



United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960



February 27, 2013

Michelle Morin
Chief, Environmental Branch for Renewable Energy
Bureau of Ocean Energy Management
381 Elden Street, HM 1328
Herndon, Virginia 20170-4817

RECEIVED

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Office of Renewable
Energy Programs

Service Federal Activity Code: 2013-CPA-0080
Service Log No.: 2013-I-0093
Date Received: January 7, 2013
Applicant: Florida Atlantic University
Project: Marine Hydrokinetic Turbine
Testing

Dear Ms. Morin:

The U.S. Fish and Wildlife Service (Service) has reviewed your letter dated January 4, 2013, containing the draft environmental assessment (EA) and other information submitted by the Bureau of Ocean Energy Management (BOEM) for the project referenced above. This letter is submitted in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*), the Marine Mammal Protection Act of 1972, as amended (MMPA) (16 U.S.C. 1361 *et seq.*), the Migratory Bird Treaty Act (MBTA), as amended (40 Stat. 755; 16 U.S.C. 703 *et seq.*), and the provisions of the Fish and Wildlife Coordination Act of 1958, as amended (48 Stat. 401; 16 U.S.C. 661 *et seq.*).

PROJECT DESCRIPTION

Florida Atlantic University's (FAU) Southeast National Marine Renewable Energy Center (SNMREC) submitted an application to BOEM for a lease to conduct marine hydrokinetic (MHK) technology testing on the Outer Continental Shelf (OCS) in Official Protraction Diagram NG 17-06, Blocks 7003, 7053, and 7054, located approximately 16.7 to 27.8 kilometers (km) (9.0 to 15.0 nautical miles [nm]) offshore of Fort Lauderdale, Florida. The proposed project focuses on the testing of technologies that take advantage of ocean currents to generate energy. Submerged turbines, similar in function to wind turbines, will capture energy through the processes of hydrodynamic, rather than aerodynamic, lift or drag (USDOL, MMS, 2007). The proposed lease specifically authorizes FAU SNMREC to deploy three single-anchor moorings systems attached to mooring and telemetry buoys (MTBs), and test, for limited periods, equipment designed to use the Florida Current to generate electricity on the proposed leasehold. These MTBs are similar to the Navy Oceanographic Meteorological Automatic Device (NOMAD) weather buoys currently deployed throughout U.S. waters. A total of 10 to 13 MTB



deployments are proposed over the lifetime of the project. FAU SNMREC will deploy each MTB at a separate mooring location, and each MTB will require installation, operation, and decommissioning. The Ocean Current Turbine (OCT) device will be equipped with three underwater video cameras, arranged to observe in front of the device as well as to the rear. This video will be recorded for archival and review purposes. The cameras will be low-light, black and white, and the video feed will be displayed in real time on the support vessel. No overnight turbine operations will occur. However, at a later time during the lease period, if FAU SNMREC determines that nighttime operations are required, BOEM will require the submission of a monitoring plan that must be approved by BOEM in consultation with the National Marine Fisheries Service (NOAA Fisheries) and the Service. Annual reports summarizing all video-recorded responses of animals to underwater OCT testing will be provided to BOEM, the Service, and NOAA Fisheries, and video footage will be provided upon request.

Estimates of between 273 and 472 total vessel trips will occur as a result of these activities over the 5-year lease term. The project support vessels are expected to utilize Port Everglades, the Port of Miami, and Fort Pierce, with Port Everglades being the primary port supporting the proposed action. Pursuant to Florida state and local laws, FAU SNMREC will observe established speed limits for operation of their vessels within Manatee Protection Zones (50 CFR 17.108 and FWC, 2011a). In addition, BOEM will also require, through lease stipulations, the additional vessel strike avoidance measures outlined in the EA to reduce or eliminate impacts to all protected species.

FAU SNMREC proposes 12 to 24 annual OCT moored test sessions (up to 5 days duration each, with a minimum 1 day duration) for each MTB. Additionally, FAU SNMREC is constructing a small-scale, open-source, off-the-shelf turbine which imitates the major functional systems of a generic ocean current turbine, and proposes to conduct tow tests on these devices as well as on OCTs that have not been previously tested by manufacturers. Phase 1 of tow testing will evaluate simulated OCT behavior using the main body of the turbine, but replacing the rotor with a 1.5-meter (5-foot) radius drogue chute, also called a "sea anchor". Phase 2 of tow testing will evaluate the electrical generation performance and system integration. Therefore, the electrical generator will be installed along with all control and monitoring equipment and a rotor. All other OCT characteristics and equipment for tow testing will be identical to Phase 1 operations, including the range of tow speeds, depths, location, and duration. The proposed tow testing location area is 22 km (11.8 nm) east of the Fort Pierce inlet, with the center of the area located at 27°28.0' North, 80°2.3' West; its dimensions are approximately 10 km (5.4 nm) north to south by 7 km (3.7 nm) east to west, or 70 square km (20 square nm).

THREATENED AND ENDANGERED SPECIES

West Indian Manatee

BOEM determined the project "may affect, but is not likely to adversely affect" endangered West Indian manatee (manatee; *Trichechus manatus*). The Service notes the project, primarily the vessel traffic associated with the project, occurs within the geographic range of the manatee.

Pursuant to Florida state and local laws, FAU SNMREC will observe established speed limits for operation of their vessels within Manatee Protection Zones (50 CFR 17.108 and FWC, 2011a). Vessel speed restrictions in these zones range from idle speeds up to 25 miles per hour (mph) depending on the area. In addition, BOEM will also require, through lease stipulations, the additional vessel strike avoidance measures outlined in the EA to reduce or eliminate impacts to all protected species. Section 4(e) of the OCS Lands Act extends the U.S. Army Corps of Engineers' (Corps) authority to prevent the obstruction to navigation in the navigable waters of the U.S. from OCS facilities, including the installation of the proposed MTBs. To further protect the manatee, BOEM will require FAU SNMREC to adhere to the conditions outlined in *The Standard Manatee Construction Conditions for In-water Work* (FWC 2011b) for all in-water activity. Based on the above, the Service concurs that the project is not likely to adversely affect the manatee.

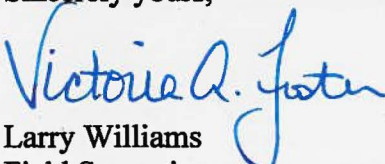
This letter fulfills the requirements of section 7 of the Act and further action is not required. If modifications are made to the project, if additional information involving potential effects to listed species becomes available, or if a new species is listed, reinitiation of consultation may be necessary.

MIGRATORY BIRDS

In order to protect migratory birds and determine diving bird response to the operating turbine, FAU SNMREC has agreed to equip the OCT devices with a camera monitoring system comprised of three underwater video cameras, arranged to observe in front of the device as well as to the rear. Details on the video are discussed in the project description, above. Additionally, no overnight turbine operations will occur and any future, proposed, nighttime operations are required to submit a monitoring plan that must be approved by BOEM in consultation with NOAA Fisheries and the Service. To further reduce the potential to attract and/or disorientate birds at night during fog and rain, BOEM will require FAU SNMREC to leave non-hazard (navigation) lights on when necessary; such lights will be hooded downward and directed when possible to reduce upward illumination and illumination of adjacent waters. To discourage diving birds from using the general area, particularly during testing and operations of OCTs, BOEM will require FAU SNMREC to install anti-perching devices on the buoys as a precautionary measure.

Thank you for your cooperation in the effort to conserve fish and wildlife resources. If you have any questions regarding this letter, please contact Shawn Christopherson at 772-469-4336.

Sincerely yours,


for Larry Williams
Field Supervisor

South Florida Ecological Services Office

cc: electronic only

FWC, Tallahassee, Florida (FWC-CPS)

NOAA Fisheries, West Palm Beach, Florida (Jocelyn Karazsia)

NOAA Fisheries, Miami, Florida (Audra Livergood)

Service, Atlanta, Georgia (Christine Willis)

Service, Tallahassee, Florida (Cindy Fury)

LITERATURE CITED

Florida Fish and Wildlife Conservation Commission (FWC). 2011a. Florida Marine Research Institute, Marine Resources Geographic Information System. Internet website: <http://ocean.floridamarine.org/mrgis/>. Last accessed October 2011.

Florida Fish and Wildlife Conservation Commission. 2011b. Standard Manatee Conditions for In-water Work. Tallahassee, Florida.
http://myfwc.com/media/415448/Manatee_StdCondIn_waterWork.pdf

U.S. Department of the Interior (USDOI), Minerals Management Service (MMS). 2007. Programmatic Environmental Impact Statement for Alternative Energy Development and Production and Alternate Use of Facilities on the Outer Continental Shelf, Final Environmental Impact Statement, October 2007. OCS Report MMS 2007-024.