

Federal Energy Regulatory Commission  
Washington, DC 20426  
March 16, 2009

OFFICE OF ENERGY PROJECTS

Project No. 12829-001 – Louisiana  
Greenville Bend Hydrokinetic Project  
Free Flow Power Corporation

Project No. 12861-001 – Louisiana  
Scotlandville Bend Hydrokinetic Project  
FFP Project 28, LLC

Project No. 12921-001 – Louisiana/Mississippi  
Kempe Bend Hydrokinetic Project  
FFP Project 32, LLC

Project No. 12930-001 – Mississippi/Arkansas  
Ashley Point Hydrokinetic Project  
FFP Project 41, LLC

Project No. 12938-001 – Mississippi/Tennessee  
Hope Field Point Hydrokinetic Project  
FFP Project 42, LLC

Project No. 12915-001 – Missouri/Illinois  
Flora Creek Light Hydrokinetic Project  
FFP Project 54, LLC

Project No. 12912-001 – Missouri/Illinois  
McKinley Crossing Hydrokinetic Project  
FFP Project 57, LLC

**Subject: Scoping Document 1 for Greenville Bend (P-12829), Scotlandville Bend (P-12861), Kempe Bend (P-12921), Ashley Point (P-12930) Hope Field Point (P-12938), Flora Creek Light (P-12915), and McKinley Crossing (P-12912) Hydrokinetic Projects.**

To the Party Addressed:

The Federal Energy Regulatory Commission (Commission) is currently reviewing the Pre-Application Document submitted by Free Flow Power Corporation on behalf of itself and six subsidiary limited liability corporations (henceforth collectively identified as “Free Flow Power”) for the licensing of hydrokinetic energy projects in the Mississippi River. The proposed projects are Greenville Bend (Free Flow Power Corporation, P-12829), Scotlandville Bend (FFP Project 8, LLC, P-12861), Kempe Bend (FFP Project 28, LLC, P-12921), Ashley Point (FFP Project 41, LLC, P-12930), Hope Field Point (FFP Project 42, LLC, P-12938), Flora Creek Light (FFP Project 54, LLC, P-12915), and McKinley Crossing (FFP Project 57, LLC, P-12912) Hydrokinetic Projects (collectively identified as the “Lead Projects”). The projects are proposed to be located as follows:

- The Greenville Bend Project stretches between river miles 99.1 and 102.0 in Jefferson and Orleans Parishes near the cities of New Orleans and Marrero, Louisiana.
- The Scotlandville Bend Project stretches between river miles 233.9 and 236.9 in West Baton Rouge and East Baton Rouge Parishes near the city of Baton Rouge, Louisiana.
- The Kempe Bend Project stretches between river miles 381.1 and 386.5 in Tensas Parish, Louisiana, and Jefferson County, Mississippi, near the city of Natchez, Mississippi.
- The Ashley Point Project stretches between river miles 679.1 and 695.5 in the counties of Tunica, Mississippi, and Lee, Arkansas.
- The Hope Field Point Project stretches between river miles 725.0 and 736.9 between Arkansas and Tennessee. It is proposed in the counties of Shelby, Tennessee, and Crittenden, Arkansas, near the cities of Memphis, Tennessee, and West Memphis, Arkansas.
- The Flora Creek Light Project stretches between river miles 51.2 and 58.0 between Missouri and Illinois. It is proposed in the counties of Alexander, and Union, Illinois, and Cape Girardeau, Missouri, near the city of Cape Girardeau, Missouri.

- The McKinley Crossing Project stretches between river miles 182.1 and 184.1 between St. Louis County, Missouri, and St. Clair County, Illinois, and near the cities of St. Louis, Missouri, and Venice and Madison, Illinois.

Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, Commission staff intends to prepare an environmental impact statement (EIS) which will be used by the Commission to determine whether, and under what conditions, to issue original licenses for the projects. To support and assist our environmental review, we are beginning the public scoping process to ensure that all pertinent issues are identified and analyzed, and that the EIS is thorough and balanced.

We invite your participation in the scoping process, and are circulating the attached Scoping Document 1 (SD1) to provide you with information on the Lead Projects. We are also soliciting your comments and suggestions on our preliminary list of issues and alternatives to be addressed in the EIS. We are also requesting that you identify any studies that would help provide a framework for collecting pertinent information on the resource areas under consideration necessary for the Commission to prepare the EIS for the project.

We will hold two initial scoping meetings for the Lead Projects to receive input on the scope of the EIS. A daytime meeting will be held at 2:00 P.M. on April 14, 2009, at **Vicksburg Convention Center**, 1600 Mulberry Street, Vicksburg, Mississippi 39180. An evening meeting will be held at 7:00 P.M. on April 14, 2009, at **Vicksburg Convention Center**, 1600 Mulberry Street, Vicksburg, Mississippi 39180. **In a separate notice, we will announce site visits and additional scoping meetings at multiple locations near the proposed Lead Projects.**

We invite all interested agencies, Indian tribes, non-governmental organizations, and individuals to attend one or all of these meetings. Further information on our site visit and scoping meetings is available in the enclosed SD1.

SD1 is being distributed to both Free Flow Power's distribution list and the Commission's official mailing list (see section 9.0 of the attached SD1). If you wish to be added to or removed from the Commission's official mailing list, please send your request by email to [efiling@ferc.gov](mailto:efiling@ferc.gov) or by mail to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 888 First Street, N.E., Room 1A, Washington, DC 20426. All written or emailed requests must specify your wish to be removed or added to the mailing list and must clearly identify the following on the first page: **Greenville Bend Hydrokinetic Project No. 12829-001, Scotlandville Bend Hydrokinetic Project**

**No. 12861-001, Kempe Bend Hydrokinetic Project No. 12921-001, Ashley Point Hydrokinetic Project No. 12930-001, Hope Field Point Hydrokinetic Project No. 12938-001, Flora Creek Light Hydrokinetic Project No. 12915-001, and McKinley Crossing Hydrokinetic Project No. 12912-001.**

Please review the SD1 and, if you wish to provide comments, follow the instructions in section 6.0, *Request for Information and Studies*. If you have any questions about SD1, the scoping process, or how Commission staff will develop the environmental document for this project, please contact Stephen Bowler at (202) 502-6861 or [Stephen.Bowler@ferc.gov](mailto:Stephen.Bowler@ferc.gov) or Sarah Florentino at (202)502-6863 or [Sarah.Florentino@ferc.gov](mailto:Sarah.Florentino@ferc.gov). Additional information about the Commission's licensing process and the Lead Projects may be obtained from our website, <http://www.ferc.gov>, or Free Flow Power's licensing website, <http://free-flow-power.com/index.php?id=51>.

Enclosure: Scoping Document 1

cc: Mailing List  
Public Files

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SCOPING DOCUMENT 1

GREENVILLE BEND, SCOTLANDVILLE BEND, HOPE FIELD POINT, AND  
MCKINLEY CROSSING HYDROKINETIC PROJECTS

MISSOURI, ILLINOIS, ARKANSAS, TENNESSEE, MISSISSIPPI, LOUISIANA

PROJECT NOS. 12829-001, 12861-001, 12921-001, 12930-001, 12938-001, 12915-001,  
and 12912-001

Federal Energy Regulatory Commission  
Office of Energy Projects  
Division of Hydropower Licensing  
Washington, DC

March 2009

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## SCOPING DOCUMENT 1

**Greenville Bend Hydrokinetic Project No. 12829-001, Scotlandville Bend Hydrokinetic Project No. 12861-001, Kempe Bend Hydrokinetic Project No. 12921-001, Ashley Point Hydrokinetic Project No. 12930-001, Hope Field Point Hydrokinetic Project No. 12938-001, Flora Creek Light Hydrokinetic Project No. 12915-001, and McKinley Crossing Hydrokinetic Project No. 12912-001**

### 1.0 INTRODUCTION

The Federal Energy Regulatory Commission (Commission or FERC), under the authority of the Federal Power Act (FPA),<sup>1</sup> may issue licenses for terms ranging from 30 to 50 years for the construction, operation, and maintenance of non-federal hydroelectric projects. On January 15, 2009 Free Flow Power Corporation, on behalf of itself and 50 subsidiary limited liability corporations (collectively “Free Flow Power”) filed a Pre-Application Document (PAD) and Notice of Intent (NOI) with the Commission covering 55 sites in the Mississippi River between St. Louis, Missouri and New Orleans, Louisiana. On March 13, 2009, Free Flow Power filed a supplement to its PAD. Free Flow Power proposed that seven of the sites be treated as the “Lead Projects” and that pre-filing be initiated for those sites using the Integrated Licensing Process (ILP). The proposed ILP projects are Greenville Bend (Free Flow Power Corporation, P-12829), Scotlandville Bend (FFP Project 8, LLC, P-12861), Kempe Bend (FFP Project 28, LLC , P-12921), Ashley Point (FFP Project 41, P-12930), Hope Field Point (FFP Project 42, P-12938), Flora Creek Light (FFP Project 54, P-12915), and McKinley Crossing (FFP Project 57, P-12912) (collectively identified as the “Lead Projects”). :

- The Greenville Bend Project stretches between river miles 99.1 and 102.0 in Jefferson and Orleans Parishes near the cities of New Orleans and Marrero, Louisiana.
- The Scotlandville Bend Project stretches between river miles 233.9 and 236.9 in West Baton Rouge and East Baton Rouge Parishes near the city of Baton Rouge, Louisiana.

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<sup>1</sup>16 U.S.C. § 791(a)-825(r).

- The Kempe Bend Project stretches between river miles 381.1 and 386.5 in Tensas Parish, Louisiana, and Jefferson County, Mississippi, near the city of Natchez, Mississippi.
- The Ashley Point Project stretches between river miles 679.1 and 695.5 in the counties of Tunica, Mississippi, and Lee, Arkansas.
- The Hope Field Point Project stretches between river miles 725.0 and 736.9 between Arkansas and Tennessee. It is proposed in the counties of Shelby, Tennessee, and Crittenden, Arkansas, near the cities of Memphis, Tennessee, and West Memphis, Arkansas.
- The Flora Creek Light Project stretches between river miles 51.2 and 58.0 between Missouri and Illinois. It is proposed in the counties of Alexander, and Union, Illinois, and Cape Girardeau, Missouri, near the city of Cape Girardeau, Missouri.
- The McKinley Crossing Project stretches between river miles 182.1 and 184.1 between St. Louis County, Missouri, and St. Clair County, Illinois, and near the cities of St. Louis, Missouri, and Venice and Madison, Illinois.

None of the seven proposed Lead Projects would occupy federal lands.

After the seven Lead Projects have completed the study determination phase of the ILP, Free Flow Power would prepare license applications for the other 48 sites under the Commission's Traditional Licensing Process (TLP). Free Flow Power intends that the study plans established in the ILP can be used at the TLP sites. Scoping would be conducted for the TLP sites at a later date.

Ultimately, Free Flow Power proposes to install 180,000 turbine-generators across 55 sites to produce 1,800 MW of average operating generation with a total installed capacity of 7,200 MW. Detailed descriptions of the proposed Lead Projects are provided in section 3.0.

The National Environmental Policy Act (NEPA) of 1969,<sup>2</sup> the Commission's regulations, and other applicable laws require that we independently evaluate the

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<sup>2</sup> National Environmental Policy Act of 1969, as amended (Pub. L. 91-190. 42 U.S.C. § 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258, § 4(b), Sept. 13, 1982).

environmental effects of licensing the Lead Projects as proposed, and also consider reasonable alternatives to the applicants' proposed action. At this time, we intend to prepare an environmental impact statement (EIS) that describes and evaluates the probable effects, including an assessment of the site-specific and cumulative effects, if any, of the proposed action and alternatives. The EIS preparation will be supported by a scoping process to ensure identification and analysis of all pertinent issues.

In addition to the Commission, other agencies will need information for their analysis as well. Free Flow Power intends its PAD and subsequent studies to be used by all the agencies, particularly the Commission and U.S. Army Corps of Engineers (Corps), in developing a record that can be used to prepare a single environmental document covering the range of issues and approvals. This scoping process will help the Commission, the Corps, and others identify the pertinent issues to be analyzed in reviewing the Free Flow Power proposal.

## **2.0 SCOPING**

This Scoping Document 1 (SD1) is intended to advise all participants as to the proposed scope of the EIS and to seek additional information pertinent to this analysis. This document contains: (1) a description of the scoping process and schedule for the development of the EIS; (2) a description of the proposed action and alternatives; (3) a preliminary identification of environmental issues and proposed studies; (4) a request for comments and information; (5) a proposed EIS outline; and (6) a preliminary list of comprehensive plans which are applicable to the projects.

### **2.1 Purposes of Scoping**

Scoping is the process used to identify issues, concerns, and opportunities for enhancement or mitigation associated with a proposed action. According to NEPA, the process should be conducted early in the planning stage of the projects. The purposes of the scoping process are as follows:

- invite participation of federal, state and local resource agencies, Indian tribes, non-governmental organizations (NGOs), and the public to identify significant environmental and socioeconomic issues related to the proposed projects;
- determine the resource issues, depth of analysis, and significance of issues to be addressed in the EIS;
- identify how the projects would or would not contribute to cumulative effects in the project areas;
- identify reasonable alternatives to the proposed action that should be evaluated in the EIS;
- solicit, from participants, available information on the resources at issue, including existing information and study needs; and
- determine the resource areas and potential issues that do not require detailed analysis during review of the projects.

## 2.2 Comments, Scoping Meetings, and Site Visits

During the preparation of the EIS, there will be several opportunities for the resource agencies, Indian tribes, NGOs, and the public to provide input. These opportunities occur:

- during the public scoping process and study plan meetings, when we solicit oral and written comments regarding scoping of the issues and analysis for the EIS;
- in response to the Commission's ready for environmental analysis notice; and
- after issuance of the EIS when we solicit written comments on the EIS.

In addition to written comments solicited by this SD1, we will hold two initial public scoping meetings in the vicinity of the proposed projects. A daytime meeting will focus on concerns of the resource agencies, NGO's, and Indian tribes, and an evening meeting will focus on receiving input from the public. **We will announce additional scoping meetings at locations near the proposed Lead Projects and site visits at a later date.** We invite all interested agencies, Indian tribes, NGOs, and individuals to attend one or all of the meetings and the site visits to assist us in identifying the scope of environmental issues that should be analyzed in the EIS. The times and locations of the initial meetings are as follows:

### Daytime Scoping Meeting

Date and Time: Tuesday, April 14, 2009, 2:00 P.M.  
Location: **Vicksburg Convention Center**  
1600 Mulberry Street  
Vicksburg, MS 39180  
Phone Number: toll free (866) 822-6338

### Evening Scoping Meeting

Date and Time: Tuesday, April 14, 2009, 7:00 P.M.  
Location: **Vicksburg Convention Center**  
1600 Mulberry Street  
Vicksburg, MS 39180  
Phone Number: toll free (866) 822-6338

The scoping meetings will be recorded by a court reporter, and all statements (verbal and written) will become part of the Commission's public record for the projects. Before each meeting, all individuals who attend, especially those who intend to make statements, will be asked to sign in and clearly identify themselves for the record. Interested parties who choose not to speak or who are unable to attend the scoping meetings may provide written comments and information to the Commission as described in section 6.0. These meetings are posted on the Commission's calendar located on the internet at <http://www.ferc.gov/EventCalendar/EventsList.aspx>, along with other related information.

Meeting participants should come prepared to discuss their issues and/or concerns as they pertain to the licensing of the Lead Projects. It is advised that participants review the PAD in preparation for the scoping meetings. Copies of the PAD are available for review at the Commission in the Public Reference Room or may be viewed on the Commission's website (<http://www.ferc.gov>), using the "eLibrary" link. Enter the docket numbers, 12829, 12861, 12921, 12930, 12938, 12915, and 12912, to access the documents. For assistance, contact FERC Online Support at [FERCONlineSupport@ferc.gov](mailto:FERCONlineSupport@ferc.gov) or toll free at 1-866-208-3676, or for TTY, (202) 502-8659. A copy of the PAD is also available for inspection and reproduction at the following address: Free Flow Power Corporation, 33 Commercial Street, Gloucester, MA 01930.

Following the scoping meetings and comment period, all issues raised will be reviewed and decisions made as to the level of analysis needed. If preliminary analysis indicates that any issues presented in this scoping document have little potential for causing significant effects, the issue(s) will be identified and the reasons for not providing a more detailed analysis will be given in the EIS.

If we receive no substantive comments on SD1, then we will not prepare a Scoping Document 2 (SD2). Otherwise, a SD2 addressing any substantive comments received will be issued for informational use only by all participants or interested persons; no response will be required. The EIS will address recommendations and input received during the scoping process.

### **3.0 PROPOSED ACTION AND ALTERNATIVES**

In accordance with NEPA, the environmental analysis will consider the following alternatives, at a minimum: (1) the no-action alternative, (2) the applicant's proposed action, and (3) alternatives to the proposed action.

#### **3.1 No-action Alternative**

Under the no-action alternative, the applicant's proposed projects would not be built (i.e., there would be no change to the existing environment). No new environmental protection, mitigation, or enhancement measures would be implemented. We use this alternative to establish baseline environmental conditions for comparison with other alternatives.

#### **3.2 Applicant's Proposal**

Free Flow Power proposes to install about 180,000 in-stream turbine-generators in a section of the Mississippi River stretching between St. Louis, Missouri and New Orleans, Louisiana, mounted on a variety of stationary or floating structures. Free Flow Power would also implement certain environmental protection, mitigation, and enhancement measures. The current preliminary permits for the Lead Projects expire on December 31, 2010.

##### **3.2.1 Proposed Project Facilities and Operations**

Each project would consist of multiple arrays of 6-turbine-generators mounted on a variety of stationary or floating structures. The structures and equipment would be placed between 9 and 55 feet below Low Water Reference Plane, depending on the U.S. Army Corps of Engineers (Corps) requirement for each site. The turbines would have a typical rated installed capacity of 10 kW each (ranging from 3 to 40 kW) and would be installed to capture energy from flow velocities ranging from 2 to 4 meters per second.

Free Flow Power is developing its own turbine generators, but is considering using others as well. The Free Flow technology is developing a ducted turbine with a rim-mounted, direct-drive, water-lubricated generator. The technology has been tested using a scale (one meter diameter) prototype in the dry and in a flume.

Free Flow Power plans to use two types of turbine generators. At sites of relatively stable flow velocity, single speed turbines with induction generators would be

deployed. At sites of fluctuating flow velocities, variable speed turbines with permanent magnet generators would be used. Underwater cables would transmit generated power to various substations located on shore at between 3.5 and 15 kV as either 3-phase AC (induction generator sites) or 2-wire DC current (magnet generators).

The four ILP sites are described as follows:

- For the Greenville Bend Project, P-12829, Free Flow Power proposes to employ 1,740 turbine-generators, providing an average operating capacity of 17.4 MW and an installed capacity of 69.6 MW.<sup>3</sup>
- For the Scotlandville Bend Project, P-12861, Free Flow Power proposes to employ 1,800 turbine-generators, providing an average operating capacity of 18.0 MW and an installed capacity of 72.0 MW.
- For the Kempe Bend Project, P-12921, Free Flow Power proposes to employ 3,240 turbine-generators, providing an average operating capacity of 32.4 MW and an installed capacity of 129.6 MW.
- For the Ashley Point Project, P-12930, Free Flow Power proposes to employ 9,840 turbine-generators, providing an average operating capacity of 98.4 MW and an installed capacity of 393.6 MW.
- For the Hope Field Point Project, P-12938, Free Flow Power proposes to employ 7,140 turbine-generators, providing an average operating capacity of 71.4 MW and an installed capacity of 285.6 MW.
- For the Flora Creek Light Project, P-12915, Free Flow Power proposes to employ 4,080 turbine-generators, providing an average operating capacity of 40.8 MW and an installed capacity of 163.2 MW.
- For the McKinley Crossing Project, P-12912, Free Flow Power proposes to employ 1,200 turbine-generators, providing an average operating capacity of 12 MW and an installed capacity of 48 MW.

Free Flow Power's Lead Projects would have a total average operating capacity of 290 MW and a total installed capacity of 1,162MW.

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<sup>3</sup> The methodology for determining dependable capacity has not been reviewed.

### **3.2.2 Proposed Environmental Measures**

Because the Greenville Bend, Scotlandville Bend, Kempe Bend, Ashley Point, Hope Field Point, Flora Creek Light, and McKinley Crossing Hydrokinetic Projects are original projects, Free Flow Power has not implemented any existing environmental measures at these sites. Free Flow Power has proposed the following environmental measures to protect and enhance environmental resources of the project areas.

#### **Navigation, Dredging, and the Maintenance of Existing Physical Structures**

- Ensure placement of the turbine generator arrays in locations that conform to the Corps' specifications for depths below the navigational channel in areas which will not be dredged.
- Assess, in conjunction with the Corps and coastal zone management agencies, the potential for scouring and silting close to channel and flood control infrastructure.
- Work with the Coast Guard and the Corps to design an acceptable installation program and appropriate markers for the project sites.
- Coordinate with the Coast Guard and the Corps relating to the schedule for installation and maintenance of equipment at project sites.
- Develop an emergency response and salvage plan.

#### **Geologic and Soil Resources**

- Follow best management practices during construction of the projects to avoid and minimize potential effects to sediment and soils.

#### **Aquatic Resources**

- Employ latest accepted norms for construction to minimize spills of fuel and other hazardous materials.
- Follow best practice standards for activities during operation and maintenance subsequent to construction.

- Investigate alternatives in cable deployment to minimize or avoid disrupting riverbed habitats.
- Calculate the expected frequencies and levels of electromagnetic fields and sonic noise for system components, including the Turbine Generators and cabling and compare to thresholds for species identified in literature.
- Increase distance between rotor and stator vanes of Turbine Generator to reduce risk of fish strike.
- Eliminate high-velocity flow gaps in Turbine Generator structure where fish might be subject to abrasion or grinding.
- Avoid known mussel beds.

### **Terrestrial Resources**

- Follow all local, county, state, and federal regulations pertaining to wetlands to minimize potential project effects on wetlands, riparian, and littoral habitat within the transmission line corridors during construction.
- Consult with resource agencies on methods to minimize potential project effects to botanical species and wildlife, such as diving birds, in the project areas.
- Comply with all requirements of the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act, including requirements to maintain appropriate buffers, in terms of distance and timing.
- Survey project sites prior to siting on-land infrastructure for colonial bird nesting areas or bald eagle nests and, if present, consult with state agencies and FWS on appropriate measures to minimize impact, including restricting construction to non-nesting periods and maintaining appropriate buffer zones.
- Exercise appropriate caution if any work is to be done in the vicinity of identified bald eagle nests, report any newly identified nests, and consult

with state and federal authorities on steps to minimize any adverse impact to bald eagles.

### **Threatened and Endangered Species**

- Continue to work with resource agencies to minimize project effects to rare, threatened, and endangered species in the vicinity of the project sites.
- Free Flow Power would be vigilant of the potential presence of West Indian manatees within project sites and will avoid sea-grass beds.
- Consult with FWS and appropriate state authorities should construction be performed during Louisiana black bear denning season or if actual or candidate den trees are affected, including any tree used by a denning bear during the winter or any bald cypress and tupelo gum trees with visible cavities, having a diameter at breast height of 36 inches or greater and occurring in or along a water body.
- Abide by conservation measures prohibiting tree removal if it is likely to affect Indiana bat roosting or maternity trees.
- Prior to siting on-land infrastructure, Free Flow Power would survey the project areas to determine if nesting colonies of piping plover, interior least tern, or brown pelicans are present. If present, Free Flow Power would consult with state agencies and FWS on appropriate measures to minimize impact, including restricting construction to non-nesting season and/or maintaining appropriate distances from nesting colonies.
- Avoid siting infrastructure in known mussel beds, including beds of federally listed mussel species.

### **Recreation and Land Use**

- Avoid sites of recreational significance when installing onshore equipment.
- Consult with federal and state agencies and non-governmental organizations to avoid impinging on recreational uses.

- Develop and implement an emergency response and salvage plan to be executed to avoid any adverse impact in case of damage to individual or multiple recreation units.

### **Cultural Resources**

- Avoid sites of cultural significance, such as shipwrecks, when installing the turbine arrays on the riverbed.
- Avoid sites of cultural, historic, or Tribal significance when installing equipment in the project areas.
- Install onshore transmission lines to avoid the visual impairment of cultural, historic, recreational, or Tribal sites.
- Report any findings of cultural resources, such as shipwrecks, located during the course of site surveys to appropriate authorities.

### **Aesthetic Resources**

- Install onshore transmission lines to avoid the visual impairment of cultural, historic, recreational, or Tribal sites.

## **3.3 Alternatives to the Proposed Action**

Commission staff will consider and assess all alternative recommendations for operational or facility modifications, as well as protection, mitigation, and enhancement measures identified by us, the agencies, Indian tribes, NGOs, and the public.

## **4.0 SCOPE OF CUMULATIVE EFFECTS AND SITE-SPECIFIC RESOURCE ISSUES**

### **4.1 Cumulative Effects**

According to the Council on Environmental Quality's regulations for implementing NEPA (50 C.F.R. 1508.7), a cumulative effect is the effect on the environment that results from the incremental effect of the action when added to other past, present and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal)

or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time, including hydropower and other land and water development activities.

#### **4.1.1 Resources That Could be Cumulatively Affected**

Based on information in the PAD and preliminary staff analysis, we have identified the following resources that may be cumulatively affected by the proposed operation of the project: aquatic (including water quality and fishery resources), wetlands and terrestrial resources, commercial navigation, recreation.

#### **4.1.2 Geographic Scope**

Our geographic scope of analysis for cumulatively affected resources is defined by the physical limits or boundaries of: (1) the proposed action's effect on the resources, and (2) contributing effects from other hydropower and non-hydropower activities within the Mississippi River basin. Because the proposed action would affect the resources differently, the geographic scope for each resource may vary.

At this time, we have tentatively identified the middle and lower Mississippi River basin as our geographic scope of analysis for aquatic resources. On initial review, this large reach of river appears to capture most of life history of the aquatic species at issue. A large amount of commercial barge traffic navigates the river carrying thousands of tons of products daily to and from the upper Mississippi, Ohio, and Missouri Rivers. We propose the scope for cumulative effects on navigation to extend to the limits of significant commercial navigation in the drainage. By contrast, we propose the geographic scope for terrestrial resources to encompass the channel and riparian zones of the middle and lower Mississippi River.

The Lead Projects would be 7 of 55 proposed hydrokinetic projects located on the Mississippi River. At these sites, we will focus within the project boundary on the channel, turbine arrays, transmission corridor and riparian. We will focus on a portion of the river extending two times the project length upstream and about five times the project length downstream.

#### **4.1.3 Temporal Scope**

The temporal scope of our cumulative effects analysis in the EIS will include a discussion of past, present, and future actions and their effects on each resource that could

be cumulatively affected. Based on the potential term of a license, the temporal scope will look 30-50 years into the future, concentrating on the effect to the resources from reasonably foreseeable future actions. The historical discussion will, by necessity, be limited to the amount of available information for each resource. The quality and quantity of information, however, diminishes as we analyze resources further away in time from the present.

## **4.2 Resource Issues**

In this section, we present a preliminary list of environmental issues to be addressed in the EIS. We have identified these issues, which are listed by resource area, by reviewing information in the PAD on the Lead Projects. This list is not intended to be exhaustive or final, but contains those issues raised to date that could have substantial effects. After the scoping process is complete, we will review the list and determine the appropriate level of analysis needed to address each issue in the EIS. Those issues identified by an asterisk (\*) will be analyzed for both cumulative and site-specific effects.

### **4.2.1 Navigation, Engineering, Geomorphology, and Water Resource**

- Effect of installation and maintenance of turbines on navigation, levee maintenance, including revetment placement, mat sinking, dredging, anchorage, construction, and other existing operations. Duration of construction. Frequency and duration of maintenance events. Flow conditions expected or desired for construction and maintenance operations. Frequency and duration of any proposed channel closings. Channel control measures proposed for installation and maintenance.\*
- Dredge and fill associated with installation and maintenance of the proposed projects.
- Effects of project construction, operation, and maintenance on utility crossings and bridge crossings.
- Transmission cable safety for recreation and maintenance activities.
- Effects on Mississippi River flow lines, sediment transport, and the overall U.S. Army Corps of Engineers Mississippi River and Tributaries Project.\*
- Necessary and appropriate turbine clearance relative to the Low Water

Reference Plane. Availability of turbine siting locations given Corps' proposed conditions for avoidance of conflicts with navigation.

- Survival of turbine arrays under stress from flood conditions, impact of submerged debris, added stress associated with trapped debris, or strike by a vessel.
- Effect on structural stability of any turbine proposed for mounting on an existing structure (bridge support, revetment structure, etc.).
- Effects of project construction, operation, maintenance, and project-related recreation on shoreline erosion.
- Effects of sedimentation and floating debris on equipment function, mounting system, and efficiency.
- Hydraulic effects of equipment on flooding, safety, sedimentation, and navigation.

#### **4.2.2 Aquatic Resources**

- Effects of the movement of turbine blades (individual and cumulative) on fish including the potential for fish strike and turbine mortality.
- Effects of the presence of turbine arrays (individual and cumulative) on fish behavior, movement, and habitat use including the potential of habitat avoidance.
- Effects of electromagnetic fields (individual and cumulative) from the generators and transmission lines on aquatic species movement and habitat.
- Effect of noise and vibration (individual and cumulative) from turbines during operation on aquatic species movement and habitat.
- Effects of noise during installation of turbine arrays and project operation on aquatic species movement and habitat.
- Effects of project construction, operation, and maintenance on water quality parameters such as total dissolved gasses, water temperature, toxic

compound concentrations, macrophyte growth, and pH.

- Effects of the project on woody debris transport and recruitment, sediment transport, and the abundance of aquatic vegetation.

#### **4.2.3 Terrestrial Resources**

- Effects of project construction and operation on bald eagles and other raptors; diving birds; colonial nesting birds; and other migratory birds.
- Effects of installing underground cable on terrestrial resources.
- Effects of construction and maintenance of substations on terrestrial resources.
- Effects of installation of primary transmission lines on terrestrial resources including the establishment and spread of invasive species, along both new and existing right-of-ways.
- Both temporary and permanent potential impacts to wetlands from use of construction staging areas, installation of transmission cable, construction and maintenance of turbine arrays and substations, and use of recreation facilities in the project areas.
- Effects of maintenance activities (e.g., road maintenance, transmission line maintenance and rights-of-way vegetation management) and project-related recreation on wildlife habitat and wildlife, including the establishment and spread of invasive species.\*
- Effects of offsite and shore-side staging and construction activities on erosion, habitat, and competing uses.

#### **4.2.4 Threatened and Endangered Species**

- Effects of construction, installation, and maintenance of the transmission cables and substations on potentially occurring federally listed species, both aquatic and terrestrial, including the interior least tern.

- Effects of fish strikes and sediment process changes on:
  - The federally endangered pallid sturgeon (listed); and
  - Federally threatened Gulf sturgeon.
- Indirect effects through fish host species and sediment processes and direct effects through installation and maintenance of turbines on federally listed mussels.

#### **4.2.5 Recreation and Land Use**

- Effects of project operations on boating safety (e.g., hydraulic effects, entanglement with anchor lines or fishing gear) within the project boundaries.
- Effects of project construction and project operations on existing recreation access in the project boundaries.

#### **4.2.6 Cultural Resources**

- Effects of the proposed action and alternatives on properties included in, or eligible for inclusion in, the National Register of Historic Places.

#### **4.2.7 Aesthetic Resources**

- Effects of project facilities and reservoir operations on the aesthetic/visual experience of visitors and residents using project lands and waters.

#### **4.2.8 Socioeconomics**

- Effects of the project (energy costs and project-related recreation) on the local economies in the middle and lower Mississippi River basin.

#### **4.2.9 Developmental Resources**

- Effects of project maintenance on the energy and capacity benefits of the project and effects of funding various protection, mitigation, and enhancement measures on the cost of project power.

## 5.0 PROPOSED STUDIES

Depending upon the findings of studies completed by Free Flow Power and the recommendations of the consulted entities, Free Flow Power will consider, and may propose certain other measures to enhance environmental resources affected by the project as part of the proposed action. Free Flow Power's initial study proposals are identified by resource area in table 1. Some studies have overlapping objectives and are thus duplicated. These studies are identified by shading. Detailed information on Free Flow Power's initial study proposals can be found in the PAD. Further studies may need to be added to this list based on comments provided to FERC and Free Flow Power from interested participants, including Indian tribes.

Table 1. Free Flow Power's Initial Study Proposals. (Source: PAD)

Resource Area and Issue	Proposed Study/Information Need <sup>1</sup>
<b>Engineering</b>	
Avoidance of adverse impact on existing structures required for flood control and channel maintenance	Free Flow Power proposes to assess appropriate locations for placing pilings and other infrastructure at each project site so that it will not compromise existing structures. Free Flow Power would also assess the potential for scouring and silting close to channel and flood control infrastructure.
<b>Aquatic Resources</b>	
Injury to fish from Free Flow Power's turbine generators	Free Flow Power proposes to conduct a tank-based study to assess the probability and nature of injury to fish, including potential host fish for mussels.
Effect of electromagnetic field (EMF)	Free Flow Power proposes to conduct a literature-based survey of EMF thresholds for relevant species and compare to the EMF levels produced by Free Flow Power Turbine Generators and their deployment systems.
Effect of noise/vibration	Free Flow Power proposes to conduct a literature-based survey of the effects of noise and vibration on aquatic communities and engage in further consultation with FWS.
Impact to mussel beds	Free Flow Power proposes to avoid known mussel beds and will study the nature and probability of injury to host fish.
Potential for increased sedimentation – habitat alteration	Free Flow Power proposes to conduct a literature- and modeling-based study on potential for habitat alteration and potential for increased sedimentation and will engage in further consultation with FWS.

Resource Area and Issue	Proposed Study/Information Need <sup>1</sup>
Impacts to paddlefish and fresh water drum	Free Flow Power proposes to conduct a tank study to investigate direct and delayed mortality.
Impact of installation/removal on aquatic community	Free Flow Power proposes to conduct a literature-based survey of the effects of construction activity on the aquatic community.
<b>Terrestrial Resources</b>	
Effect of transmission lines on terrestrial and aquatic species and habitats	Free Flow Power proposes to conduct a literature-based study on potential impact of transmission lines on terrestrial species and habitats, including wetlands.
<b>Rare, threatened, and endangered (RTE) species</b>	
Potential impacts to RTE species	Free Flow Power proposes to conduct an experimental tank study to investigate direct and delayed mortality is needed to determine potential effects to pallid sturgeon. In addition, further analysis of sensitivity to electric and magnetic fields potentially produced by Free Flow Power turbine generators will also be necessary.
	Free Flow Power proposes to conduct an experimental tank study to investigate direct and delayed mortality is potentially needed to determine potential effects to Alabama shad.
	Free Flow Power proposes to survey each on shoring point for pondberry, decurrent false aster, small whorled pogonia, Virginia sneezewood, Mead's milkweed, and running buffalo clover before siting onshore infrastructure, and would consult with resource agencies to minimize any adverse impact.

## 6.0 REQUEST FOR INFORMATION AND STUDIES

We are asking federal, state, and local resource agencies, Indian tribes, NGOs, and the public to forward to the Commission any information that will assist us in conducting an accurate and thorough analysis of the project-specific and cumulative effects associated with licensing the Lead Projects. The types of information requested include, but are not limited to:

- information, quantitative data, or professional opinions that may help define the geographic and temporal scope of the analysis (both site-specific and cumulative effects), and that helps identify significant environmental issues;
- identification of, and information from, any other EIS, environmental assessment, or similar environmental study (previous, on-going, or planned) relevant to the licensing proposal;
- existing information and any data that would help to describe the past and present actions and effects of the projects and other developmental activities on environmental and socioeconomic resources;
- information that would help characterize the existing environmental conditions and habitats;
- the identification of any federal, state, or local resource plans, and any future project proposals in the affected resource area (e.g., proposals to construct or operate water treatment facilities, recreation areas, water diversions, timber harvest activities, or fish management programs), along with any implementation schedules);
- documentation that the proposed projects would or would not contribute to cumulative adverse or beneficial effects on any resources. Documentation can include, but need not be limited to, how the projects would interact with other projects in the area and other developmental activities; study results; resource management policies; and reports from federal and state agencies, local agencies, Indian tribes, NGOs, and the public;
- documentation showing why any resources should be excluded from further study or consideration; and

- study requests by federal and state agencies, local agencies, Indian tribes, NGOs, and the public that would help provide a framework for collecting pertinent information on the resource areas under consideration necessary for the Commission to prepare the EIS for the projects.

All requests for studies filed with the Commission must meet the criteria found in Appendix A: Study Plan Criteria.

The requested information, comments, and study requests should be submitted in writing to the Commission no later than May 15, 2009. All filings must clearly identify the following on the first page: **Greenville Bend Hydrokinetic Project No. 12829-001, Scotlandville Bend Hydrokinetic Project No. 12861-001, Kempe Bend Hydrokinetic Project No. 12921-001, Ashley Point Hydrokinetic Project No. 12930-001, Hope Field Point Hydrokinetic Project No. 12938-001, Flora Creek Light Hydrokinetic Project No. 12915-001, and McKinley Crossing Hydrokinetic Project No. 12912-001.** Address all communications to:

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E., Room 1A  
Washington, DC 20426

All filings sent to the Secretary of the Commission should contain an original and eight copies. Failure to file an original and eight copies may result in appropriate staff not receiving the benefit of your comments in a timely manner. Scoping comments may be filed electronically via the Internet in lieu of paper. See 18 CFR 385.2001(a)(1)(iii) and the instructions on the Commission's web site (<http://www.ferc.gov/docs-filing/ferconline.asp>) under the "e-Filing" link. For assistance, please contact FERC Online Support at [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov) or toll free at 1-866-208-3676, or for TTY, (202) 502-8659. The Commission strongly encourages electronic filings.

Register online at <http://www.ferc.gov/esubscription.asp> to be notified via email of new filings and issuances related to this or other pending projects. For assistance, please contact FERC Online Support.

In addition, there is a "Quick Comment" option available, which is an easy method for interested persons to submit text only comments on a project. The Quick-Comment User Guide can be viewed at <http://www.ferc.gov/docs-filing/efiling/quick-comment-guide.pdf>. Quick Comment does not require a FERC eRegistration account; however,

you will be asked to provide a valid email address. All comments submitted under either eFiling or the Quick Comment option are placed in the public record for the specified docket.

Any questions concerning the scoping meetings or how to file written comments with the Commission should be directed to Stephen Bowler at (202) 502-6861 or [stephen.bowler@ferc.gov](mailto:stephen.bowler@ferc.gov) or Sarah Florentino at (202) 502-6863 and [sarah.florentino@ferc.gov](mailto:sarah.florentino@ferc.gov). Additional information about the Commission's licensing process and the Lead Projects may be obtained from the Commission's website, [www.ferc.gov](http://www.ferc.gov).

## 7.0 EIS PREPARATION SCHEDULE

At this time, we anticipate the need to prepare a draft and final EIS. The draft EIS will be sent to all persons and entities on the Commission's service and mailing lists for the Lead Projects. The EIS will include our recommendations for operating procedures, as well as environmental protection and enhancement measures that should be part of any license issued by the Commission. All recipients will then have 60 days to review the EIS and file written comments with the Commission. All comments on the draft EIS filed with the Commission will be considered in preparation of the Final EIS.

The major milestones, including those for preparing the EIS, are as follows:

<u>Major Milestone</u>	<u>Target Date</u>
Scoping Meetings	April 2009
License Application Filed	December 2010
Ready for Environmental Analysis Notice Issued	March 2011
Deadline for Filing Comments, Recommendations and Agency Terms and Conditions/Prescriptions	May 2011
Draft EIS Issued	October 2011
Comments on Draft EIS Due	December 2011
Deadline for Filing Modified Agency Recommendations	April 2012
Final EIS Issued	

If Commission staff determines that there is a need for an additional season of studies before the application is filed, additional information, or additional studies in response to the application, all subsequent milestones would be delayed by the time amount of allowed for Free Flow Power's to respond to the Commission's request. A

copy of Free Flow Power's process plan, which has a complete list of licensing milestones for the Lead Projects, including those for developing the license application, is attached as Appendix B to this SD1.

## **8.0 PROPOSED EIS OUTLINE**

The preliminary outline for the Lead Projects' EIS is as follows:

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## APPENDICES

A--License Conditions Recommended by Staff\*

B--Response to Comments on the Draft Environmental Impact Statement\*

C--Mandatory Conditions from agencies (i.e., authorities under 4(e) and FPA)\*

## 9.0 COMPREHENSIVE PLANS

Section 10(a)(2) of the FPA, 16 U.S.C. section 803(a)(2)(A), requires the Commission to consider the extent to which a project is consistent with federal and state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by a project. The staff has preliminarily identified and reviewed the plans listed below that may be relevant to the Lead Projects. Agencies are requested to review this list and inform the Commission staff of any changes. If there are other comprehensive plans that should be considered for this list that are not on file with the Commission, or if there are more recent versions of the plans already listed, they can be filed for consideration with the Commission according to 18 CFR 2.19 of the Commission's regulations. Please follow the instructions for filing a plan at <http://www.ferc.gov/industries/hydropower/gen-info/licensing/complan.pdf>.

The following is a list of comprehensive plans currently on file with the Commission that may be relevant to the Lead Projects.

### Arkansas

Arkansas Department of Parks and Tourism. 1985 Statewide Comprehensive Outdoor Recreation Plan (SCORP). Little Rock, Arkansas. December 1984.

U.S. Fish and Wildlife Service. Undated. Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service. Washington, D.C.

### Illinois

Illinois Department of Conservation. 1983. Outdoor recreation in Illinois: 1983 policy plan. Springfield, Illinois. November 1983. 100 pp.

Illinois Environmental Protection Agency. 1992. Illinois water quality management plan. Springfield, Illinois. December 1992. 100 pp.

U.S. Fish and Wildlife Service. 1993. Upper Mississippi River & Great Lakes region joint venture implementation plan: A component of the North American waterfowl management plan. March 1993.

U.S. Fish and Wildlife Service. Undated. Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service. Washington, D.C.

U.S. Fish and Wildlife Service. Upper Mississippi River & Great Lakes Region Joint Venture Implementation Plan: A Component of the North American Waterfowl Management Plan. March 1993.

### **Kentucky**

Kentucky Department of Local Government. 1995. Outdoor recreation in Kentucky. A five-year assessment and policy plan, 1995-1999. Frankfort, Kentucky. January 1995.

Kentucky Division of Water. National Park Service. 1992. Kentucky rivers assessment. Department of the Interior, Atlanta, Georgia. 264 pp.

U.S. Fish and Wildlife Service. Undated. Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service. Washington, D.C.

### **Louisiana**

Gulf States Marine Fisheries Commission. 2006. The striped bass fishery of the Gulf of Mexico, United States: A regional management plan. Ocean Springs, Mississippi. March 2006.

Louisiana Department of Culture, Recreation and Tourism. 1994. Louisiana Statewide Comprehensive Outdoor Recreation Plan (SCORP), 1993-1998: information base for executive decision. Baton Rouge, Louisiana.

U.S. Fish and Wildlife Service. Gulf States Marine Fisheries Commission. 1995. Gulf sturgeon recovery/management plan. Atlanta, Georgia. September 15, 1995.

U.S. Fish and Wildlife Service. Canadian Wildlife Service. 1986. North American waterfowl management plan. Department of the Interior. Environment Canada. May 1986.

U.S. Fish and Wildlife Service. 1990. Gulf Coast joint venture plan: A component of the North American waterfowl management plan. June 1990.

U.S. Fish and Wildlife Service. Undated. Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service. Washington, D.C.

## Mississippi

Gulf States Marine Fisheries Commission. 2006. The striped bass fishery of the Gulf of Mexico, United States: A regional management plan. Ocean Springs, Mississippi. March 2006.

Mississippi Department of Economic Development. 1982. Mississippi comprehensive intermodal transportation plan: ports and waterways. Jackson, Mississippi. September 1982.

Mississippi Department of Wildlife, Fisheries, and Parks. 1990. Mississippi State Comprehensive Outdoor Recreation Plan (SCORP). Jackson, Mississippi. November 2, 1990.

National Marine Fisheries Service. 1995. Gulf sturgeon (*Acipenser oxyrinchus desotoi*) Recovery/Management Plan. Prepared by the Gulf Sturgeon Recovery/Management Task Team. September 15, 1995.

U.S. Fish and Wildlife Service. Gulf States Marine Fisheries Commission. 1995. Gulf sturgeon recovery/management plan. Atlanta, Georgia. September 15, 1995.

U.S. Fish and Wildlife Service. Canadian Wildlife Service. 1986. North American waterfowl management plan. Department of the Interior. Environment Canada. May 1986.

U.S. Fish and Wildlife Service. 1990. Gulf Coast joint venture plan: A component of the North American waterfowl management plan. June 1990.

U.S. Fish and Wildlife Service. Undated. Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service. Washington, D.C.

## Missouri

Missouri Department of Natural Resources. 1985. Missouri regional watershed assessment: a basin-by-basin compilation of water problems and issues. Rolla, Missouri. 228 pp.

Missouri Department of Natural Resources. 1986. Missouri water atlas. Jefferson City, Missouri. 97 pp.

Missouri Department of Natural Resources. 2003. Statewide Comprehensive Outdoor Recreation Plan (SCORP) 2002 - 2007. Jefferson City, Missouri. March 2003.

Missouri Department of Natural Resources. Undated. Missouri water quality basin plans. Jefferson City, Missouri. Eight volumes.

U.S. Fish and Wildlife Service. 1993. Upper Mississippi River & Great Lakes region joint venture implementation plan: A component of the North American waterfowl management plan. March 1993.

U.S. Fish and Wildlife Service. Undated. Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service. Washington, D.C.

## **Tennessee**

Tennessee Department of Conservation. 1984. Tennessee State outdoor recreation planning report. Nashville, Tennessee. December 1984.

U.S. Fish and Wildlife Service. Undated. Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service. Washington, D.C.

## 10.0 MAILING LIST

The list below is the Commission's official mailing list for the Lead Projects (FERC Nos. 12829, 12861, 12921, 12930, 12938, 12915, and 12912 respectively). If you want to receive future mailings for the Lead Projects and are not included in the list below, please send your request by email to [efiling@ferc.gov](mailto:efiling@ferc.gov) or by mail to: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 888 First Street, N.E., Room 1A, Washington, DC 20426. All written and emailed requests to be added to the mailing list must clearly identify the following on the first page: Greenville Bend Hydrokinetic Project No. 12829, Scotlandville Bend Hydrokinetic Project No. 12861, Kempe Bend Hydrokinetic Project No. 12921, Ashley Point Hydrokinetic Project No. 12930, Hope Field Point Hydrokinetic Project No. 12938, Flora Creek Light Hydrokinetic Project No. 12915, and McKinley Crossing Hydrokinetic Project No. 12912.

You may use the same method if requesting removal from the mailing list below.

Register online at <http://www.ferc.gov/esubscribenow.htm> to be notified via email of new filings and issuances related to this or other pending projects. For assistance, please contact FERC Online Support at [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov) or toll free at 1-866-208-3676, or for TTY, (202) 502-8659.

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Baton Rouge, LA 70804

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Bureau Of Marine Resources  
1141 Bayview Avenue  
Biloxi, MS 39530

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Fort Snelling, MN 55111

US Army Corps of Engineers  
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PO Box 80  
Vicksburg, MS 39181

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Atlanta Regional Office  
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2000 Quail Drive  
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Little Rock, AR 72201

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Suite 1500  
Little Rock, AR 72201

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Arkansas Office Of The Attorney  
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County Clerk  
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Marianna, AR 72360

County Clerk  
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City Of New Orleans  
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City Of Venice  
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Jackson, MS 39215

**APPENDIX A - STUDY PLAN CRITERIA**  
**18 CFR Section 5.9(b)**

Any information or study request must contain the following:

1. Describe of the goals and objectives of each study proposal and the information to be obtained;
2. If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied;
3. If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study;
4. Describe existing information concerning the subject of the study proposal, and the need for additional information;
5. Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements;
6. Explain how any proposed study methodology (including and preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate filed season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge; and
7. Describe considerations of level of effort and cost, as applicable, and why proposed alternative studies would not be sufficient to meet the stated information needs.

**APPENDIX B - PROCESS PLAN AND SCHEDULE****LEAD PROJECTS PROCESS PLAN AND SCHEDULE**

<b>Responsible Party</b>	<b>Pre-Filing Milestone</b>	<b>Date<sup>1</sup></b>	<b>FERC Regulation</b>
FFP	Issue Public Notice for NOI/PAD	1/15/09	5.3(d)(2)
FFP	File NOI/PAD with FERC	1/15/09	5.5, 5.6
FERC	Tribal Meetings	6/1/06	5.7
FERC	Issue Notice of Commencement of Proceeding; Issue Scoping Document <sup>1</sup>	3/16/09	5.8
FERC	Project Site Visits and Scoping Meetings	4/14/09 through 5/07/09	5.8(b)(viii)
All stakeholders	PAD/SD1 Comments and Study Requests Due	5/15/09	5.9
FERC	Issue Scoping Document <sup>2</sup>	6/29/09	5.1
FFP	File Proposed Study Plan (PSP)	6/29/09	5.11(a)
All stakeholders	Proposed Study Plan Meeting	7/8/09 through 7/28/09	5.11(e)
All stakeholders	Proposed Study Plan Comments Due	9/28/09	5.12
FFP	File Revised Study Plan	10/28/09	5.13(a)
All stakeholders	Revised Study Plan Comments Due	11/1/09	5.13(b)
FERC	Director's Study Plan Determination	11/27/09	5.13(c)
All Mandatory Conditioning Agencies	Any Study Disputes Due <sup>2</sup>	12/17/09	5.14(a)
Dispute Panel	Dispute Resolution Panel Convenes	1/5/10	5.14(d)(3)
Dispute Panel	Third Dispute Panel Member Selected	1/18/10	5.14(d)

<b>Responsible Party</b>	<b>Pre-Filing Milestone</b>	<b>Date<sup>1</sup></b>	<b>FERC Regulation</b>
FFP	Applicant Comments on Study Disputes Due	2/2/10	5.14(j)
Dispute Panel	Dispute Resolution Panel Technical Conference	Feb 2010 [prior to engaging in deliberative meetings]	5.14(j)
Dispute Panel	Dispute Resolution Panel Findings Issued	2/16/10	5.14(k)
FERC	Director's Study Dispute Determination	2/25/10	5.14(l)
FFP	First Study Season	2010	5.15(a)
FFP	Initial Study Report	8/27/10	5.15(c)(1)
All stakeholders	Initial Study Report Meeting	9/13/10	5.15(c)(2)
FFP	Initial Study Report Meeting Summary	9/27/10	5.15(c)(3)
All stakeholders	Any Disputes/Requests to Amend Study Plan Due	10/29/10	5.15(c)(4)
All stakeholders	Responses to Disputes/Amendment Requests Due	11/29/10	5.15(c)(5)
FERC	Director's Determination on Disputes/Amendments	12/14/10	5.15(c)(6)
<i>Second study season if necessary. Schedule would be adjusted accordingly.</i>			
FFP	File Preliminary Licensing Proposal	8/17/10	5.16(a)
All stakeholders	Preliminary Licensing Proposal Comments Due	11/15/10	5.16(e)
FFP	File Final License Application	12/31/10	5.17
FFP	Issue Public Notice of License Application Filing	1/14/11	5.17(d)(2)
FERC	Issue Public Notice of License Application Filing (Tendering Notice)	1/14/11	5.19
FERC	Director's Determination on Any Additional Study Requests and Notification of Any Deficiencies	1/31/11	5.19(e); 5.20(a)(2)

<b>Responsible Party</b>	<b>Pre-Filing Milestone</b>	<b>Date<sup>1</sup></b>	<b>FERC Regulation</b>
FERC	Issue Public Notice Accepting Application and Ready for Environmental Analysis (REA)	3/01/11	5.22
All stakeholders	Comments, Interventions, 10(a) Recommendations Due	5/2/11	5.23(a)
Agencies	10(j) Recommendations; 4(e) Terms and Conditions; Fishway Prescriptions Due	5/12/11	5.23(a)
FFP	Request 401 Water Quality Certifications	5/12/11	5.23(b)
FFP	Reply Comments Due	6/28/11	5.23(a)
FERC	Issue Draft Environmental Impact Statement (EIS)	10/27/11	5.24
All stakeholders	Draft EIS Comments Due	12/26/12	5.24(c)
Agencies	Modified 4(e) Terms and Conditions Due; USFWS Modified Fishway Prescriptions Due	4/24/12	5.24(d)
FWS/NMFS	ESA Biological Opinion As Needed	Feb. 2012	ESA
FERC	Issue Final EIS	5/24/12	
FERC	Issue License Order	8/22/12	FPA

<sup>1</sup> If the due date falls on a weekend or holiday, the due date is the following business day.

<sup>2</sup> Shaded milestones are unnecessary if there are no study disputes.

Document Content(s)

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