

THE PROPOSED LICENSING PROCESS FOR HYDROKINETIC PILOT PROJECTS: A FRAMEWORK FOR DISCUSSION

INTRODUCTION

In order to encourage the development of innovative hydrokinetic technology, the staff of the Federal Energy Regulatory Commission has developed, for public consideration and discussion, a new licensing process that allows pilot projects to be tested, over the short-term, without the need for the full licensing process required by the Commission's regulations under Part I of the Federal Power Act.

Why is Commission staff proposing a pilot project licensing process for the new hydrokinetic technologies?

As stated by Chairman Joseph T. Kelliher, "there are barriers to realizing the potential of these new technologies, including financial, technological, and regulatory. The principal barrier to development of these technologies may be that they are as yet unproven. The technologies must be proven before large scale commercial deployment can occur."

Consistent with the national interest and its own strategic objective to "Stimulate appropriate infrastructure development," the Commission is committed to supporting the orderly demonstration and development of hydrokinetic technology.¹ According to Commissioner Philip Moeller, "This new generation of hydrokinetic technologies...is generating a lot of enthusiasm throughout the country... FERC wants to harness this enthusiasm by exploring ways to reduce the regulatory barriers to realize the amazing potential of this domestic renewable power source."

The hydrokinetic technologies do have significant potential. Estimates are that the new hydrokinetic technologies, if fully developed, could double the amount of hydropower production in the United States, bringing it from just under 10% to close to 20% of the national supply.

Previously, the Commission has determined that experimental deployment of projects testing new hydropower technology may, in certain limited

¹ Federal Energy Regulatory Commission. Strategic Plan FY 2006–FY 2011. (Available at www.ferc.gov.)

circumstances, be possible without a license under Part I of the Federal Power Act.² Now, Commission staff proposes a new pilot project license carefully tailored to meeting the needs of entities interested in testing new technology including interconnection with the electric grid, while minimizing the risk of adverse environmental effects.

How is the environment to be protected given the limited information available about these technologies?

Though information about the potential environmental effects of large-scale deployments of these devices is limited, we believe that pilot projects may be able to be carried out with little risk to public safety and the environment if they meet certain criteria. If the license terms are short and the pilot projects (1) are small, (2) can be shut-down or removed if significant, unforeseen, adverse environmental impacts occur, (3) are confined to appropriate, low-sensitivity sites, and (4) are decommissioned³ with the site restored at the end of the license term, the risks to the environment will be minimal, while the rewards from testing the technology and understanding interactions with the environment will be substantial.

HYDROKINETIC PILOT PROJECT LICENSE

What is the purpose of the proposed licensing process for hydrokinetic pilot projects?

The purpose of the process is to test new hydrokinetic technology devices, to determine the appropriate sites for hydrokinetic projects, and to gather information on environmental and other effects of the devices. The proposal is to complete licensing of hydrokinetic pilot projects in as few as six months; to provide for Commission oversight and agency, tribal, and public input; and to allow developers to realize a revenue stream from generating while testing.

² 111 FERC ¶61,024 and 112 FERC ¶61,143.

³ Decommissioning would be required unless a pilot project licensee applied for a standard license through a full Commission proceeding including National Environmental Policy Act (NEPA) review and participation by all stakeholders.

How does this proposal differ from the policy applied in the Verdant Orders?

The Commission has taken steps previously to promote technological demonstrations. In the *Verdant* orders,⁴ the Commission interpreted the Federal Power Act in a flexible manner that allowed Verdant Power, LLC to implement a pilot project without a license. The Commission concluded that the Verdant Power, LLC could install and test its facilities in the East River without a license if (1) the technology in question was experimental, (2) the proposed facilities were to be utilized for a short period for the purpose of conducting studies necessary to prepare a license application, and (3) power generated from the test project would not be transmitted into, or displace power from, the national grid. In contrast to projects operating under the *Verdant* decision, the proposed pilot process (1) would lead to a pilot license, (2) would be reviewed and overseen by the Commission, (3) would allow the transmission of electricity into the national power grid, and (4) would be available to those who wish to test technology, whether or not they intend to develop a standard license application.

Who may use this process?

This process will be available for projects that are: (1) small (5 MW or less), (2) removable or able to shut down on relatively short notice, (3) not located in waters with sensitive designations, and (4) for the purpose of testing new hydro technologies or determining appropriate sites for hydrokinetic projects.

How does an applicant request the use of this process?

A potential license applicant would file with the Commission a request to use the hydrokinetic pilot project licensing process concurrently with filing a notification of intent and draft application. A request to use a hydrokinetic pilot project process would describe the manner in which the project meets each of the criteria listed in the section, *Criteria For Using The Pilot Licensing Process*, below. The applicant would demonstrate that a reasonable effort has been made to contact and consult with all agencies, Indian tribes, and others affected by the applicant's request. To the extent that parties want to be sure they qualify for the process, Commission staff is available to discuss the proposal before beginning the process.

⁴ 111 FERC ¶61,024 and 112 FERC ¶61,143.

What licensing process will be used?

The Integrated Licensing Process (Part 5 of 18 CFR) will be the regulatory basis of licensing with waivers granted under §5.29(f)(2). With a complete application, a short license term, and strict safeguards, some pre-application studies may be waived in favor of studies and monitoring during the license term. Appendix A provides a general description of the proposed process.

What information is needed in the draft and final license application?

All pilot project license applications would describe the existing environment, details of the project proposal, potential effects of the proposal, proposed monitoring measures, and safeguards in sufficient detail to support the environmental analysis. Most of the content requirements are specified in section 5.18 of the Commission's regulations. However, some of the information required by section 5.18 might not be applicable to some proposed hydrokinetic pilot projects and additional information specific to these new technologies will be needed. Although information needs will vary depending upon site location and technology type, staff has identified some expected additional information needs in Appendix B to supplement the information needs already defined in the Commission's regulations for conventional hydropower projects. These additional information needs include descriptions specific to marine and tidal environments (geology, wildlife, commercial fisheries resources, aesthetics, socioeconomics, and water resources), as well as potential impacts specific to the hydrokinetic technology, construction, installation, operation, and decommissioning (collision risks, exclusion zones, electromagnetic fields, and habitat creation/disturbance/displacement).

What characteristics will a pilot license have?

Commission staff envisions the license having (1) a short license term (5 years), (2) a standard license condition requiring project alteration, shutdown, or removal in the event that monitoring reveals an unacceptable level of environmental, or other effects, (3) the option of applying for a 30-50 year license at the end of the license term; and (4) a standard license condition requiring decommissioning and site restoration at the time of license expiration if the option to apply for a standard license is not exercised. Example proposed standard license articles can be found in Appendix C.

What will be the role of the state and federal agencies, Indian tribes, and other stakeholders in this process?

The Federal Power Act provides state and federal agencies with substantial authority in the Commission's licensing process. The pilot process would not alter any of this authority. However, Commission staff is hopeful that close cooperation between the applicant, agencies and tribes, interested parties, and the Commission, as well as the recognition that pilot projects will be in place for a short time and will be subject to provisions that will ensure environmental protection, will lead to the exercise of all entities' authorities in a manner that will enable the timely authorization of meritorious pilot projects. Under the proposal, stakeholders will have two formal comment opportunities in the Commission's proceeding and the opportunity to provide comments to the applicant on the draft application. Commission staff also will expect the applicant to consult with all participants before filing the draft application. Commission staff is open to comments, concerns, and suggestions from all stakeholders to improve the proposal, foster cooperation, and oversee the orderly and environmentally sound development of these promising technologies.

When is this process available for use?

The pilot process is available now, but we are seeking comments for the purpose of refining aspects of the proposal.

CRITERIA FOR USING THE PILOT LICENSING PROCESS

- 1. Pilot projects will be small.** Staff has proposed five megawatts (MW) of generating capacity as the upper limit for this process.
- 2. The license will be short term.** Staff has proposed a five-year license.
- 3. The pilot project licensing process will not be available to projects that would be located in waters with sensitive designations.** Such projects will be processed using one of the three standard hydropower licensing processes, rather than the pilot process. The determination of whether a proposed pilot project would be located in a sensitive area, will be part of the hydrokinetic pilot project licensing process.
- 4. Pilot project applications must contain adequate information to support environmental analysis.** All pilot project license applications

will describe the existing environment, the details of the project proposal, potential effects of the proposal, proposed monitoring measures, and safeguards in sufficient detail to support the environmental analysis.

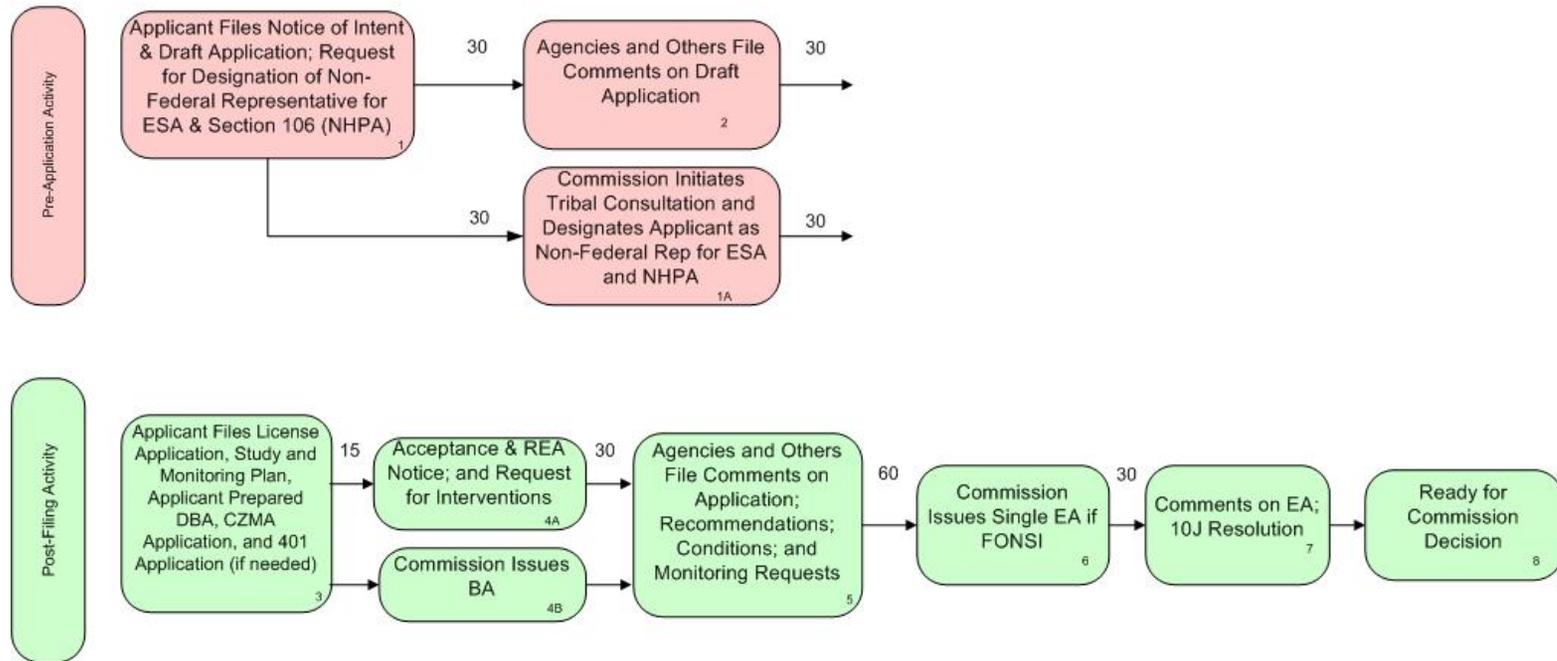
- 5. Pilot projects will be subject to strict environmental and other safeguards potentially leading to project shut-down or complete removal.** Unacceptable environmental effects during the license period, as observed through monitoring protocols required by the license, will lead to project alteration, shut-down, or removal followed by site remediation.

- 6. Pilot project licenses will require decommissioning and the site restoration before the end of the license unless the licensee obtains standard license covering the pilot site.** Pilot project licenses will require that the project be decommissioned and the site remediated as directed by the Commission. If a pilot project licensee opts to apply for a standard license at the end of the pilot project term, continuation of the project will be evaluated in a full Commission proceeding with National Environmental Policy Act (NEPA) review and participation by all stakeholders.

APPENDIX A

Proposed Licensing Process for Hydrokinetic Pilot Projects

Purpose - To develop a pilot project licensing process that can be completed in as few as six months, provides for Commission oversight and agency input, and allows developers to generate while testing.



August 2007

PROCESS PROPOSAL

Box 1

Request for Use of Pilot Process

A potential license applicant would file with the Commission a request to use the hydrokinetic pilot project licensing process concurrent with a notification of intent to apply and a draft application. The request would describe the manner in which the proposal meets each of the criteria for pilot projects, which specify that the proposed project must be: (1) small (5 MW or less); (2) removable or able to shut down on relatively short notice; (3) not located in waters with sensitive designations; and (4) for the purpose of testing new hydro technologies or a particular site. Commission staff proposes that a response would be provided within 15 days.

Notification of Intent

A potential applicant for an original hydrokinetic pilot project license would file a notification of its intent (NOI) to do so. The NOI would describe the type of principal project works to be licensed, including technology type and any transmission lines.

Draft Application

Simultaneously with the filing of its notification of intent and before filing an application (Box 3) for an original hydrokinetic pilot project license, a potential applicant would file with the Commission and distribute to the appropriate federal, state, and interstate resource agencies, Indian tribes, local governments, and members of the public likely to be interested in the proceeding, a draft application. For the proposed requirements of the draft application, please see Appendix B. Note: The Commission may reject the notice of intent and draft application for an original hydrokinetic pilot project license based upon its review of the application's contents and any comments filed.

Requesting Designation as Non-Federal Representative

With its notification of intent and draft application (pre-application document), a potential applicant would also request to be designated as the Commission's non-Federal representative for purposes of consultation under section 7 of the Endangered Species Act. The potential license applicant would at the same time request authorization to initiate consultation under section 106 of the National Historic Preservation Act.

Box 1A - Tribal Consultation and Designation of Non-Federal Representative

Tribal Consultation

Within 30 days of the filing of the notification of intent as described in Box 1, the Commission would solicit tribal consultation with each Indian tribe likely to be affected by the potential license application and if desired Commission staff will meet with the requesting Indian tribes on a mutually agreeable date.

Designations of Non-Federal Representative

Within 30 days of the filing of the notification of intent as described in Box 1 the Commission would designate the potential license applicant as the non-federal representative for the purpose of informal consultation pursuant to section 7 of the Endangered Species Act and authorizing the potential applicant to initiate consultation, under section 106 of the National Historic Preservation Act, with the appropriate State Historic Preservation Officer(s), any Indian tribe likely to be affected by the potential license application, and other interested parties.

Box 2 – Comments on Draft Application

Comments on the draft license application, including any study requests deemed necessary to adequately describe the existing environment or those deemed appropriate for monitoring the proposed project's effects on the environment, would be filed with the Commission and the potential applicant within 30 days following issuance of the notification of intent described in Box 1.

Box 3 - Filing of application

An application for an original hydrokinetic pilot project license would be filed within 60 days following issuance of the notification of intent required by Box 1. The application would include documentation of application submittals for concurrent regulatory processes, such as the Coastal Zone Management Act. The required application content may be found in Appendix B.

To facilitate any necessary consultations pursuant to the ESA, the applicant would file an applicant-prepared draft biological assessment (DBA) with the application.

Box 4A - Notice of acceptance and ready for environmental analysis or rejection

Within 15 days of the filing of a complete license application pursuant to Box 3 above, the Commission would publicly notice the acceptance of the application and that the proposed project is ready for environmental analysis, and

would request interventions and comments, recommendations, and conditions on the project proposal.

Alternatively, if, in the Director's judgment, the application does not conform to the filing requirements of Box 3 or Appendix B, the application would be considered deficient. At the discretion of the Director, a deficient application may be rejected or the applicant may be afforded additional time to correct the deficiencies.

Box 4B – Alternative Issuance of Biological Assessment

Within 15 days of the filing of a complete license application pursuant to Box 3 above, the Commission would, if deemed appropriate, issue the applicant-prepared draft biological assessment, with any modifications deemed necessary by the Commission, as its biological assessment initiating formal ESA consultation. Alternatively, if the Commission found the draft to be inadequate to initiate formal consultation, the Commission would use its NEPA document as its final biological assessment as described in Box 6 below.

Box 5 - Response to notice

Comments, protests, interventions, recommendations, final terms and conditions, and monitoring study requests, as appropriate, would be filed no later than 30 days after the notice of acceptance and ready for environmental analysis.

Box 6 - Issuance of a Single Environmental Assessment

The Commission would issue the single environmental assessment (EA) no later than 60 days from the date responses are due to the notice of acceptance and ready for environmental analysis pursuant to Box 4A above. If the EA results in a "Finding of Significant Impact" pursuant to the National Environmental Policy Act, the Commission would dismiss the application without further action. If the EA results in a "Finding of No Significant Impact" (FONSI) pursuant to the National Environmental Policy Act, the Commission would issue the EA for public comment. Commission staff proposes that each EA issued with a FONSI would include draft license articles, a preliminary determination of consistency of each fish and wildlife agency recommendation made pursuant to Federal Power Act section 10(j), and any mandatory terms and conditions.

If deemed appropriate, the EA will also serve as the Commission's biological assessment for the purpose of section 7 consultation under the Endangered Species Act.

Box 7 – Comments on Single Environmental Assessment and Section 10(j) Process

Comments on Single Environmental Assessment

Comments on an EA issued pursuant to Box 6, including comments in response to the Commission’s preliminary determination with respect to fish and wildlife agency recommendations and on mandatory terms and conditions, would be filed no later than 30 days after issuance of the EA, as specified in the notice accompanying issuance of the single environmental assessment.

Section 10(j) process.

The Commission’s section 10(j) process, allowing state and federal fish and wildlife agencies substantial authority in the Commission’s licensing process would apply. (The 10(j) process is described in section 5.26 of the Commission’s regulations.)

APPENDIX B

§ 5.18 Application Contents

While section 5.18 of the Commission's regulations would apply in its entirety, staff has identified additional information that is specific to hydrokinetic pilot projects, particularly those proposed for the marine environment. Also, staff recognizes that some of the information required by section 5.18 may not be applicable to some proposed hydrokinetic pilot projects. Applicants should explain why any required information is not pertinent to their project.

General description of river basin

- § 5.18(b)(1) – Description of the body of water in which the proposed project will be located, including the location of the proposed project. Information on weather patterns, wave height, current speed, and visibility of the project works from the shoreline.

Cumulative effects

- § 5.18(b)(2) – The list of cumulatively affected resources will be based on consultation and available data.

Applicable laws

- § 5.18(b)(3) – Include a discussion of the status of compliance with or consultation under, if applicable, the *Marine Mammal Protection Act*.

Project location, facilities, and operation

- § 5.18(b)(4)(ii) – Description should include a device schematic and operation diagram, including the physical composition, dimensions, and general configuration of any structures proposed to be included as part of the project or connected directly to it.
- § 5.18(b)(4)(iii) – Description should include water surface area in the project boundary, and, for tidal projects, changes in water surface levels between low and high tides using official tidal datum (i.e. National Geodetic Vertical Datum, Mean High Water, Mean Higher High Water, Mean Low Water, and Mean Lower Low Water).

Proposed action and action alternatives

*Affected Environment*⁵

Geology and Soils

- § 5.6(d)(3)(ii) – Text descriptions, including illustration by maps, showing the seabed/riverbed substrates and the geomorphology of the site for the proposed project and surrounding area.
- § 5.6(d)(3)(ii)(B) – Description of the substrate, including the types, occurrence, physical and chemical characteristics, erodability and potential for mass sediment movement, and likely sediment pathways and areas of erosion and accretion. A description of any potential geologic hazards, including scouring action, slope failure, faulting, tsunamis, fluid and gas expulsion, and irregular topography.

Water Resources

- § 5.6(d)(3)(iii)(B) – The water velocities (feet per second) at the project site that correspond to the minimum, mean, and maximum recorded flows of the stream or other body of water, if applicable. Information on monthly minimum, mean, and maximum recorded temporal current speeds, wave intensities, and wave amplitudes at the proposed project.
- § 5.6(d)(3)(iii)(C) – A monthly water velocity duration curve based on available flow data and the correlation of flow (cubic feet per second) to velocity (feet per second) at the project site. Information on data collection locations and methods and all data used to determine the project's dependable capacity such as temporal wave patterns.
- § 5.6(d)(3)(iii)(G) – Information on vertical profiles of water quality, when applicable, throughout the water column in project area. Information on any toxics in the project transmission system and chemical toxicity of any biofouling coating on project devices.

Fish and Aquatic Resources

- § 5.6(d)(3)(iv) – Description of existing and proposed (construction, installation, operation, and decommissioning) underwater acoustic environment, including estimated decibel levels.
- § 5.6(d)(3)(iv)(C) – The significance of spawning grounds within the project vicinity in regards to spawning habitat availability for said species.

⁵ § 5.18(b)(5)(ii)(A) references § 5.6(d)(3) regarding the requirements for the description of the affected environment.

Wildlife and Botanical Resources

- § 5.6(d)(3)(v) – Description of marine mammal communities. Description of existing and proposed (construction, installation, operation, and decommissioning) above water acoustic environment, including estimated decibel levels.
- § 5.6(d)(3)(v)(B) – Temporal and spatial distribution and seasonal migration patterns of sea bird communities. Temporal and spatial distribution of marine mammal communities, seasonal migration patterns, evaluation of spawning grounds in the project vicinity, including significance of spawning grounds in regards to spawning habitat availability for said species.

Recreation, Land Use, and Ocean Use

- § 5.6(d)(3)(viii) – Description of commercial and recreational fishing grounds in the project vicinity. Information on fishing seasons and gear types used.
- § 5.6(d)(3)(viii)(A) – Description of exclusion zones to ensure public and facility safety, including illustration by maps and drawings of exclusion zones relative to existing recreation and other competing uses.
- § 5.6(d)(3)(viii)(B) – Information on the marking system used to identify project facilities.
- § 5.6(d)(3)(viii)(F)(1) – Proximity to marine sanctuaries and state protected coastal/marine areas.
- § 5.6(d)(3)(viii)(I) and (J) – Description of recreational and non-recreational use and management within, and adjacent to, the project boundary, including shipping channels, navigational channels, marine sanctuaries, and state aquatic lands and including Military Use Areas. Description of proposed navigational safety measures regarding recreational and non-recreational use and management within, and adjacent to, the project boundary.

Aesthetic Resources

- § 5.6(d)(3)(ix) – Description of aesthetic needs for land and water surface components of the project, including safety, navigation, and aesthetic design of components on the water surface and a description of existing and proposed acoustic environment, including estimated decibel levels during project construction, installation, operation, and decommissioning.

Environmental Analysis

- § 5.18(b)(5)(ii)(B) – This section must also include, if applicable, a description of any anticipated environmental impacts of the proposed construction, installation, operation, and decommissioning of the project. This description should be specific to the various resources described in the affected environment section, and should include: 1) any physical disturbance (collision risks of fish, wildlife, and vessels; species specific habitat creation or displacement; increased vessel traffic; exclusion or disturbance of recreation and industry; and navigational safety); 2) any, above or below water, noise disturbance; 3) any electromagnetic field disturbance; 4) any changes in river or tidal flow or wave regime and coastal or geomorphic processes; 5) any accidental contamination from device failures, vessel collisions, and storm damage; and 6) any socioeconomic impacts on the commercial fishing industry from potential loss of harvest.

APPENDIX C

Proposed Standard Pilot License Articles⁶

1. General Environmental Effects Monitoring

The licensee shall, at least 90 days before starting project construction and installation, file for Commission approval, a [*e.g., Marine Mammal, Seabird, or Other Listed or Sensitive Species*] Monitoring Plan to monitor [*e.g., Marine Mammal, Seabird, or Other Listed or Sensitive Species*] behavior and interaction with the in-water project facilities and associated mooring and anchoring systems throughout the pilot license term.

The plan, at a minimum, shall include the following: (a) a detailed description of the methods and equipment that would be used for monitoring [*e.g., Marine Mammal, Seabird, Other Listed or Sensitive Species*] behavior and activity in the vicinity of the in-water facilities; (b) a detailed description of how the monitoring data will be analyzed, with specific criteria by which to evaluate adverse effects; (c) a detailed implementation schedule, including the frequency and timing of data recovery and maintenance of the monitoring equipment; and (d) provisions for identifying, in consultation with the [*Land Management Agency*], [*Affected Indian Tribes*], [*Fish and wildlife agency of the state in which the project is located*], [*state certifying agency*], National Marine Fisheries Service, and U.S. Fish and Wildlife Service remedial measures, if monitoring identifies any adverse changes in behavior or use of ocean habitats.

⁶ The following are proposed standard articles that could be included in pilot project licenses, as appropriate. Articles for addressing certain other in-water or land-based project effects on such resources as aesthetics, recreation, and erosion are not included below, because they would be technology-specific, and therefore, too variable to include as general boilerplate articles for a hydrokinetic pilot license. Generally, engineering, public safety, and administrative articles are not included as some of these requirements may vary with technology and project location. L-Form articles are likewise not included below, because they would depend on the location of the project (*e.g., on navigable versus non-navigable waters, in rivers versus the marine environment, etc.*).

If at any time during monitoring activities, the licensee discovers any project-related condition causing injury or mortality to a [*Listed Species*⁷], the licensee shall immediately follow the reporting and procedural requirements of Article [*Emergency Shutdown and Removal Article*], including immediate shutdown of project operations or removal of project facilities, as appropriate.

An annual report shall be filed with the Commission by December 31 of each year and a copy provided to the aforementioned agencies and tribe(s) describing the monitoring results and any recommendations for modifying the project facilities or commencing the approved decommissioning plan if necessary to minimize adverse effects on environmental resources in the project area. Along with the annual report, the licensee shall include comments from the agencies and tribe(s) and the licensee's responses to any comments.

The monitoring plan shall be developed in consultation with the aforementioned agencies and tribe(s). The licensee shall include with the plan documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to the agencies and tribe(s), and specific descriptions of how the agencies' and tribe's comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies and the tribe(s) to comment and make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Project construction and installation shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

If the monitoring results show that a change in project operations or design or removal of project facilities is necessary to minimize adverse effects on [*Listed Species*], the Commission may direct the licensee to immediately modify project structures or operations or commence removal of the project in accordance with the approved Project Removal Plan.

⁷ These would include federally listed threatened and endangered species and marine mammals afforded protection under the Marine Mammal Protection Act.

2. General Project Facility and Operations Assessment

The licensee shall, at least 90 days before starting project construction and installation, file for Commission approval, an [*e.g., Noise, Electromagnetic Field, Sea Lion Exclusion Device, etc.*] Assessment Plan to determine if [*e.g., the project emits noise or electromagnetic fields at levels that would cause harm to marine mammals, seabirds, or fish; the sea lion exclusion device prevents haul-out onto above-water project facilities; etc.*].

The plan shall include: (a) a detailed description of the methods and equipment that would be used to test and monitor [*e.g., ambient noise levels, project electromagnetic fields, project noise, the effectiveness of exclusion or deterrent devices, etc.*]; (b) a schedule for monitoring that considers [*ocean state conditions, seasonality of species presence/absence, etc.*]; and (c) provisions for filing a report of the results, comments from the consulted agencies and tribe(s), and the licensee's responses to any comments with the Commission and providing copies to the consulted agencies and tribe(s).

If at any time during monitoring activities, the licensee discovers any project-related condition causing injury or mortality to a [*Listed Species*], the licensee shall follow the reporting and procedural requirements of Article [*Emergency Shutdown and Removal Article*], including immediate shutdown of project operations or removal of project facilities, as appropriate.

The monitoring plan shall be developed in consultation with the [*Land Management Agency*], [*Affected Indian Tribes*], [*Fish and wildlife agency of the state in which the project is located*], [*state certifying agency*], National Marine Fisheries Service, and U.S. Fish and Wildlife Service. The licensee shall include with the plan documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to the agencies and tribe(s), and specific descriptions of how the agencies' and tribe's comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies and the tribe(s) to comment and make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Project construction and installation shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

If the monitoring results show that a change in project operations or design or removal of project facilities is necessary to minimize adverse effects on *[Listed Species]*, the Commission may direct the licensee to immediately modify project structures or operations or commence removal of the project in accordance with the approved Project Removal Plan.

3. General Exclusion Zone Plan Article

The licensee shall, at least 90 days before starting project construction and installation, file for Commission approval, a Navigation Exclusion Zone Plan for purposes of protecting the public and project facilities from such events as collisions between commercial and recreational vessels and in-water project facilities; entanglement of fishing gear, anchors, dredging equipment, or other underwater devices that may damage or become entangled with project transmission, anchoring, and mooring lines; and electrocution.

The plan, at a minimum, shall include the following: (a) a provision to designate a navigation exclusion zone around all in-water project facilities at a distance of no less than ____ feet; (b) a provision to clearly mark the extreme corners of the exclusion zone with lights, buoys, or other indicators sufficient to warn vessels of the above and underwater project facilities and associated exclusion zone during both the day and nighttime; (c) a provision to mark all above-water project facilities with fog signals and low-intensity navigation or hazard marking lights visible at a distance of no less than ____ mile; (d) a figure (map) that clearly identifies the project facilities and exclusion zone; (e) a description of the specific activities to be excluded within the zone(s), including fishing, crabbing, anchoring, navigation, or any other activity that could potentially result in damage to the in-water project facilities or private property or injury to the public; and (f) a provision to ensure that all above-water project facilities are colored or otherwise designed in a way that considers the aesthetic resources of the project area as well as the safety of the public and project facilities.

The plan shall be developed in consultation with the U.S. Coast Guard, *[Land Management Agency(ies)]*, *[Affected Indian Tribe(s)]*, and *[Fish and wildlife agency of the state in which the project is located]*. The licensee shall include in the plan documentation of consultation, copies of comments and recommendations on the plan after it has been prepared and provided to the agencies and the tribe(s), and specific descriptions of how the agencies' and tribe's comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies and the tribe(s) to comment prior to filing the plan with

the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Project construction and installation shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

4. Emergency Shutdown and Removal Article

The Commission reserves the authority to require cessation of project operation in the event the Director, Office of Energy Projects (Office Director), determines that it is necessary for the protection of the environment or public life, health, or property.

The licensee shall report by telephone to the Office Director; National Marine Fisheries Service; U.S. Fish and Wildlife Service; *[Land Management Agency]*; *[Fish and wildlife agency of the state in which the project is located]*; *[state certifying agency]*; and *[Indian Tribe (where the project is located on reservation lands)]* any project-related conditions causing or that may cause injury or mortality to a *[listed species]*, no later than 24 hours, after becoming aware of the threat or incident without unduly interfering with any necessary or appropriate emergency response or other action procedure for protecting the affected resource.

Upon initial notification, the licensee shall consult with the Office Director, agencies, and tribes on the immediate course of action to take to prevent injury or minimize the threat to the *[Listed Species]*. The licensee shall propose to the Office Director immediate measures, based on consultation with the resource agencies and tribes, and implement such immediate measures as the Office Director so directs, which may include immediate shutdown of all project operations.

No later than 10 days after becoming aware of any such threat or incident, or on any alternative schedule specified by the Office Director, the licensee shall submit a written report to the aforementioned entities on the condition affecting the *[Listed Species]*. The written report, in addition to any information required by the Office Director at the time of initial contact, shall include the following: (a) the location, date, time, and causes of the condition; (b) a description of any unusual occurrences or operating conditions preceding the condition; (c) an account of any measure taken to immediately alleviate the condition; (d) a detailed description of any injuries or mortalities of the *[Listed Species]*; (e) a detailed

description of the measures recommended by the agencies and tribes; and (f) a detailed description of the measures or actions that would be taken to prevent further occurrences of injury or mortality.

The Commission reserves its right to, at the sole discretion of the Office Director, direct the licensee to commence project removal if no practical course of action can be taken to minimize project-related injuries to or mortality of *[Listed Species]*.

5. General Project Removal Plan Article

The licensee shall, at least 180 days before starting project construction and installation, file for Commission approval a Project Removal Plan.

The plan, at a minimum, shall include the following: (a) a detailed description of the procedures to be employed to remove all licensed project facilities and associated equipment as directed by the Commission in accordance with the requirements of this pilot license; (b) an analysis of all potential environmental effects associated with project removal utilizing the procedures identified in part (a) above; (c) site-specific revegetation measures for the disturbed land areas associated with removal of any shore-based project facilities; (d) a provision to monitor for seabed disturbances during removal of all in-water project facilities; (e) a provision to monitor the effects of the removal activities on federally listed threatened and endangered aquatic, terrestrial, or avian species, as applicable; (f) a provision to restore all project lands (including submerged lands) to pre-project conditions and to the satisfaction of the *[Land Management Agency]*, *[Indian Tribe (where reservation lands involved)]*, and the Commission; (g) an implementation schedule; and (h) an estimated cost for removal of all project-related facilities and site restoration.

The licensee shall prepare the plan after consultation with the *[Land Management Agency]*, *[Affected Indian Tribe]*, *[Fish and wildlife agency of the state in which the project is located]*, *[state certifying agency]*, National Marine Fisheries Service, and U.S. Fish and Wildlife Service. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies and tribe, and specific descriptions of how the agencies' and tribe's comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies and the tribe to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a

recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Project construction and installation shall not begin until the licensee is notified by the Commission that the plan is approved. The licensee shall implement the plan, according to the approved schedule, including any changes required by the Commission.

6. General Financial Assurance Article

The licensee shall, at least 90 days before commencing project construction and installation, file proof of the purchase of a surety bond, or equivalent financial assurance (*e.g.*, insurance, corporate guarantee, letter of credit, fully funded trust fund, etc.), to cover the entirety of the costs of removing the project in accordance with the Project Removal Plan required by this pilot license. Thereafter during the term of the license, the licensee shall maintain the bond, or equivalent financial assurance. By January 1 of each license year, or as otherwise directed by the Commission or its authorized representative, the licensee shall file proof of the maintenance of the bond, or equivalent financial assurance.

Failure to commence project removal in accordance with the procedures and timeframes authorized by the approved plan constitutes cause for the Commission to issue a demand letter to the surety for the amount required to satisfy all of the requirements of the project removal plan. Payment by the surety of the amount required by a bond is due upon receipt of the demand letter. In lieu of payment, the surety may perform the requirements of the plan under written instructions from the Commission, or its authorized representative within the timeframe set forth in the instructions.

The licensee agrees that all monies paid by the surety, upon failure on the licensee's part to fulfill the requirements of the approved plan, may be retained by the United States to be applied to the satisfaction of the licensee's obligations under the plan, without prejudice to any other rights and remedies of the United States.