as to why such a project should be allowed within two National Marine Sanctuaries before the preliminary permit is issued. Regardless of the outcome of National Marine Sanctuary issues, the proposed project is still subject to requirements under the ESA, MMPA, MSA and the FWCA, and additional information requirements, as described above."

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Licensing Steps

- Preliminary Permit
  - 36 months
  - Feasibility and technology testing
  - Preserve first priority at the proposed project site
  - They do not authorize construction
- Pilot Project Application
  - <5MW, connect to grid
  - Not in “sensitive area”
  - Able to be removed completely
  - Draft application must support environmental review
- License Application

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Makah Bay Wave Project Status

- Makah, WDE, WDNR request rehearing
  - CZMA, CWA, ESA consistency not complete
  - OCNMS not a “reservation”
- FERC determination
  - No violation
  - Sanctuary not a reservation, so 4e’s don’t apply
  - Adopted all but 2 NOAA “recommendations” under FPA 10(a)
  - Future collaboration on authorities
- NOAA OGC 3/21/08
  - File for another rehearing
  - Continue to assert 4e authority for SCWA project

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Makah Bay Wave Energy Project

- NOAA FPA 4(e) terms and conditions included
  - Seafloor and eelgrass studies
  - Design review
  - Site inspections
  - Antifouling compound study & plan
  - Noise study & plan
  - Electromagnetic field study & plan
  - **Marine mammal entanglement and collision plan**
  - Bond and Decommissioning Plan

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Where to Get Information

- Stephen Bowler at FERC
  (202) 502-6861 or stephen.bowler@ferc.gov
- Maurice Hill at MMS
  (805) 389-7815 or maurice.hill@mms.gov
- www.ferc.gov (register, subscribe)

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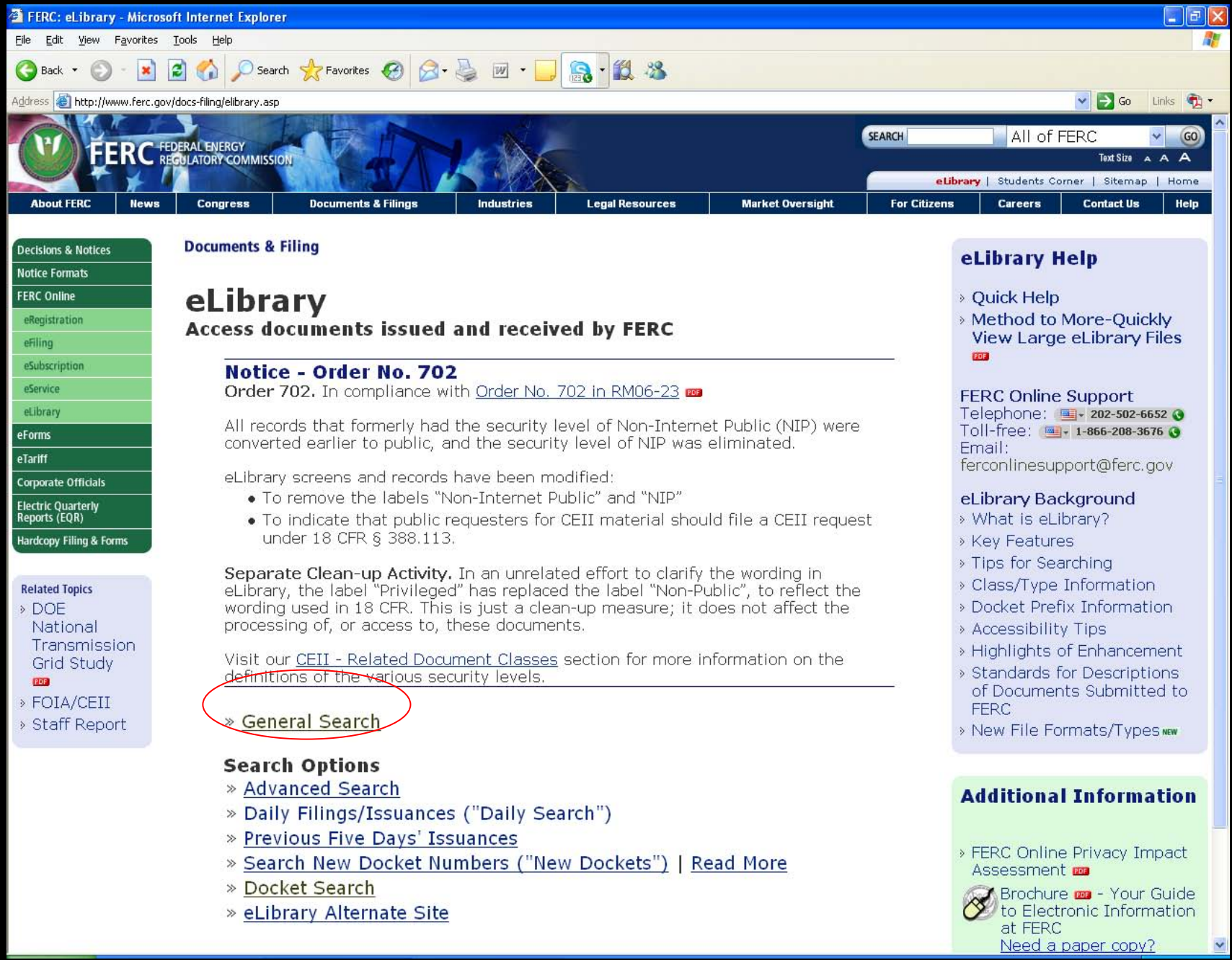
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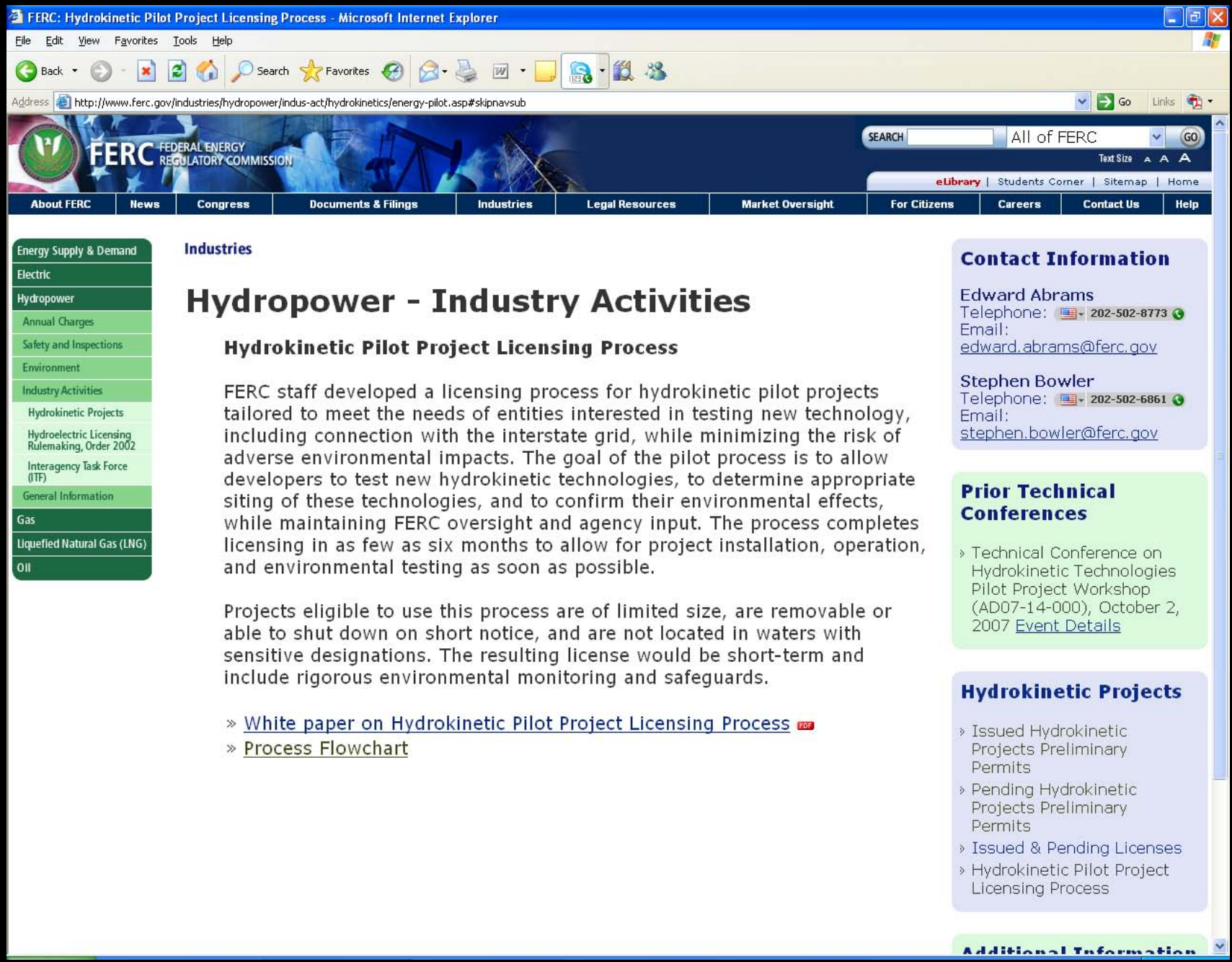
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Hydrokinetic Projects
Hydroelectric Licensing Rulemaking, Order 2002
Interagency Task Force (ITF)
General Information
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Hydropower - Industry Activities
Hydrokinetic Pilot Project Licensing Process
FERC staff developed a licensing process for hydrokinetic pilot projects tailored to meet the needs of entities interested in testing new technology, including connection with the interstate grid, while minimizing the risk of adverse environmental impacts. The goal of the pilot process is to allow developers to test new hydrokinetic technologies, to determine appropriate siting of these technologies, and to confirm their environmental effects, while maintaining FERC oversight and agency input. The process completes licensing in as few as six months to allow for project installation, operation, and environmental testing as soon as possible.
Projects eligible to use this process are of limited size, are removable or able to shut down on short notice, and are not located in waters with sensitive designations. The resulting license would be short-term and include rigorous environmental monitoring and safeguards.
» White paper on Hydrokinetic Pilot Project Licensing Process PDF
» Process Flowchart
Contact Information
Edward Abrams
Telephone: 202-502-8773
Email: edward.abrams@ferc.gov
Stephen Bowler
Telephone: 202-502-6861
Email: stephen.bowler@ferc.gov
Prior Technical Conferences
› Technical Conference on Hydrokinetic Technologies Pilot Project Workshop (AD07-14-000), October 2, 2007 Event Details
Hydrokinetic Projects
› Issued Hydrokinetic Projects Preliminary Permits
› Pending Hydrokinetic Projects Preliminary Permits
› Issued & Pending Licenses
› Hydrokinetic Pilot Project Licensing Process

What is NMFS FERC Team Doing?

- Tracking Projects
- NOS/NMFS Multipurpose Marine Cadastre
- Intervening and Comments
- Providing input to development of licenses
  - Stakeholder groups
- Information/webpage development
- Coordinating

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FERC and MMS
Who has jurisdiction on the OCS?

- MMS- In July 2008 issued proposed rule governing alternative energy on the OCS.
- FERC- In August 08, recommended wave and current be removed from rule (FPA grants jurisdiction to issue licenses for private hydroelectric projects in "bodies of water over which Congress has jurisdiction"
- FERC has been issuing licenses and permits for wave and current
- MMS is protesting

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FERC and MMS
Who has jurisdiction on the OCS?

- “Nothing in this subsection displaces, supersedes, limits, or modifies the jurisdiction, responsibility, or authority of any Federal or State agency under any other Federal law." The FPA grants FERC jurisdiction to issue licenses for private hydroelectric projects in "bodies of water over which Congress has jurisdiction" under the Commerce Clause of the U.S. Constitution” EPA 2005

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