

138 FERC ¶ 62,168  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Ocean Renewable Power Company Maine, LLC

Project No. 12711-005

ORDER ISSUING PILOT PROJECT LICENSE  
(MINOR PROJECT)

(February 27, 2012)

INTRODUCTION

1. On September 1, 2011, Ocean Renewable Power Company Maine, LLC (ORPC Maine) filed, pursuant to Part I of the Federal Power Act (FPA),<sup>1</sup> an application for an 8-year pilot project license to construct, operate, and maintain its proposed Cobscook Bay Tidal Energy Project No. 12711 (Cobscook Bay Project or project). The 300-kilowatt (kW) project will be located in Cobscook Bay in Washington County, Maine.<sup>2</sup>
2. Commission staff developed the hydrokinetic pilot project licensing process from the Integrated Licensing Process to meet the needs of entities, such as ORPC Maine, who are interested in testing new hydropower technologies while minimizing the risk of adverse environmental impacts. The goal of the process is to allow developers to test new hydrokinetic technologies, to determine appropriate sites for these technologies, and to confirm the technology's environmental and other effects without compromising the Commission's oversight of the projects or limiting agency and stakeholder input.
3. As outlined in the Commission staff's pilot project licensing process white paper,<sup>3</sup> a pilot project should be (1) small, (2) short term, (3) located in non-sensitive areas based on the Commission's review of the record, (4) removable and able to be shut down on short notice, (5) removed, with the site restored, before the end of the license term (unless a new license is granted), and (6) initiated by a draft application in a form sufficient to

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<sup>1</sup> 16 U.S.C. §§ 791a-828c (2006).

<sup>2</sup> Pursuant to section 23(b)(1) of the FPA, 16 U.S.C. § 817(1) (2006), the project is required to be licensed because it is located in navigable waters of the United States.

<sup>3</sup> See FERC, Federal Energy Regulatory Commission Licensing Hydrokinetic Pilot Projects, available at [http://www.ferc.gov/industries/hydropower/gen-info/licensing/hydrokinetics/pdf/white\\_paper.pdf](http://www.ferc.gov/industries/hydropower/gen-info/licensing/hydrokinetics/pdf/white_paper.pdf) (issued April 14, 2008).

support environmental analysis. After review of ORPC Maine's pilot project application, staff concluded that ORPC Maine's proposal meets these criteria.

4. As discussed below, this order issues a pilot project license for the project.

## BACKGROUND

5. The Commission issued public notice of the application, accepting the pilot project license application, soliciting motions to intervene and protests, and soliciting comments, final recommendations, terms and conditions, and prescriptions on October 6, 2011.<sup>4</sup> The U.S. Department of the Interior (Interior) and National Marine Fisheries Service (NMFS) filed timely notices of intervention and the Maine State Planning Office (Maine SPO) filed a motion to intervene out of time.<sup>5</sup> Interior, NMFS, and the Maine Department of Marine Resources (Maine DMR) filed comments on the application. On December 1, 2011, ORPC Maine filed a response to the agencies' comments.

6. An Environmental Assessment (EA) was prepared by Commission staff and issued on January 4, 2012. The U.S. Fish and Wildlife Service (FWS), U.S. Coast Guard (Coast Guard), NMFS, and the National Park Service (Park Service) filed comments on the EA.

7. The interventions, comments, and recommendations have been fully considered in determining whether, and under what conditions, to issue this license.

## PROJECT DESCRIPTION

### A. Project Area

8. The project will be located in Cobscook Bay north and east of Seaward Neck and west of Shackford Head State Park in Eastport, Maine. Cobscook Bay marks the entrance to the Bay of Fundy, which features the highest tidal range in the world, averaging 39 feet, with the Eastport area averaging 20 feet. Cobscook Bay is a relatively shallow inundated river valley with an average depth of 98.4 feet mean low water (MLW),<sup>6</sup> with its deepest point being 146.6 feet MLW. The surface area during high tide is approximately 42.5 square miles, with 201.9 miles of shoreline.

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<sup>4</sup> 76 Fed. Reg. 63917 (2011).

<sup>5</sup> Under Rule 214(a)(2) of the Commission's Rules of Practice and Procedure, Interior and NMFS became parties to the proceeding upon timely filing of their notices of intervention. *See* 18 C.F.R. § 385.214(a)(2) (2011). Maine SPO's motion to intervene out of time was granted by the Commission in a notice issued on December 8, 2011.

<sup>6</sup> MLW is a tidal datum that represents the average of all low water elevations.

## **B. Project Facilities**

9. The Cobscook Bay Project will use the tidal currents of Cobscook Bay to generate electricity via cross-flow Kinetic System turbine generator units (TGUs) mounted on the sea floor. ORPC Maine's TidGen™ Power System, which consists of the TGUs, bottom support frames, and underwater power and data (P&D) cable, will capture energy from the flow in both ebb and flood directions.

10. Installation of the Cobscook Bay Project will consist of two phases: (1) Phase 1 – a single, approximately 98.5-foot-long, cross-flow Kinetic System TGU mounted on a bottom support frame, with a rated capacity of 60 kW, installed in year 1; (2) Phase 2 – four additional, approximately 98.5-foot-long, TGUs mounted on bottom support frames, with a total installed capacity of 300 kW, installed in year 2; (3) a direct current P&D cable approximately 4,150 feet long (3,750 feet underwater and 400 feet on shore) extending from the TGUs to the on-shore station house; (4) an on-shore station house 16 feet wide by 20 feet long, housing the power inverter and the supervisory control and data acquisition (SCADA) system; (5) a transformer located adjacent to the station house; (6) a 60-foot-long transmission line connecting with the Bangor Hydro Electric Company transmission system; and (7) appurtenant facilities for navigation safety and operation. The pilot project is estimated to have an annual generation of 1.25 gigawatt-hours (GWh) after the completion of Phase 2.

## **C. Project Boundary**

11. The project boundary includes an approximately 375-foot-wide corridor that extends approximately 2,000 feet from the northern shoreline of Lubec, Maine into Cobscook Bay and connects with an approximately 1,000-foot by 1,800-foot area that encompasses the project's TidGen™ Power System. The project boundary encloses 63.3 acres, which includes 62.6 acres of underwater land and 0.7 acre of terrestrial land for the on-shore station and underground P&D cable.

## **D. Proposed Project Operation**

12. The project's TidGen™ Power System is designed to generate electricity over a range of water currents, operating in a stationary orientation in both ebb and flood tides.

13. The turbine is the ORPC Maine proprietary advanced design cross flow turbine with multiple twisted foils attached by spokes to the shaft about which the turbine rotates. The turbine converts the kinetic energy of water flowing in currents from 0 to 3 meters per second into rotational motion and delivers that energy through a shaft into the stub shaft of the permanent magnet generator.

14. A computer will monitor generator status and performance for each turbine in the overall array. This equipment will be housed in the on-shore modular building and will be used for power accounting and maintenance indications.

### **E. Proposed Project Maintenance**

15. Although the TidGen™ Power System is designed to operate reliably with low maintenance demands, ORPC Maine proposes to implement a Project Inspection and Maintenance Plan. The plan consists of three components: 1) visual inspections; 2) minor maintenance; and 3) major maintenance. The equipment and facilities that will be inspected include the TGUs, bottom support frames, underwater P&D cables, and the on-shore station.

16. The visual inspections of the on-shore station will occur on a monthly basis and a diver will be used for the underwater visual inspections of the TidGen™ Power System. During minor maintenance inspections, the TGU will be raised off of the pilings to the surface and inspected on the barge above the deployment site to facilitate a closer examination, and minor adjustments and repairs will be carried out on the barge. Major maintenance to the TGUs and other equipment will be scheduled annually, with additional maintenance conducted as necessary based on the underwater visual inspections or simple maintenance inspections. For major maintenance, the equipment will be raised to the surface and brought on a barge to shore.

17. Inspection and maintenance documentation will be integral to the early years of the project as standard maintenance intervals are developed for the TidGen™ Power System. All inspections and maintenance will be documented prior to and following the maintenance event.

### **F. Proposed Safety Plans**

18. To address safety concerns with the technology, ORPC Maine is proposing: 1) a Project Operations and Monitoring Plan; 2) a Project Inspection and Maintenance Plan; 3) a Project and Public Safety Plan; 4) a Navigation Safety Plan; 5) an Emergency Shutdown Plan; and 6) a Project Removal and Site Restoration Plan.<sup>7</sup>

### **G. Proposed Environmental Measures**

19. In addition to the above plans, ORPC Maine proposes to construct and operate the project with the following environmental protection, mitigation, and enhancement measures: (1) implement an Acoustic Monitoring Plan; (2) implement a Benthic and Biofouling Monitoring Plan; (3) implement a Fisheries and Marine Life Interaction

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<sup>7</sup> The Project Removal and Site Restoration Plan addresses the pilot project licensing requirement that the licensee remove the project and restore the site at the end of the license term if a new license is not obtained. ORPC Maine plans to determine whether it will pursue a new license based on the results of the pilot project operation and monitoring.

Monitoring Plan; (4) implement a Hydraulic Monitoring Plan; (5) implement the Marine Mammal Monitoring Plan; (6) implement a Bird Monitoring Plan; (7) maintain an information center at the ORPC Maine office in Eastport, Maine that includes educational displays and informational brochures; and (8) for land-based facilities, select non-reflective colors that blend with the natural landscape and develop design guidelines for future project improvements.

## SUMMARY OF LICENSE REQUIREMENTS

20. As summarized below, this license, which authorizes 300 kW of renewable energy generating capacity, requires a number of measures to protect and enhance fish, wildlife, cultural, and aesthetic resources at the project.
21. To ensure public safety, the license requires ORPC Maine to implement its Project Operations and Monitoring Plan and Project Inspection and Maintenance Plan, which include procedures for monitoring project operation and visually inspecting and maintaining facilities; its Project and Public Safety Plan, which includes measures for identifying and responding to emergencies at the project; its Navigation Safety Plan, which includes measures to provide navigational markers and an exclusion zone around the project; and its Emergency Shutdown Plan, which includes procedures for the remote shutdown of the project turbines in response to emergencies at the project.
22. To ensure the protection of aesthetic and environmental resources in and around Cobscook Bay, the license requires ORPC Maine to implement its Project Removal and Site Restoration Plan, which includes measures for removing the project and restoring the project site in the case that a new license is not obtained at the end of the pilot project license term.
23. To identify any unanticipated adverse effects of the project on scouring or sediment processes and provide an increased understanding of the effects of the project on the hydrodynamics in Cobscook Bay during each phase of deployment, the license requires ORPC Maine to implement its Hydraulic Monitoring Plan, which includes the measurement of tidal velocities and visual and geophysical surveys of the seafloor in the project deployment area.
24. To avoid any adverse effects to marine mammals and Atlantic salmon due to project construction, the license requires ORPC Maine to restrict pile driving activities associated with project construction between April 10 and November 7 of any year.
25. To identify and characterize noise radiated by the project, the license requires ORPC Maine to implement its Acoustic Monitoring Plan, which includes the use of a drifting noise measurement system to measure noise related to project construction and operation.

26. To ensure recovery of the benthic community from construction-related disturbance in the project area, the license requires ORPC Maine to implement its Benthic and Biofouling Monitoring Plan, which includes benthic surveys of the P&D cable burial route and regular inspections of project equipment for biofouling.
27. To quantify any unanticipated adverse effects of the project on fish and marine mammal behavior, the license requires ORPC Maine to implement its Fisheries and Marine Life Interaction Plan and Marine Mammal Monitoring Plan, which include measures to identify the use of the project area by fish and marine mammals.
28. To ensure that bald eagles in Cobscook Bay are protected from any adverse effects due to the project, the license requires ORPC Maine to follow the U.S. Fish and Wildlife Service's (FWS) *Bald Eagle Management Guidelines* during project construction and operation.
29. To minimize any effects of the project on birds, the license requires ORPC Maine to implement its Bird Monitoring Plan, which includes measures to observe the species, numbers, and behavior of birds in the project area.
30. To ensure that the monitoring plans gather sufficient data to allow for the evaluation of the potential effects of the Cobscook Bay Project, the license requires ORPC Maine to develop and implement an Adaptive Management Plan that includes protocols for consultation and any necessary modifications to the monitoring plans.
31. To enable the public to learn more about the new area of tidal energy development that the Cobscook Bay Project represents, the license requires ORPC Maine to install an interpretive display within the project boundary near the on-shore station house.
32. To minimize any aesthetic impact, the license requires ORPC Maine to design all land-based facilities as low-profile structures to minimize and to maintain the aesthetic values of the project area through the selection of materials and non-reflective colors that blend with the natural landscape.
33. To ensure protection of any cultural resources in the project area, the license requires ORPC Maine to consult with the Maine SHPO regarding unanticipated discoveries of cultural materials or human remains during construction activities and over the license term, and regarding any new post-construction land-clearing or ground-disturbing activities undertaken in the future.

## WATER QUALITY CERTIFICATION

34. In instances where the Clean Water Act (CWA) applies, section 401(d) of the CWA<sup>8</sup> provides that, where the state water quality certifying agency has issued a water quality certification for a proposed hydroelectric project, the certification shall become a condition of any federal license that authorizes construction or operation of the project.<sup>9</sup>

35. ORPC Maine submitted an application for certification with the Maine Department of Environmental Protection (Maine DEP) on September 9, 2011. On January 31, 2012, the Maine DEP issued a certification for the Cobscook Bay Project. The certification contains 10 general conditions that apply to hydropower projects (discussed below).

36. Condition 1 limits the certification approval to the proposals and plans contained in the certification application and supporting documents, with any variances from the plans and proposals subject to the review and approval of the Maine DEP prior to implementation. Condition 2 stipulates that the terms of the certification shall be considered to have been violated if the project is found at any time to not be in compliance with any of the certification conditions, or should ORPC Maine construct or operate the project in any way other than specified in the certification application and supporting documents, as modified by the conditions of the certification. Condition 3 requires ORPC Maine to secure and appropriately comply with all applicable federal, state, and local licenses, permits, authorizations, conditions, agreements, and orders prior to or during construction and operation. Condition 4 requires that authorized representatives of the Maine DEP or Attorney General be granted access to the project site at any reasonable time for the purpose of inspecting the construction or operation of the project and assuring compliance by ORPC Maine with the certification conditions.

37. Condition 5 stipulates that the certification will lapse if project construction is not commenced within 3 years and completed within 7 years from the date of certification issuance, unless a request for an extension of these deadlines has been approved by the Maine DEP. Condition 6 requires ORPC Maine to submit a final construction schedule for the project to the Maine DEP prior to construction. Condition 7 requires ORPC Maine to include a copy of the certification in any contract bid specifications for the project. Condition 8 requires that a copy of the certification be shown to any contractor prior to the contractor commencing any work related to the project. Condition 9 requires

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<sup>8</sup> 33 U.S.C. § 1341(d) (2006).

<sup>9</sup> Some hydrokinetic projects may not involve discharges into the navigable waters, in which case section 401 will not apply.

ORPC Maine to notify the Maine DEP at least 10 days prior to the commencement of project operation.

38. Condition 10 specifies that the certification expires upon the assignment or transfer of the project unless written consent to transfer the certification is obtained from the Maine DEP and provides guidance on how to obtain such consent.

39. Conditions 5 and 10 would allow for termination of the certification under certain conditions. The CWA requires a water quality certification in order for the Commission to *issue* a license. There is no requirement that a licensee seek a certification during the term of its license, absent ORPC Maine seeking an amendment to its project that would require a certification. Therefore, any termination of the certification during the license term would end the conditions of the certification, but would have no effect on the validity of the license.

40. All 10 conditions of the certification are set forth in Appendix A of this order and incorporated into the license (*see* Ordering Paragraph (E)).

#### COASTAL ZONE MANAGEMENT ACT

41. Under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA), the Commission cannot issue a license for a project within or affecting a state's coastal zone unless the state CZMA agency concurs with the license applicant's certification of consistency with the state's CZMA program, or the agency's concurrence is conclusively presumed by its failure to act within six months of its receipt of the applicant's certification.<sup>10</sup>

42. On September 20, 2011, ORPC Maine submitted a request for consistency determination to the Maine State Planning Office (Maine SPO). By letter dated February 1, 2012, the Maine SPO issued ORPC Maine the final determination of consistency with the Maine Coastal Management Program, in which it concurred with ORPC Maine's consistency certification.

#### SECTION 18 FISHWAY PRESCRIPTIONS

43. Section 18 of the FPA<sup>11</sup> provides that the Commission shall require the construction, maintenance, and operation by a licensee of such fishways as may be prescribed by the Secretary of the Interior or the Secretary of Commerce, as appropriate. By letter filed November 7, 2011, Interior requested that the Commission reserve

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<sup>10</sup> 16 U.S.C. § 1456(3)(A) (2006).

<sup>11</sup> 16 U.S.C. § 811 (2006).

authority to prescribe fishways. Consistent with Commission policy, Article 408 of this license reserves the Commission's authority to require fishways that may be prescribed by Interior for the Cobscook Bay Project.

#### THREATENED AND ENDANGERED SPECIES

44. Section 7(a)(2) of the Endangered Species Act of 1973<sup>12</sup> (ESA) requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species, or result in the destruction or adverse modification of their designated critical habitat.

45. There is one federally listed species with the potential to occur in the project area, the Atlantic salmon. The Atlantic sturgeon, a species proposed for listing as endangered, may also occur in the project area.<sup>13</sup> Commission staff concluded in the biological assessment (BA) issued September 16, 2011, that licensing the Cobscook Bay Project is not likely to adversely affect the Atlantic salmon and is not likely to jeopardize the Atlantic sturgeon. NMFS concurred with this finding by letter filed November 4, 2011.

#### MARINE MAMMAL PROTECTION ACT

46. The Marine Mammal Protection Act (MMPA)<sup>14</sup> prohibits, with certain exceptions, the "take" (defined under the statute as actions that are or may be lethal, injurious, or harassing<sup>15</sup>) of marine mammals in U.S. waters and the high seas. The MMPA includes a

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<sup>12</sup> 16 U.S.C. § 1536(a) (2006).

<sup>13</sup> On February 6, 2012, NMFS issued a final determination to list the Gulf of Maine Distinct Population Segment of Atlantic sturgeon as a threatened species under ESA, with the rule becoming effective on April 6, 2012. Pursuant to Ordering Paragraph (F), this license is subject to the standard license articles set forth in Form L-14 (October 1975), entitled, "Terms and Conditions of License for Unconstructed Minor Project Affecting Navigable Waters of the United States." Standard Article 11 requires the licensee to comply with any reasonable modifications of the project structures and operation, as may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior, Secretary of Commerce, or state fish and wildlife agency or agencies, after notice and opportunity for hearing. Standard Article 11 will provide NMFS the opportunity to request modifications to the project after license issuance if it determines that any such modifications are necessary based on the listing of Atlantic sturgeon as a threatened species under ESA.

<sup>14</sup> 16 U.S.C. §§ 1361 *et seq.* (2006).

<sup>15</sup> "Harassment" is defined as "any act of pursuit, torment, or annoyance that has the potential to: (1) injure a marine mammal or marine mammal stock in the wild; or  
(continued)

mechanism for allowing, upon request, the incidental taking of small numbers of marine mammals by U.S. citizens engaged in a specified activity within a specified geographical region.<sup>16</sup> Take authorization is granted through either a letter of authorization, or conditions contained in an incidental harassment authorization.<sup>17</sup>

47. Gray seal, harbor seal, harbor porpoise, and Atlantic white-sided dolphin, none of which are ESA-listed species, are expected to occur in the vicinity of the Cobscook Bay Project. Commission staff found in the EA<sup>18</sup> that the proposed action may adversely affect marine mammals due to noise related to the pile driving phase of construction. Subsequently, ORPC Maine is negotiating an incidental harassment authorization with NMFS for construction activities associated with the Phase 1 deployment. Consequently, ORPC Maine must work with NMFS to satisfy the requirements of the MMPA.

#### ESSENTIAL FISH HABITAT PROGRAM

48. Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act<sup>19</sup> (Magnuson-Stevens Act) requires federal agencies to consult with the Secretary of Commerce regarding any action or proposed action authorized, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat (EFH) identified under the Act. Under section 305(b)(4)(A) of the Magnuson-Stevens Act, NMFS is required to provide EFH conservation recommendations for actions that would adversely affect EFH.<sup>20</sup> Under section 305(b)(4)(B) of the Magnuson-Stevens Act, an

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(2) disturb a marine mammal or marine mammal stock in the wild by causing a disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but which does not have the potential to injure a marine mammal or mammal stock in the wild. *See* 50 C.F.R. § 216.3 (2011).

<sup>16</sup> 16 U.S.C. § 1371(a)(5) (2006).

<sup>17</sup> An incidental harassment authorization, valid for one year, is an expedited process to authorize the incidental take of small numbers of marine mammals by harassment, which includes actions that have the potential to disturb a marine mammal by causing disruption of behavioral patterns, including migration, breathing, nursing, breeding, feeding, or sheltering, but which does not have the potential to seriously injure the mammal. 50 C.F.R. § 216.3 (2011). A letter of authorization is valid for five years and authorizes harassment that has the potential to injure a marine mammal.

<sup>18</sup> *See* EA at 23 and 80-81.

<sup>19</sup> 16 U.S.C. § 1855(b)(2) (2006).

<sup>20</sup> 16 U.S.C. § 1855(b)(4)(A) (2006).

agency must, within 30 days after receiving recommended conservation measures from NMFS or a Regional Fishery Management Council, describe the measures proposed by the agency for avoiding, mitigating, or offsetting the effects of the agency's activity on the EFH.<sup>21</sup>

49. The Cobscook Bay Project area contains EFH for a number of species/life stages. Information pertaining to project effects on EFH was provided in an EFH assessment prepared by ORPC Maine and included in the final license application. In a letter filed November 4, 2011, NMFS concluded that the EFH assessment is suitable for addressing its needs for the Cobscook Bay Project and provided eight conservation recommendations pursuant to section 305(b)(4)(a) of the Magnuson-Stevens Act.

50. The eight conservation recommendations filed by NMFS are to: 1) incorporate the environmental monitoring, safety, and removal and restoration plans as license requirements; 2) meet the technical goals and objectives of each installation phase before proceeding to the next phase; 3) meet the environmental goals and objectives of each installation phase before proceeding to the next phase; 4) file an annual report with FERC and other state and federal resource agencies that details the progress, data, and status of all monitoring during that year; 5) continue consultation with NMFS and other state and federal resource agencies; 6) bury the P&D cable by means of trenching in the intertidal zone (above mean lower low water (MLLW))<sup>22</sup> and restore all gravel and cobble habitat to preconstruction condition before beginning operation; 7) bury the P&D cable by means of a jet plow below MLLW and restrict jet plow activities from April 10 through November 7 of any year; and 8) restrict pile driving activities from April 10 through November 7 of any year.

51. Commission staff found in the EA that the proposed action would not likely adversely affect EFH for any of the 15 species with designated EFH located in the project area.<sup>23</sup> In a letter filed on February 2, 2012, NMFS stated that it believes that the project may adversely affect federally managed species and designated EFH due to the significant unknowns regarding the temporal nature of construction-related impacts, the effects of the physical presence of the project, and project operation. However, NMFS

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<sup>21</sup> 16 U.S.C. § 1855(b)(4)(B) (2006). The measures recommended by the Secretary of Commerce are advisory, not prescriptive. However, if the federal agency does not agree with the recommendations, the agency must explain its reasons for not following the recommendations.

<sup>22</sup> MLLW is a tidal datum that represents the average of the lower low water height of each tidal day observed.

<sup>23</sup> See EA at 24 and 78-79.

further states that its conservation recommendations were adequately addressed in the EA and no further consultation under the Magnuson-Stevens Act is required.

52. This license generally adopts all of the conservation recommendations filed by NMFS. Due to NMFS also filing these recommendations under section 10(j) of the FPA, they are each addressed in further detail below in the discussion of section 10(j) and section 10(a) recommendations.

#### NATIONAL HISTORIC PRESERVATION ACT

53. Under section 106 of the National Historic Preservation Act (NHPA),<sup>24</sup> and its implementing regulations,<sup>25</sup> federal agencies must take into account the effect of any proposed undertaking on properties listed or eligible for listing in the National Register (defined as historic properties) and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking. This generally requires the Commission to consult with the State Historic Preservation Officer (SHPO) to determine whether and how a proposed action may affect historic properties, and to seek ways to avoid or minimize any adverse effects.

54. In an August 7, 2009 letter, the Commission designated ORPC Maine as its non-federal representative for the purposes of conducting section 106 consultation under the NHPA. Pursuant to section 106, and as the Commission's designated non-federal representative, ORPC Maine consulted with the Maine SHPO to locate, determine National Register eligibility, and assess potential adverse effects to cultural resources associated with the project. In letters dated August 5, 2011 and August 27, 2011, the Maine SHPO concluded that no cultural resources would be affected by the federal licensing action. As a result of this finding that no cultural resources would be affected by the project, Commission staff found in the EA that the drafting of a programmatic agreement to resolve adverse effects to historic properties was not necessary.<sup>26</sup> However, to ensure the proper treatment of any cultural resources that may be discovered during the course of constructing or developing project works or other facilities at the project, Article 416 requires the licensee to stop all land-clearing and land-disturbing activities in the vicinity of any discovered cultural resources and consult with the Maine SHPO.

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<sup>24</sup> 16 U.S.C. § 470 (2006).

<sup>25</sup> 36 C.F.R. Part 800 (2011).

<sup>26</sup> See EA at 25 and 126.

## RECOMMENDATIONS OF STATE AND FEDERAL FISH AND WILDLIFE AGENCIES PURSUANT TO SECTION 10(J) OF THE FPA

55. Section 10(j) of the FPA<sup>27</sup> requires the Commission, when issuing a license, to include conditions based on recommendations by federal and state fish and wildlife agencies submitted pursuant to the Fish and Wildlife Coordination Act,<sup>28</sup> to “adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)” affected by the project.

56. In response to the October 6, 2011, public notice that the project was ready for environmental analysis, NMFS filed eight recommendations under section 10(j).<sup>29</sup> Three recommendations were determined to be outside the scope of section 10(j) and are discussed in the next section. This license includes conditions consistent with the remaining five recommendations that are within the scope of section 10(j). This includes: (1) the recommendation to implement the environmental monitoring plans proposed by ORPC Maine (Acoustic Monitoring Plan (Article 405), Benthic and Biofouling Monitoring Plan (Article 406), Fisheries and Marine Life Interaction Plan (Article 407), Hydraulic Monitoring Plan (Article 409), Marine Mammal Monitoring Plan (Article 410), and Bird Monitoring Plan (Article 412));<sup>30</sup> (2) the recommendation to meet the environmental monitoring goals and objectives of Phase 1 deployment and complete the phase before proceeding to Phase 2 deployment, which is addressed in the development of an Adaptive Management Plan (Article 404);<sup>31</sup> (3) the recommendation to bury the P&D cable by means of trenching within the intertidal zone (above MLLW) and restoring all gravel and cobble habitat to pre-construction condition prior to the commencement of project operation (Article 403); (4) the recommendation to bury the P&D cable by means

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<sup>27</sup> 16 U.S.C. § 803(j)(1) (2006).

<sup>28</sup> 16 U.S.C. §§ 661-667e (2006).

<sup>29</sup> NMFS filed the recommendations on November 4, 2011.

<sup>30</sup> This recommendation also included the implementation of the safety and removal and restoration plans proposed by ORPC Maine. As these plans are not within the scope of section 10(j), they are discussed in the next section.

<sup>31</sup> In its comments on the EA, NMFS specified that the Adaptive Management Plan should be developed in consultation with the appropriate state and federal agencies, providing them a draft for review at least 45 days prior to filing it with the Commission for approval, and including any agency comments, along with an explanation of how they are addressed, with the plan when it is filed. The consultation requirements specified in Article 404 are consistent with NMFS’ recommendation.

of a shear plow<sup>32</sup> below MLLW (Article 403); and (5) the recommendation to restrict pile driving activities from April 10 to November 7 of any year (Article 402).

## SECTION 10(A) OF THE FPA

57. Section 10(a) of the FPA<sup>33</sup> requires that any project for which the Commission issues a license shall be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce; for the improvement and utilization of waterpower development; for the adequate protection, mitigation, and enhancement of fish and wildlife; and for other beneficial public uses, including irrigation, flood control, water supply, recreation, and other purposes.

58. ORPC Maine's proposed operation and environmental measures are described throughout its 14 environmental monitoring and safeguard plans. The following section discusses modifications to these plans recommended by agencies, commenters, stakeholders, and Commission staff.

### **A. NMFS Recommendations**

59. NMFS made three recommendations under section 10(j) that are not specific measures to protect, mitigate damages to, or enhance fish and wildlife. Consequently, these recommendations were not considered under section 10(j) of the FPA. NMFS also made one recommendation that was partially considered under section 10(j) and discussed above (implementation of the environmental monitoring plans), but also included a component (implementation of the safety and removal and restoration plans) that was not considered under section 10(j). These recommendations, and components of recommendations, that were not considered under section 10(j) were instead considered under the broad public-interest standard of section 10(a)(1).<sup>34</sup>

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<sup>32</sup> NMFS initially recommended that ORPC Maine use a jet plow to bury the P&D cable below MLLW and that jet plow activities should not occur between April 10 and November 7 of any year. In a letter filed on February 7, 2012, NMFS modified its recommendation to allow for the use of a shear plow without a restrictive period because it anticipates that the shear plow will reduce both the intensity and duration of the effects caused by the cable burial operation and any effects to Atlantic salmon associated with a shear plow are expected to be insignificant.

<sup>33</sup> 16 U.S.C. § 803(a)(1) (2006).

<sup>34</sup> 16 U.S.C. § 803(a)(1) (2006).

60. NMFS recommended that ORPC Maine meet the technical goals and objectives of Phase 1 deployment and complete that phase before proceeding to Phase 2 deployment. Article 404 requires the licensee to develop and implement an Adaptive Management Plan that includes a provision for consultation and Commission approval on the effectiveness of monitoring and the operation of the project in Phase 1 prior to commencing Phase 2 deployment.

61. NMFS recommended that ORPC Maine continue to consult with NMFS and other state and federal agencies to guide adaptive management measures. Article 404 requires ORPC Maine to develop an Adaptive Management Plan in consultation with state and federal agencies, including NMFS, that specifies the protocols for consultation and any subsequent modifications associated with the adaptive management strategy integral to each of the environmental monitoring plans.

62. NMFS recommended that ORPC Maine develop an annual report that details the progress, data, and status of all of the required environmental monitoring plans. In the EA, staff noted that it prefers to receive individual reports for each monitoring plan, as proposed by ORPC Maine, as opposed to a single report for all of them, as recommended by NMFS.<sup>35</sup> As such, this license requires the licensee to file individual reports for each monitoring plan.

63. NMFS recommended that ORPC Maine implement its proposed safety and removal and restoration plans (safeguard plans). In the EA, staff noted that the implementation of the proposed safeguard plans would ensure that the project operates safely and the public is protected.<sup>36</sup> As such, this license approves ORPC Maine's Project Operations and Monitoring Plan (Article 305), Project Inspection and Maintenance Plan (Article 306), Project and Public Safety Plan (Article 307), Emergency Shutdown Plan (Article 308), and Navigation Safety Plan (Article 309).<sup>37</sup> Article 401 of

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<sup>35</sup> See EA at 150.

<sup>36</sup> See EA at 31.

<sup>37</sup> In its comments on the EA, the Coast Guard stated that the underwater turbines will obstruct the waterway and pose a hazard below the surface of the water and indicated that it might be necessary for certain activities to be prohibited within the project area to minimize the risk of marine casualty by entanglement or electrocution. Article 309 approves ORPC Maine's Navigation Safety Plan, which includes further consultation with the Coast Guard relating to necessary navigation and safety procedures at the project, as well as provisions for providing the Commission documentation of approval by the Coast Guard regarding the location of the exclusion zone and associated lights, buoys, or other warning indicators. Any navigation measures the Coast Guard deems necessary would be discussed during these consultations.

this license approves the Project Removal and Site Restoration Plan, with additional provisions for ORPC Maine to file a detailed timeline for the removal and site restoration activities and documentation of agency consultation with the Commission 6 months prior to license expiration if a new license is not being sought for the project, and file documentation of completion of project removal and site restoration activities prior to license expiration.

### **B. Maine DMR's Recommendations**

64. In its comments on the license application, Maine DMR recommended that the Benthic and Biofouling Monitoring Plan include additional pre-deployment monitoring in the TGU deployment area and include sediment sampling in the post-deployment monitoring that should also include a study of the benthic community in the immediate footprint of the TidGen™ systems. In the EA, Commission staff found that the additional sampling recommended by Maine DMR would provide limited additional information and would not be worth the estimated additional levelized annual cost of \$1,500.<sup>38</sup> As such, Article 406 does not require this additional sampling.

65. In its comments on the license application, Maine DMR recommended that the Fisheries and Marine Life Interaction Plan include four additional 24-hour sampling events in year 2 after the Phase 2 deployment, with additional sampling in subsequent years if adverse impacts are observed. As part of the plan, ORPC Maine proposed to meet with the appropriate agencies after the results of the Phase 1 sampling are available to discuss any changes that may be needed for the monitoring schedule. In the EA, Commission staff found that the additional sampling recommended by Maine DMR was not necessary at this time, and that the consultation specified in the plan regarding the results of the Phase 1 sampling would provide the opportunity for any necessary modifications to the study plan related to Phase 2 sampling.<sup>39</sup> As such, Article 407 does not require this additional sampling.

### **C. Bald Eagle**

66. Bald eagles have been reported in the greater Cobscook Bay area as well as within the proposed project area. Although several bald eagle nests exist in the general vicinity of the proposed project, no nests have been observed within the proposed project boundary. Bald eagle protection measures were not proposed by ORPC Maine or recommended by any of the agencies.

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<sup>38</sup> See EA at 148-149.

<sup>39</sup> See EA at 149.

67. In the EA, Commission staff found that, although any construction noise and increased human activity related to project construction and operation would be minimal and short term and not expected to create a greater disturbance than what is already present in Cobscook Bay, following the FWS' *Bald Eagle Management Guidelines* (May 2007) would ensure that this important species is protected.<sup>40</sup> FWS concurred with this recommendation in a letter filed on February 3, 2012.

68. In a letter filed on January 19, 2012, ORPC Maine stated that it will be in compliance with the FWS' *Bald Eagle Management Guidelines*, which recommends a primary 330-foot buffer zone and a secondary 660-foot buffer zone around eagle nest trees. Due to the possibility of new nests in the future, ORPC Maine noted that it will heighten its awareness of bald eagle nests within the range noted in the guidelines during project construction and operation.

69. Article 411 requires the licensee to follow the FWS' *Bald Eagle Management Guidelines* for the protection of bald eagles and their habitat during construction and operation of the project.

#### **D. Interpretive Display**

70. ORPC Maine has an information center within its Eastport office that includes educational displays and informational brochures to accommodate the growing interest in hydrokinetic projects. In the EA, Commission staff found that installing an additional educational display at the project site near the proposed on-shore station house would further enhance the visitor experience and provide a new educational opportunity.<sup>41</sup>

71. Article 413 requires the licensee to install an interpretive display within the project boundary near the on-shore station house that details the TidGen<sup>TM</sup> devices and technology used for the project, as well as the project's relation to the natural environment and the species that inhabit the deployment area.

#### **E. Aesthetics**

72. To minimize the visual impact of the project, ORPC Maine proposed to include "naturalized" design measures in building specification (*e.g.* earth-tone colors, non-reflective paints, and minimization of structure heights that extend above the canopy). No specific concerns relating to aesthetics were expressed by agencies or interested parties. In the EA, Commission staff found that designing the structure to blend with the natural environment and leaving existing, natural vegetation intact as much as possible

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<sup>40</sup> See EA at 145-146.

<sup>41</sup> See EA at 146.

during site preparation activities, as proposed by ORPC Maine, would screen the project structures and limit any aesthetic impacts.

73. Article 415 requires the licensee to design all land-based facilities as low-profile structures and maintain the aesthetic values of the project area through the selection of materials and non-reflective colors that blend with the natural landscape.

74. In comments filed on February 10, 2012, and in comments filed by Interior on November 7, 2011, the Park Service states that maps indicate that project facilities and activities will likely be visible from Roosevelt Campobello International Park (located across the bay, 4 miles southeast of the project area, on Campobello Island in New Brunswick, Canada), especially during the installation process and during maintenance activities. The Park Service states that while the EA claims the on-shore station will have minimal impacts, it offers no supporting information or detailed maps to evaluate the power station's visibility from the water.<sup>42</sup> In addition, the Park Service states that no supporting evaluation or analysis of views of the power station or related facilities from the water was completed.

75. As discussed in the EA, although the project would be located within the Bay of Fundy, which is known for its aesthetic quality, the project area itself is not located in an area known for its important aesthetic resources.<sup>43</sup> While there may be an increase in vessel traffic and barge presence during installation and maintenance activities, this increase will be small and the visibility of these vessels from on-shore locations, such as Roosevelt Campobello International Park, is not expected to change the viewshed greatly from current conditions which already include the presence of fishing boats and other vessels. Furthermore, the Roosevelt Campobello International Park is located 4 miles southeast of the project area and the project most likely would only be visible during clear days that offer good visibility. In addition, the visibility of the powerhouse, located on private lands, will be minimal when designed according to the aesthetic procedures required by Article 415. As such, although the areas within the project vicinity may be known for their aesthetic resources, the project is not expected to have substantial aesthetic impacts; therefore, this order does not require any aesthetic surveys to be completed.

#### **EXEMPTION OF THE FERC FORM 80 RECREATION REPORT**

76. The FERC Form 80 Recreation Report (Form 80) collects recreation usage data on recreation facilities at projects through the term of their licenses. Since the Cobscook

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<sup>42</sup> See EA at 122.

<sup>43</sup> See EA at 123.

Bay Project has little or no potential for recreation facilities, the licensee is exempt from filing the Form 80 during the term of its license (Article 414).

## ADMINISTRATIVE PROVISIONS

### **A. Annual Charges**

77. The Commission collects annual charges from licensees for administration of the FPA. Article 201 provides for the collection of funds for administration of the FPA. Under the regulations currently in effect, projects with authorized installed capacity of less than or equal to 1,500 kW, like this project, will not be assessed an annual charge.

### **B. Exhibit F and G Drawings**

78. The Commission requires licensees to file sets of approved project drawings on microfilm and in electronic file format. Article 202 requires the filing of the approved exhibit F and G drawings.

### **C. Project Land Rights Progress Report**

79. The project will occupy 63.3 acres of land. Standard Article 5 set forth in L-Form 14 requires the licensee to acquire title in fee or the right to use in perpetuity all lands, other than lands of the United States, necessary or appropriate for the construction, maintenance, and operation of the project, within five years. In order to monitor compliance with Article 5, Article 203 requires the licensee to file no later than four years after license issuance, a report detailing its progress on acquiring title in fee or the necessary rights to all lands within the project boundary. The report shall include specific documentation on the status of the rights that have been acquired as of the filing date of the progress report, and a plan and schedule to acquire all remaining land prior to the five-year deadline.

### **D. Use and Occupancy of Project Lands and Waters**

80. Requiring a licensee to obtain prior Commission approval for every use or occupancy of project land would be unduly burdensome. Therefore, Article 417 allows the licensee to grant permission, without prior Commission approval, for the use and occupancy of project lands and waters for such minor activities as landscape planting and boat docks. Such uses must be consistent with the purposes of protecting and enhancing the scenic, recreational, and environmental values of the project.

### **E. L-form Modification**

81. Pursuant to Ordering Paragraph (F), this license is subject to the standard license articles set forth in Form L-14 (October 1975), entitled, "Terms and Conditions of License for Unconstructed Minor Project Affecting Navigable Waters of the United

States,”<sup>44</sup> with a modification to Article 11 to include the Secretary of Commerce as a recommending entity.

#### **F. Start of Construction**

82. Article 301 requires the licensee to commence construction of Phase 1 within two years from the issuance date of the license and to complete construction of Phase 2 within five years of the issuance date of the license.

#### **G. Review of Final Plans and Specifications**

83. Article 302 requires the licensee to provide the Commission’s Division of Dam Safety and Inspection, New York Regional Office (D2SI-NYRO) with final contract drawings and specifications, a quality control and inspection program, a temporary construction emergency action plan, a soil erosion and sediment control plan, and a supporting design report consistent with the Commission’s engineering guidelines.

84. Article 303 requires the licensee to provide design drawings and letters of approval for any cofferdams and deep excavations at least 30 days before the start of any on-site construction authorized by the license.

85. Where new construction or modifications to the project are involved, the Commission requires licensees to file revised drawings of project features as-built. Article 304 provides for the filing of these drawings.

#### **H. Safeguard Plans**

86. Article 305 and 306 approve the Project Operations and Monitoring Plan and Project Inspection and Maintenance Plan, both filed September 1, 2011, which include procedures for monitoring project operation and visually inspecting and maintaining project facilities. Article 307 approves the Project and Public Safety Plan, filed September 1, 2011, which includes measures for identifying and responding to emergencies at the project. Article 308 approves the Emergency Shutdown Plan, filed September 1, 2011, which includes procedures for the remote shutdown of the project turbines in response to emergencies at the project. Article 309 approves the Navigation Safety Plan, filed September 1, 2011, which includes measures to provide navigational markers and an exclusion zone around the project. These five safeguard plans will work interdependently to ensure that the project is operated and maintained in a safe manner that minimizes the potential for harm to the public and environmental resources in the project area. Revisions to these plans may be necessary as experience is gathered with project operations through the term of the license. As such, the licensee should submit

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<sup>44</sup> L-14 is reprinted at 54 FPC 1876 *et seq.* (1975).

any revised plans to the Division of Dam Safety and Inspections – New York Regional Engineer for review and comment prior to implementation.

87. Article 401 approves the Project Removal and Site Restoration Plan, filed September 1, 2011, and requires the licensee to implement it with the following provisions prior to license expiration if a new license is not being sought: 1) provide a specific timeline for the removal and site restoration activities 6 months prior to license expiration; 2) provide documentation of consultation with the appropriate agencies regarding such activities 6 months prior to license expiration; and 3) provide documentation of project removal and site restoration activities prior to license expiration. This plan, along with the additional provisions, will ensure the protection of the aesthetic and environmental resources in and around Cobscook Bay in the event that a new license is not obtained at the end of the license term. Article 401 also approves the letter of credit, filed on February 23, 2012, to cover the entirety of the costs of removing Phase 1 of the project, and requires that ORPC Maine provide proof of the maintenance of a surety bond, or equivalent financial assurance instrument, by December 31 of each year. Article 401 also requires ORPC Maine to file for Commission approval documentation that it has obtained a bond or equivalent financial instrument that covers the entirety of the costs of removing the full project deployment at least 90 days prior to commencing Phase 2 construction.<sup>45</sup>

#### STATE AND FEDERAL COMPREHENSIVE PLANS

88. Section 10(a)(2)(A) of the FPA<sup>46</sup> requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project.<sup>47</sup> Under section 10(a)(2)(A), federal and state agencies filed comprehensive plans that address various resources in Maine. Of these, Commission staff identified and reviewed 14 comprehensive plans that are relevant to this project.<sup>48</sup> No conflicts were found.

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<sup>45</sup> The approved letter of credit for Phase 1 and the required letter of credit for the full project deployment ensure that sufficient funds will be available for the removal of the project and the restoration of the site, if necessary. Due to this financial assurance, this license does not include a project financing plan requirement for this project.

<sup>46</sup> 16 U.S.C. § 803(a)(2)(A) (2006).

<sup>47</sup> Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (2011).

<sup>48</sup> The list of applicable plans can be found in section 5.5 of the EA for the project.

## SAFE MANAGEMENT, OPERATION, AND MAINTENANCE OF THE PROJECT

89. Staff reviewed ORPC Maine's preliminary plans to build the project as described in the license application. The project will be safe when constructed, operated, and maintained in accordance with the Commission's standards and provisions of this license.

## NEED FOR POWER

90. To assess the need for power, staff looked at the needs in the operating region in which the project is located. The project would be located in the New England Subregion of the Northeast Power Coordinating Council Region (NPCC Region)<sup>49</sup> of the North American Electric Reliability Corporation (NERC).<sup>50</sup> NERC annually forecasts electrical supply and demand in the nation and the region for a 10-year period. NERC's most recent report on annual supply and demand projections indicates that, for the period 2010-2019, total summer demand is projected to increase at an average rate of 0.64 percent per year over the 10-year planning period. The project, as licensed, will help meet a portion of this demand.

91. The Cobscook Bay Project will demonstrate the potential of an emergent renewable energy industry segment with the goal of bringing clean, competitively-priced electricity to commercial and residential consumers in Maine and other states. The future use of the project's power and its contribution to a diversified generation mix demonstrate that the project would help meet a need for power in the region.

## PROJECT ECONOMICS

92. In determining whether to issue a license for an original hydrokinetic pilot project, the Commission considers a number of public interest factors, including the economic

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<sup>49</sup> The NPCC Region is composed of the states of Maine, Vermont, New Hampshire, Massachusetts, New York, Connecticut, Rhode Island, and the Canadian provinces of Ontario, Quebec, New Brunswick, Nova Scotia, and Prince Edward Island. The NPCC is divided into the following five subregions: Maritimes, New England, New York, Ontario, and Quebec. Among the subregions of NPCC, Quebec and the Maritimes are predominately winter peaking areas; Ontario, New York, and New England are summer peaking areas.

<sup>50</sup> The NERC is an international regulatory authority established to evaluate reliability of the bulk power system in North America. NERC develops and enforces Reliability Standards; assesses reliability annually via a 10-year assessment and winter and summer preseasonal assessments; monitors the bulk power system; and educates, trains, and certifies industry personnel.

benefits of project power. Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in *Mead Corp.*,<sup>51</sup> the Commission uses current costs to compare the costs of the project and likely alternative power with no forecasts concerning potential future inflation, escalation, or deflation beyond the license issuance date. The basic purpose of the Commission's economic analysis is to provide a general estimate of the potential power benefits and the costs of a project, and of reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license.

93. In applying this analysis to the Cobscook Bay Project, two options have been considered: ORPC Maine's proposal and the project as licensed herein. As proposed by ORPC Maine, the levelized annual cost of operating the Cobscook Bay Project is \$1,418,200, or 1,134.60 mills/kWh. The proposed project would generate an estimated average of 1,250,000 kWh of energy annually. The annual value of alternative power under ORPC Maine's proposal would be \$90,400, or 72.35 mills/kWh.<sup>52</sup> Therefore, in the first year of operation the project power would cost \$1,327,800, or 1,062.25 mills/kWh, more than the cost of alternative power.

94. As licensed herein with the staff recommended measures, the levelized annual cost of operating the project would be about \$1,419,600, or 1,135.66 mills/kWh. Based on an estimated average generation of 1,250,000 kWh as licensed, the annual value of alternative power under the staff alternative would be \$90,400, or 72.35 mills/kWh. Therefore, in the first year of operation the project power would cost \$1,329,200, or 1,063.31 mills/kWh, more than the cost of alternative power.

95. The project has relatively high capital and operation and maintenance costs with respect to the amount of power produced. Although our analysis shows that the project as licensed herein would cost more to operate than our estimated cost of alternative power, it is the applicant who must decide whether to accept this license and any financial risk that entails. This project's value, however, lies in its successful testing and demonstration of ORPC Maine's turbine technology, and the project's ability to raise the profile of, and advance, the emergent tidal energy industry.

96. Although staff does not explicitly account for the effects that inflation may have on the future cost of electricity, the fact that hydropower generation is relatively insensitive to inflation compared to fossil-fueled generators is an important economic

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<sup>51</sup> 72 FERC ¶ 61,027 (1995).

<sup>52</sup> The alternative power cost is based on an average of the daily energy value for the past year for the ISO New England. See [http://iso-ne.com/markets/hst\\_rpts/hstRpts.do](http://iso-ne.com/markets/hst_rpts/hstRpts.do)

consideration for power producers and the consumers they serve. This is one reason project economics is only one of the many public interest factors the Commission considers in determining whether or not, and under what conditions, to issue a license.

## COMPREHENSIVE DEVELOPMENT

97. Sections 4(e) and 10(a)(1) of the FPA<sup>53</sup> require the Commission to give equal consideration to the power development purposes and to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of fish and wildlife, the protection of recreational opportunities, and the preservation of other aspects of environmental quality. Any license issued shall be such as in the Commission's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

98. The EA for the project contains background information, analysis of effects, and support for related license articles. Based on the record of this proceeding, including the EA and the comments thereon, licensing the Cobscook Bay Project as described in this order would not constitute a major federal action significantly affecting the quality of the human environment. The project will be safe if operated and maintained in accordance with the requirements of this license.

99. Based on my independent review and evaluation of the Cobscook Bay Project, recommendations from the resource agencies and other stakeholders, and the no-action alternative, as documented in the EA, the proposed Cobscook Bay Project has been selected, with the measures herein, and found to be best adapted to a comprehensive plan for improving or developing Cobscook Bay.

100. This alternative has been selected because: (1) issuing a pilot license will allow ORPC Maine to test the generating equipment's dependability as a source of electrical energy for the region; (2) the 300 kW of electric energy generated during the 8-year pilot project license will come from a renewable resource, which would not contribute to atmospheric pollution; (3) the recommended environmental measures will adequately protect, mitigate, and enhance fish and wildlife resources affected by the project; and (4) the monitoring required for the project will provide an improved understanding of the environmental effects of tidal energy projects that will be instrumental in assessing the potential effects of future projects of this type and identifying measures to minimize adverse environmental effects.

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<sup>53</sup> 16 U.S.C. §§ 797(e) and 803(a)(1) (2006).

## LICENSE TERM

101. I am issuing an 8-year license for the Cobscook Bay Project. Although the FPA establishes that the maximum license term length the Commission can set is 50 years, the FPA does not establish a minimum license term for original projects. Because ORPC Maine requested an 8-year license term, and because the project is a small-scale pilot project meant to demonstrate the generating potential of a new technology, I have determined that an 8-year license is appropriate.

The Director orders:

(A) This license is issued to Ocean Renewable Power Company Maine, LLC (licensee), for a period of 8 years, effective the first day of the month in which this order is issued, to construct, operate, and maintain the Cobscook Bay Tidal Energy Project. This license is subject to the terms and conditions of the FPA, which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in these lands, enclosed by the project boundary shown by exhibit G filed September 1, 2011:

<u>Exhibit G Drawing</u>	<u>FERC No. 12711-</u>	<u>Description</u>
Sheet G-1	9	Project Boundary Map

(2) Project works consisting of: (a) five 60-kilowatt, approximately 98.5-foot-long, cross-flow Kinetic System turbine generator units (TGU); (b) five bottom support frames, each of which will support one TGU; (c) an approximately 4,150-foot-long direct current power and data (P&D) cable extending from the TGUs to an on-shore station house, which contains a power converter and supervisory control and data acquisition (SCADA) system; (d) a transformer located adjacent to the station house; (e) an approximately 60-foot-long transmission line connecting with the Bangor Hydro Electric Company system; and (f) appurtenant facilities for navigation safety and operation.

The project works generally described above are more specifically shown and described by those portions of exhibits A and F shown below:

Exhibit A: The following section of exhibit A filed on September 1, 2011:

Section 2.0 Technology and Project Description.

Exhibit F: The following exhibit F drawings filed on September 1, 2011:

<u>Exhibit F Drawing</u>	<u>FERC No. 12711-</u>	<u>Title</u>
Exhibit F-1	1	TidGen Power System Details
Exhibit F-2	2	TidGen Power System Assembly Detail
Exhibit F-3	3	Turbine Generator Unit (TGU) Subassembly Detail
Exhibit F-4	4	Bottom Support Frame Subassembly Detail
Exhibit F-5	5	Shore Cable Termination Anchor Detail
Exhibit F-6	6	Environmental Monitoring System
Exhibit F-7	7	Plan and Profile of Cable Route
Exhibit F-8	8	On-shore Station Plan

(3) All of the structures, fixtures, equipment or facilities used to operate or maintain the project, all portable property that may be employed in connection with the project, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) The exhibits A, F, and G described above are approved and made part of the license.

(D) The following sections of the FPA are waived and excluded from the license for this minor project:

4(b), except the second sentence; 4(e), insofar as it relates to approval of plans by the Chief of Engineers and the Secretary of the Army; 6, insofar as it relates to public notice and to the acceptance and expression in the license of terms and conditions of the FPA that are waived here; 10(c), insofar as it relates to depreciation reserves; 10(d); 10(f); 14, except insofar as the power of condemnation is reserved; 15; 16; 19; 20; and 22.

(E) This license is subject to the conditions submitted by the Maine Department of Environmental Protection under section 401(a)(1) of the Clean Water Act, 33 U.S.C. § 1341(a)(1) (2006), as those conditions are set forth in Appendix A to this order.

(F) This license is also subject to: (a) the articles set forth in Form L-14 (October 1975), entitled, "Terms and Conditions of License for Unconstructed Minor Project Affecting Navigable Waters of the United States" (*see* 54 FPC 1876) with the modification to Article 11 to include the Secretary of Commerce as a recommending entity and (b) the following additional articles:

Article 201. Administrative Annual Charges. The licensee shall pay the United States annual charges, effective as of the date of commencement of project construction and as determined in accordance with the provisions of the Commission's regulations in effect from time to time for the purpose of reimbursing the United States for the cost of administration of Part 1 of the Federal Power Act. The authorized installed capacity for that purpose is 300 kilowatts. Under the regulations currently in effect, projects with authorized installed capacity of less than or equal to 1,500 kW will not be assessed an annual charge.

Article 202. Exhibit Drawings. Within 45 days of the date of issuance of this license, the licensee shall file the approved exhibit drawings in aperture card and electronic file formats.

(a) Three sets of the approved exhibit drawings shall be reproduced on silver or gelatin 35mm microfilm. All microfilm shall be mounted on type D (3-1/4" X 7-3/8") aperture cards. Prior to microfilming, the FERC Project-Drawing Number (i.e., P-12711-#### through P-12711-####) shall be shown in the margin below the title block of the approved drawing. After mounting, the FERC Drawing Number shall be typed on the upper right corner of each aperture card. Additionally, the Project Number, FERC Exhibit (i.e., F-1, G-1, etc.), Drawing Title, and date of this license shall be typed on the upper left corner of each aperture card.

Two of the sets of aperture cards shall be filed with the Secretary of the Commission, ATTN: OEP/DHAC. The third set shall be filed with the Commission's Division of Dam Safety and Inspections New York Regional Office.

(b) The licensee shall file two separate sets of exhibit drawings in electronic raster format with the Secretary of the Commission, ATTN: OEP/DHAC. A third set shall be filed with the Commission's Division of Dam Safety and Inspections New York Regional Office. Exhibit F drawings must be segregated from other project exhibits and identified as Critical Energy Infrastructure Information (CEII) material under 18 C.F.R. § 388.113(c) (2011). Each drawing must be a separate electronic file, and the file name shall include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this

license, and file extension in the following format [P-12711-####, G-1, Description, MM-DD-YYYY.TIF]. Electronic drawings shall meet the following format specification:

IMAGERY - black & white raster file  
FILE TYPE – Tagged Image File Format, (TIFF) CCITT Group 4  
RESOLUTION – 300 dpi desired, (200 dpi min)  
DRAWING SIZE FORMAT – 24” X 36” (min), 28” X 40” (max)  
FILE SIZE – less than 1 MB desired

Each Exhibit G drawing that includes the project boundary must contain a minimum of three known reference points (i.e., latitude and longitude coordinates, or state plane coordinates). The points must be arranged in a triangular format for GIS geo-referencing the project boundary drawing to the polygon data, and must be based on a standard map coordinate system. The spatial reference for the drawing (i.e., map projection, map datum, and units of measurement) must be identified on the drawing and each reference point must be labeled. In addition, each project boundary drawing must be stamped by a registered land surveyor.

(c) The licensee shall file two separate sets of the project boundary data in a geo-referenced electronic file format (such as ArcView shape files, GeoMedia files, MapInfo files, or a similar GIS format) with the Secretary of the Commission, ATTN: OEP/DHAC. The filing shall include both polygon data and all reference points shown on the individual project boundary drawings. An electronic boundary polygon data file(s) is required for each project development. Depending on the electronic file format, the polygon and point data can be included in a single file with multiple layers. The geo-referenced electronic boundary data file must be positionally accurate to  $\pm 40$  feet in order to comply with National Map Accuracy Standards for maps at a 1:24,000 scale. The file name(s) shall include: FERC Project Number, data description, date of this license, and file extension in the following format [P-12711, boundary polygon/or point data, MM-DD-YYYY.SHP]. The data must be accompanied by a separate text file describing the spatial reference for the geo-referenced data: map projection used (i.e., UTM, State Plane, Decimal Degrees, etc.), the map datum (i.e., North American 27, North American 83, etc.), and the units of measurement (i.e., feet, meters, miles, etc.). The text file name shall include: FERC Project Number, data description, date of this license, and file extension in the following format [P-12711, project boundary metadata, MM-DD-YYYY.TXT].

Article 203. *Project Land Rights Progress Report.* No later than four years after license issuance, the licensee shall file a report with the Commission describing the status of acquiring title in fee or the rights for all the lands within the project boundary. The report must provide an overview map of each parcel and summary table identifying the licensee’s rights over each parcel within the project boundary. The report shall also

include specific supporting documentation showing the status of the land rights on all parcels of land within the project boundary that: (1) have been acquired up to the date of filing of the report, including pertinent deeds, lease agreements, and/or bill of sale information that specifically verify the licensee's rights; and (2) the licensee's plan and schedule for acquiring all remaining project lands prior to the five-year deadline, including a history of actions taken, current owner information, the type of ownership to be acquired whether in fee or by easement, and the timeline for completing property acquisition.

Article 301. *Start of Construction.* The licensee shall commence construction of Phase 1 within two years from the issuance date of the license and shall complete construction of Phase 2 within five years from the issuance date of the license.

Article 302. *Contract Plans and Specifications.* At least 60 days prior to the start of any on-site construction, the licensee shall submit one copy of its plans and specifications and a supporting design document to the Division of Dam Safety and Inspections (D2SI) – New York Regional Engineer, and two copies to the Commission (one of these shall be a courtesy copy to the Director, D2SI). The submittal to the D2SI – New York Regional Engineer must also include as part of preconstruction requirements: a Quality Control and Inspection Program, Temporary Construction Emergency Action Plan, and Soil Erosion and Sediment Control Plan. The licensee may not begin on-site construction until the D2SI-New York Regional Engineer has reviewed and commented on the plans and specifications, determined that all preconstruction requirements have been satisfied, and authorized start of construction.

Article 303. *Review of Cofferdam and Deep Excavation Designs.* The licensee shall review and approve the design of any contractor-designed cofferdams and deep excavations prior to the start of on-site construction and shall ensure that construction of cofferdams and deep excavations is consistent with the approved design. At least 30 days prior to the start of on-site construction, the licensee shall submit one copy to the Commission's Division of Dam Safety and Inspections (D2SI) – New York Regional Engineer, and two copies to the Commission (one of these shall be a courtesy copy to the Director, D2SI), of the approved cofferdam/deep excavation drawings and specifications, and the letter(s) of approval.

Article 304. *As-built Drawings.* Within 90 days of completion of construction of the facilities authorized by this license, the licensee shall file for Commission approval, revised exhibits A, F, and G, as applicable, to describe and show those project facilities as built. A courtesy copy shall be filed with the Commission's Division of Dam Safety and Inspections (D2SI) – New York Regional Engineer, the Director, D2SI, and the Director, Division of Hydropower Administration and Compliance.

Article 305. *Project Operations and Monitoring Plan.* The Project Operations and Monitoring Plan, filed September 1, 2011, is approved. Any future revisions to the plan shall be submitted to the Division of Dam Safety and Inspections – New York Regional Engineer for review and comment prior to implementation.

Article 306. *Project Inspection and Maintenance Plan.* The Project Inspection and Maintenance Plan, filed September 1, 2011, is approved. Any future revisions to the plan shall be submitted to the Division of Dam Safety and Inspections – New York Regional Engineer for review and comment prior to implementation.

Article 307. *Project and Public Safety Plan.* The Project and Public Safety Plan, filed September 1, 2011, is approved. Any future revisions to the plan shall be submitted to the Division of Dam Safety and Inspections – New York Regional Engineer for review and comment prior to implementation.

Article 308. *Emergency Shutdown Plan.* The Emergency Shutdown Plan, filed September 1, 2011, is approved with the following modification: the Division of Dam Safety and Inspections (D2SI) – New York Regional Engineer shall be contacted in the event of any project emergency instead of the Director, Office of Energy Projects. Any future revisions to the plan shall be submitted to the D2SI – New York Regional Engineer for review and comment prior to implementation.

Article 309. *Navigation Safety Plan.* The Navigation Safety Plan, filed September 1, 2011, is approved. At least 30 days before starting project operations, the licensee shall submit one copy of a revised Navigation Safety Plan to the Division of Dam Safety and Inspections (D2SI) – New York Regional Engineer, and two copies to the Commission (one of these shall be a courtesy copy to the Director, D2SI). The revised plan shall include an updated site plan and documentation of approval by the U.S. Coast Guard regarding the location of the exclusion zone and associated lights, buoys, or other warning indicators. All future revisions to the plan shall be submitted to the D2SI – New York Regional Engineer for review and comment prior to implementation.

Article 401. *Project Removal and Site Restoration Plan.* The Project Removal and Site Restoration Plan, filed September 1, 2011, is approved with the following additional provisions: 1) a detailed timeline for the removal and site restoration activities shall be filed with the Commission 6 months prior to license expiration; 2) documentation of consultation with the Maine State Planning Office, Maine Department of Environmental Protection, Maine Department of Marine Resources, U.S. Fish and Wildlife Service, National Marine Fisheries Service, U.S. Coast Guard, and U.S. Army Corps of Engineers regarding planned removal and site restoration activities shall be filed with the Commission 6 months prior to license expiration; and 3) documentation of completion of project removal and site restoration activities shall be filed with the Commission prior to license expiration. The licensee shall implement the plan if a new

license is not being sought for the project at the end of the license term. This plan may not be amended without prior Commission approval.

The letter of credit covering the entirety of the costs of removing Phase 1 of the project, filed February 23, 2012, is approved. The licensee shall maintain the bond or equivalent financial instrument throughout the term of the license. The licensee shall file by December 31 of each year proof of the maintenance of a surety bond, or equivalent financial assurance instrument, to cover the entirety of the costs of removing the project. At least 90 days before starting any ground-disturbing activities associated with Phase 2 construction, the licensee shall file documentation that the licensee has obtained a bond or equivalent financial instrument that ensures the licensee has the financial means necessary to cover the entirety of the costs of removing the full project deployment. The licensee shall not commence Phase 2 project construction or initiate any ground-disturbing activities that are associated with Phase 2 of the project before the bond or equivalent financial instrument for the full project deployment is approved.

Article 402. *Restriction Period for Pile Driving.* The licensee shall not conduct any pile driving between April 10 and November 7 of any year. The need for this restriction window in Phase 2 deployment shall be determined based on the Phase 1 results of the Acoustic Monitoring Plan and the subsequent consultation specified in the Adaptive Management Plan.

Article 403. *Cable Burial.* The licensee shall bury the power and data cable by means of a shear plow in water depths below mean lower low water. The licensee shall bury the power and data cable by means of trenching within the intertidal zone located above mean lower low water and restore all intertidal gravel and cobble habitat to pre-construction condition before commencing project operation. The licensee shall file photographic documentation of the habitat restoration, including pre- and post-trenching photographs of the burial path, with the Commission no later than 90 days following the commencement of operation.

Article 404. *Adaptive Management Plan.* Within 3 months of license issuance, the licensee shall file with the Commission for approval an Adaptive Management Plan that has been developed in consultation with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, U.S. Coast Guard, Maine Department of Environmental Protection, and Maine Department of Marine Resources.

The plan shall include: 1) protocols for consultation with federal and state agencies on preliminary results of monitoring studies and any necessary modifications, with documentation of consultation and any recommended or proposed modification included in each environmental monitoring plan report filed with the Commission; 2) the allowance for minor modifications (i.e. location, frequency) to the monitoring plans without prior Commission approval in cases where all consulted entities are in

agreement, with modifications and the record of consultation included in the required reports of the affected monitoring plans; 3) the allowance for major modifications (i.e. termination of monitoring, change in reporting schedule) to the monitoring plans upon Commission approval; and 4) a provision for consultation and Commission approval on the effectiveness of the monitoring and the operation of the project in Phase 1 prior to commencing with Phase 2 deployment.

Prior to filing the plan with the Commission, the licensee shall submit the plan to the agencies identified above and allow them a minimum of 45 days to review and comment on the plan. The final plan shall include copies of any comments received and the licensee shall address all comments and recommendations received from the agencies. If the licensee does not adopt a recommendation, the plan shall include the licensee's reasons based on project-specific information.

Article 405. *Acoustic Monitoring Plan.* The Acoustic Monitoring Plan, filed September 1, 2011, and amended December 1, 2011, is approved and made part of this license. This plan may not be amended without prior Commission approval. Upon license issuance the licensee shall implement the plan.

As part of the plan, the licensee shall submit annual reports by March 1 of each year that monitoring occurs. Prior to filing the report with the Commission, the licensee shall submit the report to the Maine Department of Environmental Protection, Maine Department of Marine Resources, U.S. Fish and Wildlife Service, and National Marine Fisheries Service and allow a minimum of 30 days for the agencies to review and comment on the report. The final report shall include copies of any comments received and the licensee shall address all comments and recommendations received from the agencies. If the licensee does not adopt a recommendation, the report shall include the licensee's reasons based on project-specific information. The Commission reserves the right to modify the monitoring plan and project operation in order to protect environmental resources at the project.

Article 406. *Benthic and Biofouling Plan.* The Benthic and Biofouling Plan, filed September 1, 2011, is approved and made part of this license. This plan may not be amended without prior Commission approval. Upon license issuance the licensee shall implement the plan.

As part of the plan, the licensee shall submit annual reports by March 1 of each year that monitoring occurs. Prior to filing the report with the Commission, the licensee shall submit the report to the Maine Department of Environmental Protection, Maine Department of Marine Resources, U.S. Fish and Wildlife Service, and National Marine Fisheries Service and allow a minimum of 30 days for the agencies to review and comment on the report. The final report shall include copies of any comments received and the licensee shall address all comments and recommendations received from the

agencies. If the licensee does not adopt a recommendation, the report shall include the licensee's reasons based on project-specific information. The Commission reserves the right to modify the monitoring plan and project operation in order to protect environmental resources at the project.

Article 407. *Fisheries and Marine Life Interaction Monitoring Plan.* The Fisheries and Marine Life Interaction Monitoring Plan, filed September 1, 2011, is approved and made part of this license. This plan may not be amended without prior Commission approval. Upon license issuance the licensee shall implement the plan.

As part of the plan, the licensee shall submit annual reports by March 1 of each year that monitoring occurs. Prior to filing the report with the Commission, the licensee shall submit the report to the Maine Department of Environmental Protection, Maine Department of Marine Resources, U.S. Fish and Wildlife Service, and National Marine Fisheries Service and allow a minimum of 30 days for the agencies to review and comment on the report. The final report shall include copies of any comments received and the licensee shall address all comments and recommendations received from the agencies. If the licensee does not adopt a recommendation, the report shall include the licensee's reasons based on project-specific information. The Commission reserves the right to modify the monitoring plan and project operation in order to protect environmental resources at the project.

Article 408. *Reservation of Authority to Prescribe Fishways.* Authority is reserved to the Commission to require the licensee to construct, operate, and maintain, or to provide for the construction, operation, and maintenance of such fishways as may be prescribed by the Secretary of the Interior pursuant to section 18 of the Federal Power Act.

Article 409. *Hydraulic Monitoring Plan.* The Hydraulic Monitoring Plan, filed September 1, 2011, is approved and made part of this license. This plan may not be amended without prior Commission approval. Upon license issuance the licensee shall implement the plan.

As part of the plan, the licensee shall submit annual reports by March 1 of each year that monitoring occurs. Prior to filing the report with the Commission, the licensee shall submit the report to the Maine Department of Environmental Protection, Maine Department of Marine Resources, U.S. Fish and Wildlife Service, and National Marine Fisheries Service and allow a minimum of 30 days for the agencies to review and comment on the report. The final report shall include copies of any comments received and the licensee shall address all comments and recommendations received from the agencies. If the licensee does not adopt a recommendation, the report shall include the licensee's reasons based on project-specific information. The Commission reserves the

right to modify the monitoring plan and project operation in order to protect environmental resources at the project.

Article 410. *Marine Mammal Monitoring Plan.* The Marine Mammal Monitoring Plan, filed September 1, 2011, is approved and made part of this license. This plan may not be amended without prior Commission approval. Upon license issuance the licensee shall implement the plan.

As part of the plan, the licensee shall submit annual reports by March 1 of each year that monitoring occurs. Prior to filing the report with the Commission, the licensee shall submit the report to the Maine Department of Environmental Protection, Maine Department of Marine Resources, U.S. Fish and Wildlife Service, and National Marine Fisheries Service and allow a minimum of 30 days for the agencies to review and comment on the report. The final report shall include copies of any comments received and the licensee shall address all comments and recommendations received from the agencies. If the licensee does not adopt a recommendation, the report shall include the licensee's reasons based on project-specific information. The Commission reserves the right to modify the monitoring plan and project operation in order to protect environmental resources at the project.

Article 411. *Bald Eagle Management Guidelines.* The licensee shall follow the U.S. Fish and Wildlife Service's *Bald Eagle Management Guidelines*, issued May 2007, for the protection of bald eagles and their habitat during construction and operation of the project.

Article 412. *Bird Monitoring Plan.* The Bird Monitoring Plan, filed September 1, 2011, is approved and made part of this license. This plan may not be amended without prior Commission approval. Upon license issuance the licensee shall implement the plan.

As part of the plan, the licensee shall submit annual reports by March 1 of each year that monitoring occurs. Prior to filing the report with the Commission, the licensee shall submit the report to the Maine Department of Environmental Protection, Maine Department of Marine Resources, U.S. Fish and Wildlife Service, and National Marine Fisheries Service and allow a minimum of 30 days for the agencies to review and comment on the report. The final report shall include copies of any comments received and the licensee shall address all comments and recommendations received from the agencies. If the licensee does not adopt a recommendation, the report shall include the licensee's reasons based on project-specific information. The Commission reserves the right to modify the monitoring plan and project operation in order to protect environmental resources at the project.

Article 413. *Interpretive Display.* Within 3 months of license issuance, the licensee shall install an interpretive display within the project boundary near the on-shore station house that includes an informational project board detailing the TidGen™

devices, the hydrokinetic technology, and the natural environment of the project area. Within 6 months of license issuance, the licensee shall file documentation of the installation of the kiosk. The documentation shall include: the text and graphics included on the kiosk, photographs of the installed kiosk, and a map showing the location of the kiosk. In addition, the filing shall include location point data that is representative of the kiosk. The location point(s) must be positionally accurate to  $\pm 40$  feet to comply with National Map Accuracy Standards for maps at a 1:24,000 scale. The location point(s) must include latitude/longitude in decimal degrees, based on the horizontal reference datum of the North American Datum of 1983 (NAD 83). The attribute table for each point must include at least the development name and recreational feature.

Article 414. FERC Form 80 Exemption. There is little or no potential for recreation facilities within the project boundary. Therefore, upon the issuance date of the license, the licensee is exempt from 18 C.F.R. § 8.11, the filing of the FERC Form 80 recreation report, for the Cobscook Bay Tidal Energy Project.

Article 415. Aesthetic Resources. All land-based facilities shall be designed as low profile structures to minimize aesthetic impacts. The licensee also shall maintain aesthetic values of the project area through the selection of materials and non-reflective colors that blend with the natural landscape.

Article 416. Protection of Undiscovered Cultural Resources. If the licensee discovers previously unidentified cultural resources during the course of constructing, maintaining, or developing project works or other facilities at the project, the licensee shall stop all land-clearing and land-disturbing activities in the vicinity of the resource and consult with the Maine State Historic Preservation Officer (SHPO) to determine the need for any cultural resource studies or measures. If no studies or measures are needed, the licensee shall file with the Commission documentation of its consultation with the Maine SHPO immediately.

If a discovered cultural resource is determined to be eligible for the National Register of Historic Places (National Register), the licensee shall file for Commission approval a historic properties management plan (HPMP) prepared by a qualified cultural resource specialist after consultation with the Maine SHPO. In developing the HPMP, the licensee shall use the Advisory Council on Historic Preservation and the Federal Energy Regulatory Commission's *Guidelines for the Development of Historic Properties Management Plans for FERC Hydroelectric Projects*, dated May 20, 2002. The HPMP shall include the following items: (1) a description of each discovered property, indicating whether it is listed in or eligible to be listed in the National Register; (2) a description of the potential effect on each discovered property; (3) proposed measures for avoiding or mitigating adverse effects; (4) documentation of consultation; and (5) a schedule for implementing mitigation and conducting additional studies. The Commission reserves the right to require changes to the HPMP.

The licensee shall not resume land-clearing or land-disturbing activities in the vicinity of a cultural resource discovered during construction, until informed by the Commission that the requirements of this article have been fulfilled.

Article 417. Use and Occupancy. (a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee shall also have continuing responsibility to supervise and control the use and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The type of use and occupancy of project lands and waters for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 water craft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancements. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the impoundment shoreline. To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the

licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensee may convey easements or rights-of-way across, or leases of project lands for: (1) replacement, expansion, realignment, or maintenance of bridges or roads where all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project impoundment. No later than January 31 of each year, the licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 water craft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 60 days before conveying any interest in project lands under this paragraph (d), the licensee must submit a letter to the Director, Office of Energy Projects, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Director, within 45 days from the filing date, requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraph (c) or (d) of this article:

(1) Before conveying the interest, the licensee shall consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the licensee shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved report on recreational resources of an Exhibit E; or, if the project does not have an approved report on recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include the following covenants running with the land: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (ii) the grantee shall take all reasonable precautions to ensure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project; and (iii) the grantee shall not unduly restrict public access to project waters.

(4) The Commission reserves the right to require the licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised Exhibit G drawings would be filed for approval for other purposes.

(g) The authority granted to the licensee under this article shall not apply to any part of the public lands and reservations of the United States included within the project boundary.

(G) The licensee shall serve copies of any Commission filing required by this order on any entity specified in the order to be consulted on matters relating to that filing. Proof of service on these entities must accompany the filing with the Commission.

(H) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section 313(a) of the FPA, 16 U.S.C. § 8251 (2006), and section 385.713 of the Commission's regulations, 18 C.F.R. § 385.713 (2011). The filing of a request for rehearing does not operate as a stay of the effective date of this license or of any date specified in this order. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

Jeff C. Wright  
Director  
Office of Energy Projects

**Form L-14**  
(October, 1975)

**FEDERAL ENERGY REGULATORY COMMISSION**

**TERMS AND CONDITIONS OF LICENSE FOR UNCONSTRUCTED MINOR  
PROJECT AFFECTING NAVIGABLE WATERS OF THE UNITED STATES**

**Article 1.** The entire project, as described in this order of the Commission, shall be subject to all of the provisions, terms, and conditions of the license.

**Article 2.** No substantial change shall be made in the maps, plans, specifications, and statements described and designated as exhibits and approved by the Commission in its order as a part of the license until such change shall have been approved by the Commission: Provided, however, That if the Licensee or the Commission deems it necessary or desirable that said approved exhibits, or any of them, be changed, there shall be submitted to the Commission for approval a revised, or additional exhibit or exhibits covering the proposed changes which, upon approval by the Commission, shall become a part of the license and shall supersede, in whole or in part, such exhibit or exhibits theretofore made a part of the license as may be specified by the Commission.

**Article 3.** The project works shall be constructed in substantial conformity with the approved exhibits referred to in Article 2 herein or as changed in accordance with the provisions of said article. Except when emergency shall require for the protection of navigation, life, health, or property, there shall not be made without prior approval of the Commission any substantial alteration or addition not in conformity with the approved plans to any dam or other project works under the license or any substantial use of project lands and waters not authorized herein; and any emergency alteration, addition, or use so made shall thereafter be subject to such modification and change as the Commission may direct. Minor changes in project works, or in uses of project lands and waters, or divergence from such approved exhibits may be made if such changes will not result in a decrease in efficiency, in a material increase in cost, in an adverse environmental impact, or in impairment of the general scheme of development; but any of such minor changes made without the prior approval of the Commission, which in its judgment have produced or will produce any of such results, shall be subject to such alteration as the Commission may direct.

Upon the completion of the project, or at such other time as the Commission may direct, the Licensee shall submit to the Commission for approval revised exhibits insofar as necessary to show any divergence from or variations in the project area and project boundary as finally located or in the project works as actually constructed when compared with the area and boundary shown and the works described in the license or in the exhibits approved by the Commission, together with a statement in writing setting

forth the reasons which in the opinion of the Licensee necessitated or justified variation in or divergence from the approved exhibits. Such revised exhibits shall, if and when approved by the Commission, be made a part of the license under the provisions of Article 2 hereof.

**Article 4.** The construction, operation, and maintenance of the project and any work incidental to additions or alterations shall be subject to the inspection and supervision of the Regional Engineer, Federal Energy Regulatory Commission, in the region wherein the project is located, or of such other officer or agent as the Commission may designate, who shall be the authorized representative of the Commission for such purposes. The Licensee shall cooperate fully with said representative and shall furnish him a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of the project and for any subsequent alterations to the project. Construction of the project works or any features or alteration thereof shall not be initiated until the program of inspection for the project works or any such feature thereof has been approved by said representative. The Licensee shall also furnish to said representative such further information as he may require concerning the construction, operation, and maintenance of the project, and of any alteration thereof, and shall notify him of the date upon which work will begin, as far in advance thereof as said representative may reasonably specify, and shall notify him promptly in writing of any suspension of work for a period of more than one week, and of its resumption and completion. The Licensee shall allow said representative and other officers or employees of the United States, showing proper credentials, free and unrestricted access to, through, and across the project lands and project works in the performance of their official duties. The Licensee shall comply with such rules and regulations of general or special applicability as the Commission may prescribe from time to time for the protection of life, health, or property.

**Article 5.** The Licensee, within five years from the date of issuance of the license, shall acquire title in fee or the right to use in perpetuity all lands, other than lands of the United States, necessary or appropriate for the construction, maintenance, and operation of the project. The Licensee or its successors and assigns shall, during the period of the license, retain the possession of all project property covered by the license as issued or as later amended, including the project area, the project works, and all franchises, easements, water rights, and rights of occupancy and use; and none of such properties shall be voluntarily sold, leased, transferred, abandoned, or otherwise disposed of without the prior written approval of the Commission, except that the Licensee may lease or otherwise dispose of interests in project lands or property without specific written approval of the Commission pursuant to the then current regulations of the Commission. The provisions of this article are not intended to prevent the abandonment or the retirement from service of structures, equipment, or other project works in connection with replacements thereof when they become obsolete, inadequate, or inefficient for further service due to wear and tear; and mortgage or trust deeds or judicial sales made

thereunder, or tax sales, shall not be deemed voluntary transfers within the meaning of this article.

**Article 6.** The Licensee shall install and thereafter maintain gages and stream-gaging stations for the purpose of determining the stage and flow of the stream or streams on which the project is located, the amount of water held in and withdrawn from storage, and the effective head on the turbines; shall provide for the required reading of such gages and for the adequate rating of such stations; and shall install and maintain standard meters adequate for the determination of the amount of electric energy generated by the project works. The number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, shall at all times be satisfactory to the Commission or its authorized representative. The Commission reserves the right, after notice and opportunity for hearing, to require such alterations in the number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, as are necessary to secure adequate determinations. The installation of gages, the rating of said stream or streams, and the determination of the flow thereof, shall be under the supervision of, or in cooperation with, the District Engineer of the United States Geological Survey having charge of stream-gaging operations in the region of the project, and the Licensee shall advance to the United States Geological Survey the amount of funds estimated to be necessary for such supervision, or cooperation for such periods as may be mutually agreed upon. The Licensee shall keep accurate and sufficient records of the foregoing determinations to the satisfaction of the Commission, and shall make return of such records annually at such time and in such form as the Commission may prescribe.

**Article 7.** The Licensee shall, after notice and opportunity for hearing, install additional capacity or make other changes in the project as directed by the Commission, to the extent that it is economically sound and in the public interest to do so.

**Article 8.** The Licensee shall, after notice and opportunity for hearing, coordinate the operation of the project, electrically and hydraulically, with such other projects or power systems and in such manner as the Commission may direct in the interest of power and other beneficial public uses of water resources, and on such conditions concerning the equitable sharing of benefits by the Licensee as the Commission may order.

**Article 9.** The United States specifically retains and safeguards the right to use water in such amount, to be determined by the Secretary of the Army, as may be necessary for the purposes of navigation on the navigable waterway affected; and the operations of the Licensee, so far as they affect the use, storage and discharge from storage of waters affected by the license, shall at all times be controlled by such reasonable rules and regulations as the Secretary of the Army may prescribe in the interest of navigation, and as the Commission may prescribe for the protection of life, health, and property, and in the interest of the fullest practicable conservation and utilization of such waters for power purposes and for other beneficial public uses,

including recreational purposes, and the Licensee shall release water from the project reservoir at such rate in cubic feet per second, or such volume in acre-feet per specified period of time, as the Secretary of the Army may prescribe in the interest of navigation, or as the Commission may prescribe for the other purposes hereinbefore mentioned.

**Article 10.** On the application of any person, association, corporation, Federal agency, State or municipality, the Licensee shall permit such reasonable use of its reservoir or other project properties, including works, lands and water rights, or parts thereof, as may be ordered by the Commission, after notice and opportunity for hearing, in the interests of comprehensive development of the waterway or waterways involved and the conservation and utilization of the water resources of the region for water supply or for the purposes of steam-electric, irrigation, industrial, municipal or similar uses. The Licensee shall receive reasonable compensation for use of its reservoir or other project properties or parts thereof for such purposes, to include at least full reimbursement for any damages or expenses which the joint use causes the Licensee to incur. Any such compensation shall be fixed by the Commission either by approval of an agreement between the Licensee and the party or parties benefiting or after notice and opportunity for hearing. Applications shall contain information in sufficient detail to afford a full understanding of the proposed use, including satisfactory evidence that the applicant possesses necessary water rights pursuant to applicable State law, or a showing of cause why such evidence cannot concurrently be submitted, and a statement as to the relationship of the proposed use to any State or municipal plans or orders which may have been adopted with respect to the use of such waters.

**Article 11.** The Licensee shall, for the conservation and development of fish and wildlife resources, construct, maintain, and operate, or arrange for the construction, maintenance, and operation of such reasonable facilities, and comply with such reasonable modifications of the project structures and operation, as may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior, Secretary of Commerce, or the fish and wildlife agency or agencies of any State in which the project or a part thereof is located, after notice and opportunity for hearing.

**Article 12.** Whenever the United States shall desire, in connection with the project, to construct fish and wildlife facilities or to improve the existing fish and wildlife facilities at its own expense, the Licensee shall permit the United States or its designated agency to use, free of cost, such of the Licensee's lands and interests in lands, reservoirs, waterways and project works as may be reasonably required to complete such facilities or such improvements thereof. In addition, after notice and opportunity for hearing, the Licensee shall modify the project operation as may be reasonably prescribed by the Commission in order to permit the maintenance and operation of the fish and wildlife facilities constructed or improved by the United States under the provisions of this article. This article shall not be interpreted to place any obligation on the United States to

construct or improve fish and wildlife facilities or to relieve the Licensee of any obligation under this license.

**Article 13.** So far as is consistent with proper operation of the project, the Licensee shall allow the public free access, to a reasonable extent, to project waters and adjacent project lands owned by the Licensee for the purpose of full public utilization of such lands and waters for navigation and for outdoor recreational purposes, including fishing and hunting: Provided, That the Licensee may reserve from public access such portions of the project waters, adjacent lands, and project facilities as may be necessary for the protection of life, health, and property.

**Article 14.** In the construction, maintenance, or operation of the project, the Licensee shall be responsible for, and shall take reasonable measures to prevent, soil erosion on lands adjacent to streams or other waters, stream sedimentation, and any form of water or air pollution. The Commission, upon the request or upon its own motion, may order the Licensee to take such measures as the Commission finds to be necessary for these purposes, after notice and opportunity for hearing.

**Article 15.** The Licensee shall consult with the appropriate State and Federal agencies and, within one year of the date of issuance of this license, shall submit for Commission approval a plan for clearing the reservoir area. Further, the Licensee shall clear and keep clear to an adequate width lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which results from the clearing of lands or from the maintenance or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed. Upon approval of the clearing plan all clearing of the lands and disposal of the unnecessary material shall be done with due diligence and to the satisfaction of the authorized representative of the Commission and in accordance with appropriate Federal, State, and local statutes and regulations.

**Article 16.** Material may be dredged or excavated from, or placed as fill in, project lands and/or waters only in the prosecution of work specifically authorized under the license; in the maintenance of the project; or after obtaining Commission approval, as appropriate. Any such material shall be removed and/or deposited in such manner as to reasonably preserve the environmental values of the project and so as not to interfere with traffic on land or water. Dredging and filling in a navigable water of the United States shall also be done to the satisfaction of the District Engineer, Department of the Army, in charge of the locality.

**Article 17.** If the Licensee shall cause or suffer essential project property to be removed or destroyed or to become unfit for use, without adequate replacement, or shall abandon or discontinue good faith operation of the project or refuse or neglect to comply

with the terms of the license and the lawful orders of the Commission mailed to the record address of the Licensee or its agent, the Commission will deem it to be the intent of the Licensee to surrender the license. The Commission, after notice and opportunity for hearing, may require the Licensee to remove any or all structures, equipment and power lines within the project boundary and to take any such other action necessary to restore the project waters, lands, and facilities remaining within the project boundary to a condition satisfactory to the United States agency having jurisdiction over its lands or the Commission's authorized representative, as appropriate, or to provide for the continued operation and maintenance of nonpower facilities and fulfill such other obligations under the license as the Commission may prescribe. In addition, the Commission in its discretion, after notice and opportunity for hearing, may also agree to the surrender of the license when the Commission, for the reasons recited herein, deems it to be the intent of the Licensee to surrender the license.

**Article 18.** The right of the Licensee and of its successors and assigns to use or occupy waters over which the United States has jurisdiction, or lands of the United States under the license, for the purpose of maintaining the project works or otherwise, shall absolutely cease at the end of the license period, unless the Licensee has obtained a new license pursuant to the then existing laws and regulations, or an annual license under the terms and conditions of this license.

**Article 19.** The terms and conditions expressly set forth in the license shall not be construed as impairing any terms and conditions of the Federal Power Act which are not expressly set forth herein.

## **APPENDIX A**

### **Water Quality Certificate Conditions for the Cobscook Bay Tidal Energy Project Issued by the Maine Department of Environmental Protection on January 31, 2012**

#### **STANDARD CONDITIONS OF APPROVAL TO BE ATTACHED TO HYDROPOWER PERMITS**

1. **Limits of Approval.** This approval is limited to and includes the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicant. All variances from the plans and proposals contained in said documents are subject to the review and approval of the Board or Commission prior to implementation.
2. **Noncompliance.** Should the project be found, at any time, not to be in compliance with any of the conditions of this approval, or should the permittee construct or operate this project in any way other than specified in the application or supporting documents, as modified by the conditions of this approval, then the terms of this approval shall be considered to have been violated.
3. **Compliance with all Applicable Laws.** The permittee shall secure and appropriately comply with all applicable federal, state and local licenses, permits, authorizations, conditions, agreements, and orders prior to or during construction and operation.
4. **Inspection and Compliance.** Authorized representatives of the Board, Commission or the Attorney General shall be granted access to the premises of the permittee at any reasonable time for the purpose of inspecting the construction or operation of the project and assuring compliance by the permittee with the conditions of this approval.
5. **Initiation and Completion of Construction.** If construction is not commenced within 3 years and completed within 7 years from the date of issuance of this permit, this approval shall lapse, unless a request for an extension of these deadlines has been approved by the Board or Commission.
6. **Construction Schedule.** Prior to construction, the permittee shall submit a final construction schedule for the project to the Commissioner or Director.
7. **Approval Included in Contract Bids.** A copy of this approval must be included in or attached to contract bid specifications for the project.

8. Approval Shown to Contractor. Work done by a contractor pursuant to this approval shall not begin before a copy of this approval has been shown to the contractor by the permittee.

9. Notification of Project Operation. The permittee shall notify the Commissioner or Director of the commencement of commercial operation of the project within 10 days prior to such commencement.

10. Assignment or Transfer of Approval. This approval shall expire upon the assignment or transfer of the property covered by this approval unless written consent to transfer this approval is obtained from the Board or Commission. To obtain approval of transfer, the permittee shall notify the Board or Commission 30 days prior to assignment or transfer of property which is subject to this approval. Pending Board or Commission determination on the application for a transfer or assignment of ownership of this approval, the person(s) to whom such property is assigned or transferred shall abide by all of the terms and conditions of this approval. To obtain the Board's or Commission's approval of transfer, the proposed assignee or transferee must demonstrate the financial capability and technical ability to (1) comply with all terms and conditions of this approval and (2) satisfy all other applicable statutory criteria.

A "transfer" is defined as the sale or lease of property which is the subject of this approval or the sale of 50 percent or more of the stock of or interest in a corporation or a change in a general partner of a partnership which owns the property subject to this approval.