

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 NO-ACTION ALTERNATIVE

For a relicense, the Commission defines the no-action alternative as continuing to operate the project under the terms and conditions of the existing license, with no additional environmental protection, mitigation, or enhancement measures implemented. The environment as it exists today is the baseline against which we assess the benefits and costs of any measures that would be applied under a new license.

2.1.1 Existing Project Facilities and Operation

The project structures consist of Santee dam (also known as Wilson dam) on the Santee River, Pinopolis dam on the Cooper River, the Diversion canal, the Santee Spillway Hydroelectric Station, and the Jefferies (formerly known as Pinopolis) Hydroelectric Station.

Santee dam impounds Lake Marion on the Santee River. Lake Marion is about 40 miles long and has an area of about 100,000 acres at a normal pool elevation of 75.0 feet National Geodetic Vertical Datum (NGVD). The dam consists of the North dam earthen embankment, the gated Santee spillway section, and the South dam earthen embankment. The Santee Spillway Hydroelectric Station is located near Pineville just downstream of the abutment of the Santee spillway to the South dam. The station contains a single, vertical-shaft, turbine-generator with a capacity of 2.0 MW, a rated net head of 46 feet, and a maximum hydraulic capacity of 660 cubic feet per second (cfs). Annual generation for the 10-year period ending in 1999 averaged 13,823 MWh. The station is used to maintain a minimum flow of 500 cfs in the Santee River.

Most of the water impounded by Santee dam exits Lake Marion through the 5-mile-long Diversion canal to Lake Moultrie. The canal is 200 feet wide at the bottom (elevation 48.0 feet) and nearly 400 feet wide at the surface (normal water surface elevation is 74.0 to 74.8 feet). There is no control structure in the Diversion canal, and all flow not passed by Santee dam enters Lake Moultrie through the canal.

The Pinopolis dam impounds Lake Moultrie. Lake Moultrie is about 10 miles long and has an area of about 60,000 acres at a normal pool elevation of about 75.0 feet. The Pinopolis dam structures consist of the West dam, West dike, East dam, East dam extension, East dike, North dike, Pinopolis lock, and the Jefferies Hydroelectric Station, which is located near Pinopolis. The 380-foot-long by 185-foot-wide station has an integral intake structure and contains one 10.125-MW unit and four 30.6-MW units, with a total maximum hydraulic capacity of 28,000 cfs. The Jefferies Hydroelectric Station was designed to accommodate an additional 30.6-MW generating unit to allow for potential expansion of generation capacity. The station is operated in a semi-peaking mode in accordance with agreements between SCPSA and the U.S. Army Corps of

Engineers (Corps) Cooper River Rediversion Project.⁷ Discharge through Jefferies station typically is restricted to an average weekly flow of 4,500 cfs, although additional discharges may be made to mitigate high saline levels in the downstream Bushy Park industrial complex, or to provide cooling water for the operation of the applicant's adjacent steam generating station. Some flow is also used for the operation of the Pinopolis lock for boat and upstream fish passage. Annual generation at the Jefferies station, for the 10-year period ending in 1999, averaged 210,204 MWh.

The non-jurisdictional Corps' Cooper River Rediversion Project includes a Rediversion canal that returns water from Lake Moultrie back to the Santee River, an 84-MW hydroelectric station located near the town of St. Stephen, and a fish lift to allow fish to pass upstream beyond the St. Stephen Hydroelectric Station. SCPSA operates the St. Stephen station, on behalf of the Corps, in a semi-peaking mode. The St. Stephen station uses the remainder of the discharge from Lake Moultrie not utilized by the Jefferies Hydroelectric Station and the Pinopolis lock.

2.1.2 Project Boundary

The jurisdictional, SCPSA-owned part of the Santee Cooper Project comprises several facilities and associated lands and waters along the Santee and Cooper rivers. SCPSA owns more than 32,151 acres of lands, 19,989 acres of which are contained within the project boundary (figure 2, appendix A). The project boundary along Lake Marion either follows a metes-and-bounds description, or is set at 30 linear feet from the high water mark at elevation 76.8 feet NGVD.⁸ The project boundary begins at the confluence of the Congaree and Wateree rivers and includes the Upper Santee Swamp, which comprises 35,780 acres of predominantly forested wetlands contained within the 100-year floodplain at the headwaters of Lake Marion, and lands downstream of Santee dam containing the project works. The project boundary at Lake Moultrie also either follows a metes-and-bounds description, or is set at 30 linear feet from the high water mark at elevation 75.5 feet NGVD. The project boundary includes 19,989 acres of lands, 35,780 acres of the Upper Santee Swamp, and about 160,000 acres of reservoirs for a

⁷In 1968, Congress enacted Public Law 90-483, which, among other things, authorized the construction and operation of the Cooper River Rediversion Project (St. Stephen Project). The flow requirements, as well as other pertinent operational considerations that affect the entire Santee Cooper Project flows, are outlined in a contract between Santee Cooper and the Corps, referred to as the Cooper River Rediversion Project Contract, No. DACW60-7-C-0005. As a federally owned project, the St. Stephen development is outside of the Commission's jurisdiction.

⁸Metes and bounds refers to specific distance measurements (metes) and definite boundary markers (bounds). This system of land description uses physical features of local geography, along with directions and distances, to define and describe the boundaries of the parcel of land.

total of about 215,769 acres. As described above, the project boundary also includes some lands and waters leased to FWS for the Santee NWR.

2.1.3 Project Safety

The project has been operating for over 27 years under the existing license and during this time, Commission staff has conducted operational inspections focusing on the continued safety of the structures, identification of unauthorized modifications, efficiency and safety of operations, compliance with the terms of the license, and proper maintenance. In addition, the project has been inspected and evaluated every 5 years by an independent consultant and a consultant's safety report has been submitted for Commission review. As part of the relicensing process, the Commission staff would evaluate the continued adequacy of the proposed project facilities under a new license. Special articles would be included in any license issued, as appropriate. Commission staff would continue to inspect the project during the new license term to assure continued adherence to Commission-approved plans and specifications, special license articles relating to construction (if any), operation and maintenance, and accepted engineering practices and procedures.

2.1.4 Current License Requirements

Current operational requirements include a continuous minimum flow of 500 cfs from the Santee Spillway Hydroelectric Station, and an average weekly flow of 4,500 cfs from the Jefferies station. The Jefferies station is operated in accordance with the Cooper River Rediversion Agreement between the applicant and the Corps (Contract No. DACW60-77-C-005, and supplemental agreements). This agreement specifies that flow requirements at the Santee and Jefferies stations are met first, and any remaining flows are discharged through the Corps-owned St. Stephen station. While St. Stephen station is owned by the Corps, it is operated by SCPSA via contract agreement with the Corps.

2.2 PROPOSED ACTION

2.2.1 Project Facilities and Operation

The applicant is not proposing any changes in project structures and proposes minor changes in operations.

2.2.2 Environmental Enhancement Measures

SCPSA proposes to implement the following environmental protection and enhancement measures:

- (1) Formalize the rule curve for reservoir operations.
- (2) Continue providing a weekly average flow of 4,500 cfs from Jefferies station to minimize shoaling in Charleston Harbor and prevent saline waters from reaching Bushy Park industrial complex.

- (3) Prepare species management plans for federally threatened and endangered species, including the red-cockaded woodpecker, on “developable lands” within the project boundary, as appropriate, and incorporate those plans into the Comprehensive Land Management Plan (CLMP) for the project.
- (4) Prepare and implement a shortnose sturgeon enhancement plan.
- (5) Implement an aquatic plant management plan for project waters that addresses controlling non-native, invasive aquatic plants.
- (6) Provide increased locking operations for a minimum of six, 8-minute locks per day to facilitate fish passage at the project.
- (7) Formalize the use of manatee exclusion devices at the Pinopolis lock and modification of lock operations when manatees are present.
- (8) Provide an additional classroom at Old Santee Canal Park.
- (9) Provide additional picnic shelters and paved parking at Overton Park.
- (10) Construct a two-lane boat launch at Richardson Landing at White Point (completed in 2004).
- (11) Install aluminum mooring piers at Thornley (including any required excavation), Low Falls, Calhoun, and Biggins.
- (12) Provide improved bank fishing access and parking on the Diversion Canal, below Santee dam, and the Duck Pond Access off Highway 6.
- (13) Install enhanced channel markers.
- (14) Upgrade several existing boat landings to allow deepwater access, including maintenance excavation activities.
- (15) Implement a Programmatic Agreement (PA), including a Historic Properties Management Plan (HPMP), to guide SCPSA’s management of the project's historic properties during the term of the license.

2.3 MODIFICATIONS TO SCPSA’S PROPOSAL

2.3.1 Final Settlement Agreement

SCPSA, FWS, and SCDNR recommend that most of the measures included in the FSA be made conditions of any license issued. The FSA includes measures for fish passage (appendix A of the FSA), minimum flows (appendix B of the FSA), and improvements to the Santee NWR (appendix C of the FSA). The measures for fish passage are the same as FWS’s section 18 prescription and are described in section 2.3.2.3, *Section 18 Fishway Prescriptions*. The remaining measures in the FSA are as follows:

Instream flows

- (1) Release an instantaneous minimum flow from Santee dam of 2,400 cfs from February 1 through April 30 and 1,200 cfs from May 1 through January 31, with allowances for temporary reductions in flow during drought or emergency conditions.⁹
- (2) Develop a low inflow/emergency contingency plan (drought contingency plan).
- (3) Coordinate a Technical Advisory Committee for instream flows to annually evaluate the effects on generation, fish passage, aquatic habitat, emergency conditions and spillage, and alternative flows.

Santee National Wildlife Refuge enhancements

- (4) Maintain the Santee NWR pumping stations.
- (5) Remove snags and stumps from Jack's Creek in order to clear a public marked navigational channel.
- (6) Implement aquatic nuisance weed control measures and remove invasive plant species on the Bluff Unit.
- (7) Remove vegetation from the canal and dikes on the Cuddo Unit.
- (8) Implement erosion control measures.
- (9) Place large woody debris in deep water portions of the Refuge for fish habitat.
- (10) Investigate and support moist soil impoundment irrigation options on the Bluff and Cuddo Units.
- (11) Reduce the stand density of 40 acres of pine/hardwood habitat on Pine Island Unit.
- (12) Assist in the expansion of an elevated public use photo blind/bird observation structure on the Wrights Bluff nature trail.

⁹The FSA states that this minimum flow would be provided within 36 months of the issuance date of the license or within 30 days of the installation of a new minimum flow generating unit at Santee dam, whichever occurs first. SCPSA, however, has not yet filed a formal request to amend the license or its current application to include the new minimum flow unit, nor has provided any design details or costs for the unit. Therefore, we are not analyzing the effects of this unit in this FEIS, other than the minimum flows that would be provided by the unit. The placement and configuration of a minimum flow unit could alter downstream flow patterns or water quality, as discussed in section 3.0. The potential effects on aquatic resources would need to be evaluated at such time SCPSA files a request to amend its license or license application.

The FSA includes a provision to establish the Santee Basin Fisheries Enhancement Fund for the purpose of funding diadromous fisheries enhancement and restoration activities in the Santee River Basin. In its comments on the draft EIS Interior states that the Santee Basin Fisheries Enhancement Fund is an agreement made within the context of the settlement, but outside the jurisdiction of the Commission, and is not intended to be included as a condition of the license.

The FSA also includes a provision for the removal of Granby Dam within 6 months after issuance of the license. Granby Dam is located on the Congaree River approximately 44 miles upstream of the confluence of the Wateree River, which forms the headwaters of Lake Marion. Granby Dam is not part of the Santee Cooper Project. As such, this measure is not analyzed in this FEIS, although the parties to the FSA may elect to pursue this measure outside of any license that may be issued for the project.

2.3.2 Additional Recommendations of Signatory and Non-Signatory Organizations

In addition to the provisions outlined in the FSA, SCDNR provided recommendations for water quality monitoring, recreation enhancements, lake level management, and rare, threatened, and endangered (RTE) species as part of its original recommendations, terms, and conditions, and in its letter providing comments on the draft EIS. These measures are described below under *Statutory Requirements*. Likewise, Interior previously filed 10(j) recommendations and recommends RTE species management plans and protection measures in its comments on the draft EIS. All of these recommendations are considered as section 10(j) recommendations.

Several entities were not signatories to the FSA, including EPA, NMFS, U.S. Forest Service (Forest Service), American Rivers, and the South Carolina Coastal Conservation League (CCL). NMFS filed modified section 18 prescriptions and 10(j) recommendations. These measures are discussed under *Statutory Requirements*. EPA, in its comments on the draft EIS, provided recommendations under section 309 of the Clean Air Act, as discussed below. The Forest Service, American Rivers, and CCL recommend the following measures:

- (1) Provide higher seasonally varied flows typically ranging from 1,600 to 5,600 cfs, based upon development and inflows, as follows:

From March 1 through April 30 of each year, a continuous minimum flow of 5,600 cfs would be released from the Corps' St. Stephen development into the Rediversion Canal for fish passage. From May 1 to January 31, 25 percent of project inflow, less the Cooper River flow requirement, would be released into the Santee River. From February 1 to April 30, 30 percent of project inflow, less the Cooper River flow requirement, would be released into the Santee River. Year round requirements would be 4,500 cfs

(weekly average) at the Jefferies development and a minimum of 1,600 cfs at Santee dam.¹⁰

- (2) Provide at least one flow release exceeding 40,000 cfs annually, except in drought years, to provide channel flushing and flooding of lowland forest land.
- (3) Develop an adaptive management program to assess the effectiveness of flow alternatives in providing aquatic habitat, improved water quality, and navigation.¹¹

2.3.3 Statutory Requirements

2.3.3.1 Water Quality Certification

Section 401(a)(1) of the CWA requires an applicant for a federal license or permit for any activity that may result in any discharge into navigable waters to provide to the licensing or permitting agency a certification from the state in which the discharge originates that any such discharge will comply with certain sections of the CWA. SCPSA filed an application for water quality certification (WQC) with SCDHEC at the same time as filing its license application with the Commission and subsequently withdrew and resubmitted its application annually in 2005, 2006, and 2007. By letter dated September 26, 2006 and supplemented July 31, 2007, SCDHEC requested additional information from SCPSA. SCDHEC stated that SCPSA's application is considered incomplete, and that it will process the application when the additional information is provided and the application is judged to be complete. Thus, SCDHEC action on the request for a WQC is pending.

2.3.3.2 Coastal Zone Management Act Consistency Certification

Section 307(c)(3) of the Coastal Zone Management Act requires that all federally licensed and permitted activities be consistent with approved state Coastal Zone

¹⁰The Forest Service also states that the EIS should "consider also the effects of a minimum release of 2,600 cfs from Wilson dam to maintain above the record low flow in the Santee River." We do not interpret this as a specific flow recommendation, but instead as a recommendation that our analysis should consider the option of a year-round minimum flow of 2,600 cfs.

¹¹As recommended by these parties, SCPSA would monitor flows over the next 10 years to determine if the flow regimen has met ecological and navigational objectives such as fish staging and spawning, sandbar and floodplain inundation, salinity abatement, and aquatic habitat. If objectives are met, SCPSA would continue monitoring for the next 10 years. If the objectives are not met, SCPSA would implement an alternative flow regimen that apportions between 20 and 40 percent of project inflow to the Santee River and release that flow from the Santee spillway development for the next 10-year period.

Management Programs.¹² If a project is located within a coastal zone boundary or if a project affects a resource located in the boundaries of the designated coastal zone, the applicant must certify that the project is consistent with the state Coastal Zone Management Program.

The Santee Cooper Project is located within the South Carolina's coastal zone boundary (Berkeley County), and SCPSA applied for a determination of consistency with provisions of the Coastal Zone Management Program at the same time as filing the license application with the Commission. SCDHEC has not yet acted on the request. In South Carolina, the CZMA application and WQC application are processed concurrently.

2.3.3.3 Section 18 Fishway Prescriptions

Section 18 of the FPA provides that the Commission must require a licensee to construct, operate, and maintain such fishways as may be prescribed by the Secretary of the Interior or the Secretary of Commerce, as appropriate. On May 5 and May 8, 2006, NMFS (Commerce) and FWS (on behalf of Interior) filed preliminary fishway prescriptions for upstream and downstream fish passage facilities at the Santee and Pinopolis dams, and also reserved their authority to prescribe additional fishways or modified fishways at a later date.

Section III.A of the FSA outlines FWS's intent to withdraw its preliminary section 18 fishway prescription, while appendix A of the FSA includes its modified prescription. Interior, on behalf of FWS, subsequently withdrew its section 18 fishway prescription. On July 20, 2007, FWS filed its modified fishway prescription, which is identical to appendix A of the FSA. As noted in section 1.3.4, *Settlement Agreement*, NMFS filed a modified fishway prescription on July 20, 2007, which it based on its alternatives analysis and review of comments on the draft EIS. The FWS and NMFS fishway prescriptions are summarized as follows:

FWS Section 18 Prescription (same as FSA)

- (1) Develop a fishway design and construction plan.
- (2) Develop a fishway operation and maintenance plan.

Upstream passage at Santee dam (target species: American shad, blueback herring, and American eel)

Phase One

- (3) Conduct a baseline population monitoring study of the annual American shad and herring spawning run in the Santee River within 1 year of license issuance, continuing for a period of 3 to 5 years.

¹²16 U.S.C. §1456(c)(3)(A).

- (4) Provide initial diadromous fish capture and transport during the baseline population monitoring study, such that fish captured during the study are transported above Santee dam.
- (5) Conduct an American eel sampling study at Santee dam for 2 years following license issuance, to aid in determining the best eel fishway location and operational period.

Phase Two

- (6) Operate a trap and sort facility at Santee dam beginning between 6 and 8 years after license issuance.
- (7) Install and operate an eel fishway at Santee dam by year 3 of license issuance, followed by 3 years of effectiveness evaluation studies.

Phase Three

- (8) Construct and operate a fish lift facility at Santee dam to operate concurrently with the St. Stephen and Pinopolis lock facilities between 3 and 5 years after the capacity of the trap and sort facility at Santee dam has been reached.
- (9) Conduct monitoring and effectiveness evaluation of the fish lift facility after construction of the fish lift.

Downstream passage at Santee dam (target species: American shad, blueback herring, and American eel)

- (10) Conduct a downstream passage evaluation study at Santee dam to include survivability of out-migrating target species (American shad, blueback herring, and American eel), and evaluation of alternatives for downstream passage, beginning no later than 6 months after license issuance and continuing for 3 fish passage seasons.
- (11) Install and/or implement downstream passage measures or designs at Santee dam determined appropriate and effective by the downstream passage evaluation study in year 5 of license issuance.
- (12) Conduct effectiveness evaluations of the downstream passage measures at Santee dam for a period of 3 years after construction of the downstream passage facility.

Upstream passage at the Pinopolis lock and dam (target species: American shad, blueback herring, and American eel)

Phase One

- (13) Install an improved fish counting system in the Pinopolis lock within 1 year of license issuance.

- (14) Provide an attraction flow at the navigation lock entrance with the downstream gates in mitered position, as approved by FWS, followed by evaluation as part of the upstream passage effectiveness evaluation study.
- (15) Develop a passage operations plan at the Pinopolis lock and dam to include an assessment of the timing and daily number of lock operations and initial turbine operations needed for efficient upstream passage of target species (shad, herring, and American eel) within 1 year of license issuance.
- (16) Prepare an upstream passage effectiveness evaluation study plan for the Pinopolis lock within 6 months of license issuance, and conduct the study beginning in the first full spawning season after approval of the plan, and continue for 3 years.
- (17) Conduct an eel sampling study at the Pinopolis lock and dam for 2 years following license issuance to aid in determining the best eel fishway location and operational period, with the study plan due to FWS and SCDNR within 3 months of license issuance.
- (18) Install and operate an eel fishway at Pinopolis dam by year 3 of license issuance, after agency review of the results of the eel sampling study (item 17).

Phase Two

- (19) Install and/or implement upstream passage measures or designs at the Pinopolis lock and dam determined appropriate based on the upstream passage effectiveness evaluation (item 16), within 6 months of the evaluation submittal.

Downstream passage at the Pinopolis lock and dam (target species: American shad, blueback herring, and American eel)

Phase One

- (20) Conduct a confirmatory survival study for out-migrating target species at the Pinopolis lock and Jefferies station (using mark-recapture, balloon tagging, or other approved techniques) by year 2 of license issuance, to evaluate the turbine passage survival percentages for comparison to survival estimates included in the license application. The results shall be provided to FWS and SCDNR within 6 months after study completion, and will provide for development of the best available and effective downstream passage measures and operations.

Phase Two

- (21) Conduct a downstream passage evaluation study at the Pinopolis lock and dam to include consideration of survivability of out-migrating target species (American shad, blueback herring, and American eel), including an assessment of the alternatives for improving the survival of out-migrating fishes.¹³ The study shall include desk-top research and site-specific testing of alternatives, with a final report to FWS and SCDNR within 6 months of study completion.
- (22) Install and/or implement downstream passage measures or designs at the Pinopolis lock and dam in year 5 of license issuance, as determined appropriate based on the downstream passage evaluation study.
- (23) Conduct effectiveness evaluations of the downstream passage measures at the Pinopolis lock and dam, for a period of 3 downstream passage seasons.

NMFS Section 18 Prescription

- (1) Develop a design and construction plan for all fishways.
- (2) Develop a post-construction fishway effectiveness evaluation plan for all fishways to assess the effectiveness of each fishway during the first 2 years of operation.
- (3) Develop a fishway operation and maintenance plan for all fishways.
- (4) Develop a fishway evaluation and modification plan (FEMP) for all fishways, to include a program to meet NMFS fish passage goals, progress measurement criteria, procedures for redirecting effort, an implementation schedule, monitoring plan, and annual work plan.
- (5) Provide fishway attraction flows within the range of high and low passage design flows for all fishways.

¹³The FSA states, “The Licensee shall conduct a Downstream Passage Evaluation Study for target species that includes consideration of survivability of out-migrating target species (American shad, blueback herring, American eel,) and potential available alternatives to increase survivability at the Santee dam.” Staff notes that the downstream passage provisions cited herein occur in section VI.B of appendix A of the FSA, under the section that applies to Pinopolis lock and dam. SCPSA should clarify this discrepancy.

Santee dam, upstream passage (target species: American shad, blueback herring, American eel, and shortnose and Atlantic sturgeon):

Phase One

- (6) Conduct a baseline population monitoring study for target species below Santee dam to establish baseline population levels prior to implementation of upstream fish passage measures. The study plan shall be submitted to NMFS and the Fisheries Technical Committee (FTC) within 6 months of license issuance, and the study shall be conducted for 3 to 5 years, as determined by the FTC, with annual reports by October 31.
- (7) Conduct eel trapping study for two years beginning the first year of license issuance to determine the best location and design for an eel fishway, with a study plan to be provided to the FTC within 3 months of license issuance and a final report within 6 months of the completion of sampling.

Phase Two

- (8) Construct a trap/sort/transport facility for target species by year 5 (5th spawning season) after license issuance. The facility shall be designed so that it can be upgraded to a full-capacity volitional fish lift in Phase Three, and must include the following design details: full-depth entrance with 100-cfs attraction flow, 8-foot-wide crowding pool and 1,100-gallon hopper, elevated fish sorting and holding tanks, design capacity of 37,000 alosines, special design features for sturgeon, and operating season of February 1 to May 15.
- (9) Construct and operate an eel fishway by year 3 of license issuance, using a location and design as determined by the eel trapping study (item 7). Fishway shall consist of a ramp-type eelway with location to be determined by deployment of experimental ramps.

Phase Three

- (10) Construct a full-capacity volitional fish lift at the dam (or other appropriate upstream design) by year 10 of license issuance or within 2 years of reaching the capacity of the trap/sort/transport facility, whichever is earlier. The design details shall include: a direct fish exit to the forebay (Lake Marion), a design capacity of 1.5 million alosines, and retention of trap and transport capability.

Santee dam, downstream passage (target species: American shad, blueback herring, American eel, and shortnose and Atlantic sturgeon)

- (11) Construct downstream passage facilities by the third outmigration season after license issuance, consisting of full depth bar racks or

overlay screens with one-inch clear bar spacing and approach velocity less than 2 feet per second, a multi-level bypass and a discharge conduit to tailwater with 30-cfs operation flow, with year-round operational period that may be further refined by NMFS and the FTC.

Pinopolis lock and dam, upstream passage (target species: American shad, blueback herring, American eel, shortnose and Atlantic sturgeon)

Phase One

- (12) Install a fish counting system (hydro-acoustic fish monitoring system or PIT tag monitoring system) in the lock, to be operational in the first upstream passage season following license issuance, to monitor upstream passage of target species.
- (13) Conduct a FEMP, to include a passage operations plan and effectiveness evaluation, for the lock in the first 3 years of operation after license issuance. The FEMP shall investigate: the provision of a 600-cfs attraction flow at the lock entrance, with the downstream lock gates in mitered position during the fishing cycle; night operations to facilitate sturgeon passage; methods for effective lock operations during high winds and waves; increasing lock operations to eight per day during peak fish passage; the use of a fish crowding device inside the lock, focusing on shortnose sturgeon; turbine sequencing alternatives to improve passage efficiency; and alternative upstream passage facility designs.
- (14) Conduct eel trapping study for two years beginning the first year of license issuance to determine the best location and design for an eel fishway, with a study plan to be provided to the FTC within 3 months of license issuance and a final report within 6 months of the completion of sampling.

Phase Two

- (15) Based on results of Phase One studies and operations, implement the most effective upstream passage system no later than the fifth upstream migration season after license issuance.

Pinopolis lock and dam, downstream passage (target species: American shad, blueback herring, American eel, shortnose and Atlantic sturgeon)

- (16) Construct fully operational downstream passage facilities at Pinopolis lock and dam and at the Jefferies station by the third outmigration season after license issuance, consisting of full depth bar racks or overlay screens with one-inch clear bar spacing and approach velocity less than 2 feet per second, a multi-level bypass

and a discharge conduit to tailwater with 30-cfs operation flow, with year-round operational period that may be further refined by NMFS and the FTC.

Many of the provisions of the FWS and NMFS section 18 modified fishway prescriptions are similar. The primary difference is that the FWS prescription would implement a tiered approach to constructing fish passage facilities based on the success of fish returns. The NMFS prescription would implement construction according to a set schedule.

Key differences between the two prescriptions relate to the timing of implementing the various measures and species targeted. Overall, the implementation schedule for fish passage studies and measures included in the NMFS modified section 18 prescription is more aggressive than that put forth by the FWS and included in the FSA. For example, a trap and sort facility at Santee dam must be operational by year 5 of license issuance under the NMFS prescription and between years 6 and 8 under the FWS prescription. The species targeted for fish passage under the modified FWS prescription included in the FSA are American shad, blueback herring and American eel, along with a shortnose sturgeon enhancement plan. These species are also targeted by NMFS but NMFS prescriptions more specifically target Atlantic and shortnose sturgeon.

There are other differences between the two prescriptions. Downstream fish passage facilities are prescribed by NMFS at Santee dam and Pinopolis lock and dam with no requirement to conduct a downstream passage evaluation study prior to implementation. The FWS modified prescription requires such a study. NMFS specifies fishway attraction flows of 100 cfs at the trap and sort facility at Santee dam and 600-cfs at Pinopolis lock, while the FWS prescription requires only an unspecified attraction flow at Pinopolis lock. NMFS also specifies design criteria for the upstream and downstream fish passage facilities at both Santee dam and Pinopolis lock and dam, while the FWS prescription does not. The FWS prescription includes a confirmatory survival study for outmigrating species at Santee dam, Pinopolis lock and dam and Jefferies station. The study prescribed by FWS would occur by year 2 of the new license term, with downstream passage measures installed, based on study results, in year 5. No such study is included in NMFS prescriptions, and downstream passage measures would be installed by year 3, with the design specified by NMFS.

2.3.3.4 Section 10(j) Conditions

Under the provisions of section 10(j) of the FPA, each hydroelectric license issued by the Commission must include conditions based on recommendations of federal and state fish and wildlife agencies to adequately and equitably protect, mitigate damages to, and enhance fish and wildlife resources affected by the project. The Commission is required to include these conditions unless it determines that they are inconsistent with the purposes and requirements of the FPA and other applicable law.

Interior, NMFS, and SCDNR filed comments and recommendations in response to the March 3, 2006, notice of application ready for environmental analysis. Pursuant to section 10(j), the resource agencies recommended several measures relating to project operations, shoreline management, and aquatic and terrestrial habitats.

As discussed above, FWS and SCDNR are signatories to the FSA. By letter filed May 17, 2007, Interior modified its section 10(j) instream flow recommendations in favor of the instream flows provided in the FSA. Interior also provided some additional 10(j) recommendations outside of the FSA in the same letter pertaining to RTE species protection plans. SCDNR also supports the FSA in favor of previously prescribed section 10(j) recommendations for diadromous fish management and instream flows. However, the SCDNR also outlined several measures associated with water quality, shoreline management, and the project rule curve that are considered outside of the FSA. NMFS filed revised section 10(j) recommendations for the Santee Cooper Project on July 20, 2007, which include instream flow recommendations for the Santee River; a drought contingency plan, adaptive management plan, and flow management team; instream flow and operation plans; and a shortnose sturgeon protection and recovery plan. The agencies' revised 10(j) conditions include:

- (1) Implement a modified rule curve¹⁴ that would target full pool during the winter months.
- (2) Provide higher seasonally varied flows at Santee dam as follows:¹⁵
 - a. Minimum instantaneous flow of 5,000 cfs from February 15 through April 30, for migration and spawning for shortnose sturgeon.
 - b. Minimum instantaneous flow of 2,300 cfs from February 15 through April 30, for migration and spawning of diadromous species and aquatic ecosystem function enhancement.
 - c. Minimum instantaneous flow of 2,300 cfs from May 1 through February 14, to enhance aquatic habitat, diadromous fish maturation, ecosystem function, and access to foraging habitat for adult sturgeon.
- (3) Develop a low inflow and emergency water resource management plan (drought contingency plan).
- (4) Develop an adaptive monitoring, evaluation and flow modification plan (adaptive management plan).

¹⁴Recommendations for a modified rule curve generally call for stable lake levels and a curve that provides an earlier drawdown and refilling to achieve full impoundment levels during December and January.

¹⁵Only NMFS filed revised section 10(j) flow recommendations that differed from the FSA minimum flow provisions.

- (5) Establish an interagency cooperative instream flow management team including federal and state agencies, interveners, and other interested public stakeholders involved with water resource allocation.
- (6) Develop an instream flow operations plan for the Jefferies station.
- (7) Develop an instream flow and fish passage operations plan for the St. Stephen development.
- (8) Develop a shortnose sturgeon protection and recovery plan.
- (9) Develop a water quality enhancement plan and conduct water quality monitoring and remediation, as necessary, in Lake Marion and the Santee River.¹⁶
- (10) Conduct a post relicensing study of the impacts of the rule curve on waterfowl habitat and public recreation and identify operational measures that would mitigate these impacts.
- (11) Develop and implement RTE species management plans for those species known to occur near the project or affected by project operations.
- (12) Protect and enhance existing red-cockaded woodpecker habitat on Persanti Island.
- (13) Expand the Geographic Scope to address the extent of sedimentation caused by Lake Marion downstream in the Santee River from the Wilson dam 87 miles to the Atlantic Ocean, to include the St. Stephen Project.¹⁷
- (14) Expand the temporal scope to achieve an environmental baseline that accounts for all continuing and future project related impacts, including those of the St. Stephen project.

In addition to the above measures, the agencies recommend measures under section 10(j) that are included in the proposed action, including the FSA. These measures include an adaptive management program, drought contingency plan, Technical Advisory Committee, and shortnose sturgeon enhancement plan.

¹⁶Interior recommends a water quality enhancement plan that identifies action measures, an implementation schedule, and a monitoring program for the reservoirs and the Santee and Cooper rivers. SCDNR recommends a DO and water temperature-monitoring program be established in Lake Marion and the Santee River, which is designed to detect low DO levels. When low DO levels are detected, SCDNR recommends measures be implemented to enhance water quality to meet state standards.

¹⁷These recommendations will be considered in our analysis as appropriate to assess cumulative effects of project operations.

2.3.3.5 Section 10(a) Conditions

Under FPA section 10(a), the Commission must give equal consideration to power and nonpower values to provide the best public use of the waterway. The Commission must consider recommendations from federal and state agencies, Indian tribes, and state fish and wildlife and water quality agencies.

In response to the March 3, 2006, REA notice, SCDNR recommended several measures relating to recreational use and opportunities at the project under section 10(a). These recommendations are not included in, and are considered separate from, the measures included in the FSA. The measures include:

- (1) Provide the following recreational amenities during the first 10 years of the new license:¹⁸
 - a. improved bank fishing access and parking in the Pinopolis dam tailrace and the Old Highway 301 causeway and bridge; and
 - b. develop an additional boat navigation channel across Lake Marion.¹⁹
- (2) Review and update the recreation plan every 10 years for the life of the license.
- (3) Develop a comprehensive Shoreline Management Plan (SMP) and update the plan every 10 years for the life of the license.

In addition, the proposed action includes several recreation improvements that are also outlined in SCDNR's 10(a) recommendations. SCPSA's proposed improvements for fishing access and parking and enhanced channel markers are recommended by SCDNR.

2.3.3.6 Section 4(e) Conditions

Section 4(e) of the FPA gives the Secretaries of the Interior and Agriculture authority to impose conditions on licenses issued by the Commission for hydropower projects located on "reservations" under the respective Secretary's supervision. See 16 U.S.C. §§796(2), 797(e).

By letter filed May 17, 2006, FWS submitted five preliminary 4(e) conditions, pursuant to section 4(e), to mitigate for project impacts on "reservations" (the Santee NWR) managed by FWS. In its response to agency terms and conditions filed June 22,

¹⁸Recreational measures are not measures for the protection of fish and wildlife resources, but are considered under section 10(a) of the FPA.

¹⁹Staff was provided inadequate information to evaluate and make a recommendation regarding this measure. SCDNR provides no details on the location of an additional boat navigation channel or why an additional boat navigation channel across Lake Marion is necessary.

2006, SCPSA claims that 4(e) conditioning authority does not apply in this case because the Santee NWR is not a “reservation” as defined in §§796(2), 797(e). FWS is a signatory to the FSA and, subsequent to the filing of the FSA, Interior, by letter filed May 17, 2007, withdrew the previously prescribed mandatory 4(e) conditions in favor of Santee NWR improvements outlined in appendix C of the FSA.

2.3.3.7 Endangered Species Act

Section 7 of the Endangered Species Act (ESA) requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally endangered or threatened species or result in the destruction or adverse modification of the critical habitat for such species. Federal agencies are required to consult with FWS or NMFS when a proposed action may adversely affect listed species.

FWS, by letters filed January 9, 2003, and March 14, 2005, stated that the federally listed endangered West Indian manatee (*Trichechus manatus*), red-cockaded woodpecker (*Picoides borealis*), and shortnose sturgeon (*Acipenser brevirostrum*), and the federally listed threatened bald eagle (*Haliaeetus leucocephalus*) are known to exist within the project boundaries. By letter filed May 8, 2006, FWS stated that the peregrine falcon (*Falco peregrinus anatum*) and the wood stork (*Mycteria americana*) occur at the Santee NWR. The SCDNR Heritage Database for rare, threatened, and endangered species, confirmed the presence of three federally threatened or endangered species (i.e. bald eagle, red-cockaded woodpecker, and shortnose sturgeon), as well as three species of national concern, 16 species of state concern, and one species of regional concern within the project boundary.

Of the federally listed endangered or threatened species known to occur in the project area, we conclude that project operation has the potential to affect shortnose sturgeon, the West Indian manatee, the wood stork, and the bald eagle. The peregrine falcon was delisted in 1999 and subsequent monitoring indicates that the species has recovered (FWS, 2006). The bald eagle was delisted on July 9, 2007 (FWS, 2007) but is still protected under the Bald and Golden Eagle Protection Act, as amended in 1978, and the Migratory Bird Treaty Act, as amended in 1998. We conclude that no further consultation is necessary for this species.

In the draft EIS, we made a determination that the project could adversely affect the manatee. In our March 27, 2007, letter, we requested formal consultation with FWS, and that FWS file its BO for the West Indian manatee by August 9, 2007. In its comments on the draft EIS, Interior states that the more restrictive Marine Mammal Protection Act of 1972 (MMPA) applies to protecting the West Indian manatee. FWS, in a letter filed August 10, 2007, indicates that no BO will be provided for the manatee because the MMPA takes precedence over the ESA. Finally, in the August 10 letter,

FWS determined that, as long as the existing manatee protection practices continue,²⁰ no take will occur at the project, and the project is “not likely to adversely affect” the manatee.

The bald eagle, red-cockaded woodpecker, and wood stork could be affected by shoreline land use, both directly and indirectly attributable to project operation. However, land use development programs under the existing CLMP, include measures to protect shoreline and terrestrial habitat from development. Also, SCPSA proposes and Interior recommends development of RTE species management plans, which would be included in a revised CLMP. Furthermore, Interior/FWS recommend protection and enhancement of red-cockaded woodpecker habitat on Persanti Island. We conclude that, with the implementation of these programs and plans, operation of the project is not likely to adversely affect these species. FWS, as part of the ESA consultation process, concurred with this finding in its letter filed August 10, 2007.

In the draft EIS, we made a determination that the project was likely to adversely affect the shortnose sturgeon. We note, however, that the proposed action includes a shortnose sturgeon enhancement plan to minimize such effects. NMFS, in a letter filed December 8, 2006, stated that consultation under section 7 of the ESA between NMFS and the Commission, with regard to the shortnose sturgeon, had not been initiated. In our letter of March 27, 2007, we provided our biological assessment and requested formal consultation with NMFS on the shortnose sturgeon. We also requested that NMFS provide its BO for the sturgeon by August 9, 2007. NMFS responded, in a letter filed April 24, 2007, stating that the biological assessment within the draft EIS was incomplete and did not have sufficient information to initiate consultation. NMFS also stated that it planned to conduct additional analysis of the flow data from the Santee River to develop “a habitat spatial analysis” to assess project effects of fish communities and habitat. This analysis is not expected to be completed until December 2007.²¹

NMFS filed its modified section 10(j) terms and conditions, as well as fishway prescription on July 20, 2007. In its filing of modified 10(j) recommendations, NMFS states that formal consultation on the shortnose sturgeon has not been completed to date. NMFS also states that its modified recommendations and prescription are based on the best available approach, which uses the best information currently available, for protecting shortnose sturgeon and Atlantic sturgeon (a candidate species) in the Santee

²⁰SCPSA voluntarily has implemented manatee protection measures since 1994, including (a) formal operational procedures for protecting manatees that inadvertently enter Pinopolis lock, and (b) installing manatee exclusion devices within the fill/drain ports of the lock facility. As part of the proposed action, SCPSA would formalize these protection measures.

²¹NMFS requests staff await the results and recommendations from the study and incorporate such information in the FEIS.

River. NMFS concludes that the identified measures may be supplemented as additional information becomes available through the consultation process.

The biological assessment contained within this FEIS provides additional information and analysis pertaining to the project's potential effects on the shortnose sturgeon. Based on this analysis, we conclude that the continued operation of the Santee-Cooper Project, as proposed by SCPSA and with additional staff-recommended measures, is likely to adversely affect the shortnose sturgeon. Therefore, we intend to initiate formal consultation with NMFS to address the effects of relicensing the project on shortnose sturgeon.

2.3.3.8 Marine Mammal Protection Act

The MMPA requires the conservation and protection of marine mammals, regardless of ESA status. Interior is responsible for the management and protection of sea otter, walrus, polar bear, dugong, and manatee. The Department of Commerce is responsible for cetaceans (whales, dolphins and porpoises), seals, and sea lions. The Act declares that marine mammals are resources of great international significance (aesthetic, recreational and economic), and should be protected and encouraged to develop to the greatest extent feasible, commensurate with sound policies of resource management. The management objectives are to maintain the health and stability of the marine ecosystem, and obtain an optimum sustainable population within the carrying capacity of the habitat. With certain exceptions, the Act establishes a moratorium on the taking of marine mammals.

As described above, we initiated formal consultation with FWS for the West Indian manatee, under section 7 of the ESA. In its comments on the draft EIS, Interior indicated that a BO that allows incidental take of manatee will not be issued for the project. Interior also indicated that FWS will coordinate with the Commission on conservation and protection measures for this species. In its letter filed August 10, 2007, FWS provided a list of measures that, if implemented as part of the license, would result in (a) no take at the project, and (b) the project's compliance with the MMPA. The measures are summarized as follows:

- (1) Signs requesting the public to report any manatee sightings to the lock operator should be posted around the lock and adjacent areas.
- (2) Prior to each lock operation, when water temperatures exceed 70 degrees Fahrenheit (°F), the lock operator should locate manatees that have been reported in the area and scan the tailrace canal for the manatee(s).
- (3) All manatee sightings should be reported to SCDNR.
- (4) If a manatee is suspected to have entered the lock, delay flooding the lock for 20 minutes. If a manatee does not surface after 20 minutes, flooding may continue.

- (5) If a manatee is sighted in the lock while flooding the lock, stop flooding immediately. When the manatee surfaces, drain the lock at a quarter flow and open lower gates. As long as the manatee can be seen, continue lowering the water. If the manatee submerges for more than 5 minutes, close the drain valve. If the manatee does not surface immediately, backflush the lock with lakeside flow to dislodge a manatee which may be trapped inside a culvert. Once the manatee surfaces restart the drawdown procedures, and suspend lock operation until the manatee is observed outside the lock.
- (6) If a manatee remains in the lock, call SCDNR.
- (7) During every routine maintenance draw down, all manatee exclusion devices should be inspected. Any broken or weakened devices should be replaced at this time.
- (8) Manatees must not be harassed in the process of turning them away from the lock.

SCPSA already has manatee exclusion devices in place and implemented modified lock operations for manatee protection. SCPSA proposes to formalize these conditions as part of a RTE species management plan for the manatee.

2.3.3.9 Magnuson-Stevens Fishery Conservation Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA, 16 U.S.C. §1855(b)(2)) governs the conservation and management of all marine fish (including anadromous) throughout their migratory range except when in a foreign nation's waters. Areas containing habitat essential to the long-term survival and health of U.S. fisheries are designated as Essential Fish Habitat (EFH) under the MSA. Certain properties of the water column, such as temperature, nutrients, or salinity, and substrates are essential to various species. EFH includes those habitats that support life stages (e.g., breeding, spawning, nursery, feeding, and protection) of each managed species and can consist of both the water column and the underlying surface (e.g., riverbed) of a particular area.

The Act requires federal agencies to consult with the Secretary of Commerce regarding any action or proposed action authorized, funded, or undertaken by the agency that may adversely affect EFH identified under the Act (50 CFR §600.905 to 930). The required contents of an EFH assessment include (1) a description of the action (covered by the EIS); (2) an analysis of the potential adverse effects of the action specifically on EFH and managed species; (3) the Commission's conclusions regarding the effects of the action on EFH; and (4) proposed mitigation. EFH is addressed in section 3.3.2, *Aquatic Resources*.

2.3.3.10 National Environmental Policy Act of 1969

Section 102(2)(C) of the National Environmental Policy Act of 1969 (NEPA), requires the EPA to review certain proposed actions of federal agencies, and to publicly comment on the environmental impacts of major federal actions including actions that are the subject of draft and FEISs. If EPA determines that the action is environmentally unsatisfactory, it is required to refer the matter to the President's Council on Environmental Quality.

In its review of the Santee Cooper draft EIS, by letter filed May 25, 2007, EPA provided a rating of EC-1 (Environmental Concerns). This rating indicates that EPA has identified environmental effects that should be avoided to fully protect the environment, corrective measures that may require changes to the proposed action, and/or mitigation measures that could reduce the environmental effects. EPA recommends the following:

- (1) Take measures to enhance DO concentrations and improve water quality in the project tailwaters, including providing higher minimum flows through a new minimum flow turbine with specific design recommendations.
- (2) Continue to monitor water quality, long-term, in the project area to determine the effectiveness of downstream flows and other project changes on improving water quality.

These issues are discussed in section 3.3.1, *Water Resources*.

2.3.3.11 National Historic Preservation Act

Relicensing is considered an undertaking under section 106 of the National Historic Preservation Act of 1966, as amended.²² Section 106 requires that every federal agency "take into account" how each of its undertakings could affect historic properties. Historic properties are districts, sites, buildings, structures, traditional cultural properties, and objects significant in American history, architecture, engineering, and culture that are eligible for inclusion in the National Register of Historic Places (National Register).

To meet the requirements of section 106, the Commission will prepare and execute a PA with the South Carolina State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (Advisory Council) for the protection of historic properties from the effects of the continued operation of the Santee Cooper Project.²³ The terms of the PA would ensure that SCPSA address and treat all historic properties identified within the project area through the development and implementation

²²16 U.S.C. §470 (s).

²³As part of relicensing, SCPSA conducted a Phase 1 cultural resources investigation. At the time, no further Phase 1 archaeological work was recommended. However, it was recommended that any changes in facility or land use should prompt consideration of an intensive survey of the project area and SHPO review.

of an HPMP. The HPMP would include on-going consultation involving historic properties for the term of any new license.

2.3.4 Staff Alternative

The staff alternative includes all measures proposed by SCPSA, along with the following additional measures:

- (1) Provide higher seasonal minimum flows below Santee dam of 1,200 cfs from May through January, and 2,400 cfs from February through April.
- (2) Develop a low flow/emergency contingency plan (i.e., drought contingency plan) for the operation of the project during low inflow and/or drought periods.
- (3) Develop an adaptive management program to assess the effectiveness of flow alternatives in providing aquatic habitat, protecting water quality, and navigation.
- (4) Develop and implement a project operations and flow monitoring plan, as part of the comprehensive adaptive management program.
- (5) Form an interagency Technical Advisory Committee for instream flows.
- (6) Conduct water quality monitoring and remediation as part of the adaptive management program;
- (7) Construct fish passage facilities and implement entrainment protection measures, including:
 - a. a fish passage implementation plan, as well as fishway design and construction plans for all constructed fishways;
 - b. post-construction fishway effectiveness evaluation plans for all constructed fishways;
 - c. fishway attraction flows that are within the range of the high and low passage design flows for all fishways;²⁴
 - d. upstream passage for Santee dam: diadromous fish population monitoring in the Santee River downstream of the dam, construction

²⁴The NMFS revised prescription calls for attraction flows within the high and low design flows such that: “The low passage design flow is the lowest river discharge for which migrants are expected to be present, migrating, and dependent on the proposed facility for safe passage. The high fish passage design flow is the highest stream discharge for which migrants are expected to be present, migrating and dependent on the proposed facility for safe passage. Within this range of stream flow, migrants should be able to pass in a safe, timely, and effective manner.”

- and operation of a trap and sort facility and eventually a permanent upstream fish passage facility, and eel passage study and measures;
- e. upstream passage for Pinopolis lock and dam: 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;
 - f. operation and maintenance plans for all constructed fishways;
 - g. evaluation and modification plans for all constructed fishways;
 - h. post-licensing downstream fish passage/confirmatory survival studies to quantify downstream passage of diadromous fish at the 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.
- (8) Prepare species management plans for federally listed threatened and endangered wildlife species (e.g., bald eagle and red-cockaded woodpecker) within the project boundary and affected by project operations, and incorporate those plans into the CLMP for the project, as appropriate.
 - (9) Provide improvements to Santee NWR including pumping station maintenance, 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.
 - (10) Develop a recreation plan and update the plan every 6 years for the life of the license.
 - (11) Improve bank fishing access and parking in the Jefferies station tailrace and the Old Highway 301 causeway and bridge.
 - (12) Revise the CLMP (shoreline management plan) and update the plan every 10 years for the life of the license.

2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

Alternatives to the relicensing proposal that were considered but eliminated from detailed study because they are not reasonable in this case include issuance of a nonpower license and project retirement.

2.4.1 Issuing a Nonpower License

Issuing a nonpower license would not provide a long-term resolution of the issues associated with the relicensing of the Santee Cooper Project. A nonpower license is a

temporary license that the Commission would terminate whenever it determines that another government agency would assume regulatory authority and supervision over the lands and facilities covered by the nonpower license. In this case, no agency has suggested its willingness or ability to do so. No party has sought a nonpower license, and we have no basis for concluding that the project should no longer be used to produce power. Thus, in these circumstances, a nonpower license is not a realistic alternative to relicensing.

2.4.2 Retiring the Project

Project retirement could be accomplished with or without dam removal. Either alternative would involve denial of a license application and surrender or termination of an existing license with appropriate conditions. Dam removal has not been recommended by any party, and we have no basis for recommending it or studying it as an alternative. The project provides a viable, safe, and clean renewable source of power to the region and contributes to the local economy by providing a source of revenue to SCPSA, and major recreational benefits to the area.

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