

EXECUTIVE SUMMARY

This final environmental impact statement (FEIS) evaluates the potential effects on the environment associated with the relicensing of the two hydroelectric developments that make up the 134.5-megawatt (MW) Santee Cooper Hydroelectric Project No. 199. The project is located on the Santee and Cooper rivers in Berkeley, Calhoun, Clarendon, Orangeburg, and Sumter counties, South Carolina. There are no federal lands located within the project boundary. The existing license expired on March 31, 2006, and in the interim the project operates under an annual license issued by the Federal Energy Regulatory Commission (Commission or FERC).

On March 15, 2004, South Carolina Public Service Authority (SCPSA) filed an application with FERC for a new license, to continue operating the Santee Cooper Hydroelectric Project. SCPSA's license application included its proposal to operate the project in accordance with certain operational and environmental measures. On March 23, 2007, the Commission issued a draft EIS for the Santee Cooper Project, which addressed measures outlined in a Letter of Intent of Settlement filed with the Commission on November 17, 2007. Subsequently, after agency and stakeholder consultation on the license application, on May 24, 2007, SCPSA filed a final settlement agreement (FSA) with measures that SCPSA, the U.S. Fish and Wildlife Service (FWS), and South Carolina Department of Natural Resources (SCDNR) recommend be included as an alternative in the FEIS. The FSA describes measures for fish passage, minimum flows, and enhancements at the Santee National Wildlife Refuge (Santee NWR). The parties intend that most of the measures in the FSA ultimately be included as conditions of a new license.

In this FEIS, we evaluate five alternatives for licensing the project: (1) the proposed action (SCPSA's proposal); (2) the FSA measures; (3) state and federal agency and nongovernmental organization recommendations outside of the FSA (signatory and non-signatory entity recommendations); (4) a staff alternative that includes most of the measures in the FSA, along with additional measures recommended by staff; and (5) no-action (continued operation as required by the existing license). We use no-action as the baseline against which the other alternatives are compared.

The major issues addressed in the FEIS include: (1) lake levels and flooding along the lower Santee River; (2) coordination of project operation with the Corps' St. Stephens facility; (3) flows through the Santee Cooper Project and St. Stephens to enhance aquatic habitat; (4) the need for a low-inflow emergency operations plan for periods of drought; (5) fish passage and protection including section 18 prescriptions from the National Marine Fisheries Service (NMFS) and FWS; (6) the project effects on water quality including dissolved oxygen concentrations in Lake Marion and the Santee River; (7) project effects on sensitive species including the shortnose sturgeon, West Indian Manatee, bald eagle, wood stork, and red-cockaded woodpecker; (8) potential enhancements at the Santee National Wildlife Refuge; (9) recreation issues including the

benefits of updating the current recreation management plan and comprehensive land management plan; and (10) cultural resources.

Based on our analysis of all resource issues, including the effects of proposed measures on project economics, we recommend licensing the project in accordance with the FSA, along with some modifications by staff. We recommend the following measures be included in any license issued:

- (1) Formalize the rule curve for reservoir operations;
- (2) Continue providing a weekly average flow of 4,500 cubic feet per second (cfs) from Jefferies station to minimize shoaling in Charleston Harbor and prevent saline waters from reaching Bushy Park industrial complex;
- (3) Provide seasonal minimum flows below Santee dam of 1,200 cfs, May through January, and 2,400 cfs, February through April, for the protection and enhancement of aquatic habitat and for anadromous fish migration and spawning;
- (4) Formalize the use of manatee exclusion devices and modified lock operations when manatee are present at the Pinopolis lock;
- (5) Prepare and implement a shortnose sturgeon enhancement plan in consultation with the FWS, SCDNR, and NMFS to ensure that restoration goals for the species are addressed;
- (6) Prepare species management plans for federally listed, threatened and endangered wildlife species within the project boundary and affected by project operations, and incorporate those plans into the Comprehensive Land Management Plan (CLMP) for the project, as appropriate;
- (7) Provide recreational enhancements at Old Santee Park and Overton Park which includes improved bank fishing, enhanced channel markers, deepwater access at several landings, installing mooring piers, and a two-lane boat launch at Richard Landing at White Point (completed in 2004);
- (8) Implement a Programmatic Agreement, including a Historic Properties Management Plan, to guide SCPSA's management of the project's historic properties during the term of the license;
- (9) Develop a low flow/emergency contingency plan (drought contingency plan) for the operation of the project during low inflows and/or drought;
- (10) Develop an adaptive management program to assess the effectiveness of flow alternatives in providing aquatic habitat, enhancing water quality, and providing navigation. The program would include:
 - a. Developing a project operations and downstream flow monitoring plan to ensure compliance with the recommended reservoir rule curve and minimum flow/attraction flow schedules; and

- b. Coordinating a Technical Advisory Committee for instream flows to review flows and make recommendations to the Commission.
- (11) Construct fish passage facilities and implement entrainment protection measures including:
- c. a fish passage implementation plan and fishway design and construction plans for all fishways;
 - d. post-construction fishway effectiveness evaluation plans for all constructed fishways;
 - e. fishway attraction flows within the range of high and low passage design flows for all fishways;
 - f. at Santee dam, provide: diadromous fish population monitoring in the Santee River downstream of the dam, construction and operation of a trap and sort facility and eventually a permanent upstream fish passage facility, and eel passage study and measures;
 - g. at the Pinopolis lock and dam, provide: increased locking events for fish passage, improved fish monitoring system, additional attraction flows, eel passage study and measures, and construction of an upstream passage facility at Pinopolis dam as appropriate;
 - h. operation and maintenance plans for all constructed fishways;
 - i. evaluation and modification plans for all constructed fishways;
 - j. post-licensing downstream fish passage/confirmatory survival studies to quantify downstream passage of diadromous fish at Santee dam, Pinopolis lock, and the Jefferies powerhouse, to determine the need for downstream passage facilities for diadromous species, and construction of downstream fish passage facilities;
- (12) Develop and implement an aquatic plant management plan that addresses the control of non-native invasive aquatic plants;
- (13) Improve Santee NWR including pumping station maintenance, a navigation channel in Jack's Creek, aquatic nuisance weed control and vegetation removal, erosion control measures, woody debris habitat enhancements, pine/hardwood habitat improvements, and habitat enhancements on Persanti Island;
- (14) Develop a recreation plan and update every 6 years for the life of the license; and
- (15) Revise the CLMP (shoreline management plan), and update the plan every 10 years for the life of the license.

Overall, these measures, along with the standard articles provided in any license issued for the project, would protect/enhance water quality, fisheries, wetlands, recreation, and cultural resources within the project area. In addition, the electricity generated by the project would be beneficial because it would continue to reduce the use of fossil-fueled, electric generating plants; conserve non-renewable energy resources; and continue to reduce atmospheric pollution.

Section 18 of the FPA provides that the Commission shall require the construction, operation, and maintenance by a licensee of such fishways as the Secretaries of Commerce or the Interior may prescribe. Pursuant to section 18 of the FPA, preliminary fishway prescriptions were filed by the U.S. Department of the Interior (Interior) and NMFS. Interior's final fishway prescription is included in the FSA. NMFS is not a party to the FSA and filed a modified fishway prescription and final recommendations on July 20, 2007. We include our independent analysis of Interior's final fishway prescription and NMFS's modified fishway prescription. We recognize, though, the mandatory nature of the final prescriptions and note that any license issued for this project would include all of the measures in the prescriptions.

In section 4, *Developmental Analysis*, of this FEIS, we estimate the cost of operating and maintaining the project under the alternatives identified above, compared to the cost of alternative power. The existing project generates an average of 224,027 megawatt-hours (MWh) annually, valued at \$11,873,000 (53.00 mills/kWh). The annual cost of producing this energy is \$5,423,000 (24.21 mills/kWh), and costs \$6,450,000 (28.79 mills/kWh) less than the cost of the most likely alternative source of power. Under the FSA, the project would generate 220,847 MWh annually, valued at \$11,705,000 (53.00 mills/kWh). The annual cost of producing this energy is \$10,175,000 (46.07 mills/kWh), and would cost \$1,530,000 (6.93 mills/kWh) less than the most likely alternative source of power. The staff-recommended alternative would cost \$1,443,000 (6.54 mills/kWh) less than the most likely alternative source of power.

Under the recommended staff alternative, the Santee Cooper Project would: (1) provide a significant and dependable source of electrical energy for the region; (2) avoid the need for an equivalent amount of fossil-fuel-fired electric generation, thereby continuing to conserve non-renewable energy resources and reduce atmospheric pollution; and (3) implement reasonable environmental measures to ensure protection and enhancement of environmental resources. Based on our detailed analysis of the environmental benefits and costs of each alternative considered in this FEIS, we conclude that the best alternative would be to issue a new license for the Santee Cooper Project consistent with the environmental measures specified in the staff recommended alternative.