FINDING OF NO SIGNIFICANT IMPACT
FOR
ENVIRONMENTAL ASSESSMENT ON THE ISSUANCE OF PERMIT #FKNMS-2007-122 FOR TESTING A HYDROKINETIC TURBINE IN SANCTUARY WATERS

Mr. Douglas Bedgood of the Florida Keys Hydropower Corporation is proposing to conduct a one-time, sixty (60)-day test of a hydrokinetic turbine in the waters of the Florida Keys National Marine Sanctuary (FKNMS), near Bahia Honda Channel in the Lower Florida Keys. The activity includes installing a 9" diameter steel pylon into the sea bed, attaching a turbine unit on top of the pylon, and monitoring its operation from a moored barge. The turbine unit and pylon would then be removed from the sanctuary. The turbine will not be hooked up to an electrical grid during the test period. The turbine test will support research on alternative energy technologies.

The Council on Environmental Quality (CEQ) Regulations state that the determination of significance using an analysis of effects requires examination of both context and intensity, and lists ten criteria for intensity (40 CFR 1508.27). In addition, the National Oceanic and Atmospheric Administration Administrative Order (NAO) 216-6 Section 6.01b. 1 - 11 provides eleven criteria, the same ten as the CEQ Regulations and one additional, for determining whether the impacts of a proposed action are significant. Each criterion is discussed below with respect to the proposed action and considered individually as well as in combination with the others.

1. Can the proposed action reasonably be expected to cause both beneficial and adverse impacts that overall may result in a significant effect, even if the effect will be beneficial?

Neither the beneficial nor the adverse effects of the proposed action are expected to be significant. The proposed action includes a monitoring program that is designed to assess any effects of turbine deployment on habitats or species; however, it is not meant to balance any adverse effects of the proposed action. Any adverse impacts are expected to be minor and short-term during the installation, operation, and removal of the equipment from the sanctuary.

2. Can the proposed action reasonably be expected to significantly affect public health or safety?

Public health and safety will not be affected by the proposed action. While the hydrokinetic turbine authorized by the proposed action will be placed in the water, monitored, and removed by SCUBA divers, the Florida Keys National Marine Sanctuary (FKNMS) does not expect the short-term activity of turbine deployment to in and of itself result in any danger to the health and safety of the public. In addition, because the top-side support vessel will keep recreational boaters away from the project site and because the top of the turbine unit will be 14 feet below the surface of the water, the proposed action is not likely to create a hazard to navigation.

3. Can the proposed action reasonably be expected to result in significant impacts to unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?

While the coral reef ecosystem of the Florida Keys is unique as compared to other coral reefs in the world, the site of the proposed action is not unique to the Florida Keys. The turbine unit will be deployed in an area of loose rubble, which is a habitat type that is very common throughout the sanctuary. The area for turbine deployment also does not contain record of any significant archaeological or historical resources.

4. Are the proposed action's effects on the quality of the human environment likely to be highly controversial?

The overall effects to the human environment are expected to be neither positive nor negative (refer to the *Environmental Consequences* section of the Environmental Assessment for a discussion of the socioeconomic impacts). Therefore, the effects are not at all likely to be controversial amongst the residents of the Florida Keys.

5. Are the proposed action's effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

Due to the short-term deployment, small-scale of the project (e.g., one turbine unit only) and contingencies measures in place (biological monitoring plan, continuous top-side monitoring, twice-daily inspections, avoidance of the hurricane season, and contingency plans for storm events or other emergencies), the project as proposed is not expected to incur any measurable impacts on natural ecosystems or the human environment. Therefore, the temporary deployment of the structure for testing purposes is not expected to create any unknown or unique risks.

6. Can the proposed action reasonably be expected to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?

The action as proposed does not establish a precedent for future actions. The project is a one-time, short-term test of experimental equipment that may lead to better scientific understanding of alternative energy options for marine areas. Furthermore, FKNMS has discussed with the applicant and made a special condition of its permit that the allowance of this one-time, brief deployment in no way guarantees positive determinations on future tests or expanded activities within the sanctuary.

7. Is the proposed action related to other actions that when considered together will have individually insignificant but cumulatively significant impacts?

No. The proposed action is expected to have individually insignificant impacts. The biological monitoring program associated with the turbine deployment will aid in quantifying any potential individual marine life impacts from the project. There are no cumulative impacts expected because this is a one-time, brief duration test project whose environmental effects will not synergistically or additively interact with other Federal or non-Federal actions in the area. No other similar tests or projects have been brought to FKNMS for review.

8. Can the proposed action reasonably be expected to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources?

The proposed action will not adversely affect any entity listed in or eligible for listing in the National Register of Historic Places. Nor will the proposed action cause the loss of or destroy any significant scientific, cultural, or historic resources. Refer to the *Affected Environment* section of the Environmental Assessment for a discussion of the lack of cultural resources in the project area.

9. Can the proposed action reasonably be expected to have a significant impact on endangered or threatened species, or their critical habitat as defined under the Endangered Species Act of 1973?

As discussed in detail in the *Environmental Consequences* section of the Environmental Assessment, the proposed action has been found by NOAA Fisheries Protected Resources Division and U.S. Fish and Wildlife Service to not adversely affect any critical habitat or adversely affect the survival of any endangered or threatened species. Department of the Army Corps of Engineers (DA Corps) and FKNMS have coordinated with both agencies to ensure that the permit issued under the proposed action is conditioned in such a manner to minimize or eliminate any risks posed to threatened or endangered species (please refer to the *Affected Environment – Endangered and Threatened Species, and their Critical Habitat* section of the Environmental Assessment).

10. Can the proposed action reasonably be expected to threaten a violation of Federal, state, or local law or requirements imposed for environmental protection?

The proposed action involves the issuance of a permit in accordance with the NMSA to Mr. Douglas Bedgood of Florida Keys Hydropower Corporation to temporarily deploy a hydrokinetic turbine within the boundaries of FKNMS. Furthermore, Mr. Bedgood has already obtained the necessary permission from the DA Corps and Florida Department of Environmental Protection for the project.

11. Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

Under the proposed action, the hydrokinetic turbine would be manufactured on land and brought to the deployment site via barge. The turbine will not be deployed in any other waters of the United States, with the exception of the proposed deployment in the state of Florida. Therefore, the risk of invasion by aquatic nuisance species is minimal to none. FKNMS does not consider the proposed action (Alternative 1) to be one that will affect the status of an invasive species in any way.

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting Environmental Assessment prepared on the issuance of permit #FKNMS-2007-122 for testing a hydrokinetic turbine in sanctuary waters, it is hereby determined that the issuance of permit #FKNMS-2007-122 for testing the hydrokinetic turbine in sanctuary waters will not significantly impact the quality of the human environment as described above and in the supporting Environmental Assessment. In addition, all beneficial and adverse impacts of the proposed action

have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an environmental impact statement for this action is not necessary.

Daniel J. Basta
Director
Office of National Marine Sanctuaries

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