

169 FERC ¶ 61,181
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Neil Chatterjee, Chairman;
Richard Glick and Bernard L. McNamee.

South Carolina Public Service Authority

Project No. 199-235

DETERMINATION ON PROJECT INVESTMENTS UNDER SECTION 36 OF THE
FEDERAL POWER ACT

(Issued December 3, 2019)

1. On October 8, 2019, South Carolina Public Service Authority (Authority), licensee for the Santee Cooper Hydroelectric Project No. 199, filed a request for a determination under section 36(c) of the Federal Power Act (FPA)¹ that certain project investments made over the term of the existing license meet the criteria set forth in subsection 36(b)(2), such that the investments should be considered when the Commission sets the term for the next license for the project.² The project, which is located on the Santee and Cooper Rivers in Berkeley, Calhoun, Clarendon, Orangeburg, and Sumter Counties, South Carolina, consists of: (1) Lake Marion, the Santee Dam, and the Santee powerhouse; (2) the diversion canal; and (3) Lake Moultrie, the Pinopolis Dam, the Jefferies powerhouse, and the Jefferies Lock.

I. Background

2. On May 9, 1979, the Commission issued the Authority a new license for the Santee Cooper Project, with an expiration date of March 31, 2006.³ Since the expiration

¹ 16 U.S.C. § 823g(c) (2018).

² South Carolina Public Service Authority's October 7, 2019 Request for Determination under section 36(c) of the Federal Power Act (Request).

³ *South Carolina Public Service Authority*, 7 FERC ¶ 61,148 (1979) (1979 License).

of the license, the project has operated under an annual license.⁴ The Authority filed an application for a new license on March 15, 2004.⁵

3. Section 15(e) of the FPA provides that any new license issued shall be for a term that the Commission determines to be in the public interest, but no less than 30 years or more than 50 years.⁶ On October 19, 2017, the Commission established a 40-year default license term policy for original and new licenses.⁷

4. On October 23, 2018, the America's Water Infrastructure Act of 2018 was enacted.⁸ Among other things, the Act added section 36 to the FPA, requiring the Commission to consider, and give equal weight to, project-related investments by the licensee under the new license and project-related investments by the licensee over the term of the existing license.⁹ Section 36(b)(2) requires the Commission to consider investments by the licensee over the term of the existing license (including any terms under annual licenses) that: "(A) resulted in redevelopment, new construction, new capacity, efficiency, modernization, rehabilitation or replacement of major equipment, safety improvements, or environmental, recreation, or other protection, mitigation, or enhancement measures conducted over the term of the existing license; and (B) were not expressly considered by the Commission as contributing to the length of the existing license term in any order establishing or extending the existing license term."¹⁰

⁴ April 11, 2006 Notice of Authorization for Continued Project Operation.

⁵ South Carolina Public Service Authority's March 15, 2004 Application for a New Major License. The license application is pending before the Commission.

⁶ 16 U.S.C. § 808(e) (2018).

⁷ *Policy Statement on Establishing License Terms for Hydroelectric Projects*, 161 FERC ¶ 61,078 (2017) (Policy Statement). The Policy Statement included exceptions to the 40-year license term under certain circumstances, including establishing a longer license term upon a showing by the license applicant that substantial voluntary measures were either previously implemented during the prior license term, or substantial new measures are expected to be implemented under the new license. *Id.* PP 15-16.

⁸ Pub. L. No. 115-270, 132 Stat. 3765 (2018).

⁹ 16 U.S.C.A. §§ 823g(a), (b).

¹⁰ *Id.* § 823g(b)(2).

5. Section 36(c) directs the Commission, within 60 days of receiving licensee's request, to make a determination upon the request of a licensee as to whether any planned, ongoing, or completed investment meets the criteria under section 36(b)(2) but is precluded from quantifying the incremental number of years that an investment may add to the new license term.¹¹

II. Discussion

6. The Authority asserts that it has invested approximately \$99.86 million in the Santee Cooper Project since the mid-1980's in excess of the requirements of its 1979 License.¹² The Authority proposes 11 investments for consideration under FPA section 36(c). These investments all involve project works on the Pinopolis Dam, which is located on the Cooper River and impounds Lake Moultrie. It consists of: the West Dam, the West Dam Extension, and the West Dike; the East Dam, the East Dam Extension, and the East Dike; the North Dike; the Jefferies Lock;¹³ and the Jefferies Hydroelectric Station.

7. Specifically, the Authority requests that the Commission determine whether the following project investments meet the criteria under FPA section 36(b)(2):

- a) replacement of the emergency tainter gate of the Jefferies Lock;
- b) seismic upgrade of the East Dam and East Dam Extension;
- c) installation of dam and dike upstream slope protection system;
- d) upgrades to the Jefferies Hydro Units 2 and 4;
- e) upgrade of the Jefferies Hydro Unit 5 bulkhead;
- f) cybersecurity upgrade for the Jefferies Hydroelectric Station;
- g) replacement of the upper miter gate of the Jefferies Lock;
- h) repair of the lower miter gate at the Jefferies Lock;

¹¹ *Id.* § 823g(c).

¹² Request at 9.

¹³ In the Request, the Authority refers to this project feature as the Jefferies Lock. However, in previous filings, the Authority and the Commission have sometimes called it the Pinopolis Lock.

- i) upgrade and replacement of the stoplog, slide gate, and guide at the Jefferies Hydroelectric Station;
- j) replacement and repair of the tainter gate valves and lower miter gate at the Jefferies Lock, and;
- k) studies concerning the seismic stability of the West Dam.¹⁴

8. The Authority notes that the Commission has not issued an order extending the term of the 1979 License.¹⁵ Therefore, the Authority maintains that the Commission must consider, at the time it determines the next license term, any investment meeting FPA section 36(b)(2)(A) criteria that was not a requirement of the 1979 License. We agree and address each of the Authority's completed investments it proposes for consideration in turn.

A. Jefferies Lock Emergency Tainter Gate Replacement

9. The Authority replaced the 1940's-era emergency tainter gate¹⁶ on the Jefferies Lock in 2003 to improve the safety and reliability of the lock operation.¹⁷ The emergency tainter gate closes to prevent an uncontrolled release of water to Lake Moultrie in the event the upper miter gates fail to close.¹⁸ The new gate contains modern improvements, including additional arm struts, gate guide shoes, side and bottom seal design, and updated seismic loading conditions.¹⁹ The replacement cost \$1.5 million.²⁰

10. FPA section 36(b)(2)(A) requires the Commission to consider investments made by the licensee over the term of the existing license that resulted in "redevelopment, new construction... rehabilitation or replacement of major equipment [or] safety

¹⁴ Request at 9.

¹⁵ *Id.* at 8.

¹⁶ A tainter gate is a radial gate used primarily to control the flow of water in a spillway.

¹⁷ Request at 12.

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ *Id.* at 13.

improvements.”²¹ The new emergency tainter gate has modern features that make it safer and more reliable than the replaced 1940’s-era gate. The Authority’s investment in a new emergency tainter gate has not been considered by the Commission to establish or extend any license term for the project. Therefore, we find this investment meets the FPA section 36(b)(2) criteria for consideration when establishing the next license term.

B. East Dam and East Dam Extension Seismic Upgrades

11. In 2004, the Authority completed repairs on the East Dam and East Dam extension to improve their seismic resilience.²² To prevent liquefaction of the East Dam and East Dam extension during an earthquake, the Authority installed 3,500 stone columns into the foundation along 4.2 miles of the East Dam and East Dam extension, constructed a downstream berm over the columns with a top elevation approximately equal to the normal pool elevation of Lake Moultrie, and installed a drainage network between the top of the stone columns and the bottom of the berms.²³ These upgrades cost approximately \$6.3 million.²⁴

12. FPA section 36(b)(2)(A) requires the Commission to consider investments made by the licensee over the term of the existing license that resulted in “safety improvements.”²⁵ Here, the Authority’s upgrades to the East Dam and East Dam extension improved their seismic reliability and stability. These improvements have not been considered by the Commission to establish or extend any license term for the project. Therefore, we find that the Authority’s investment in seismic upgrades to the East Dam and the East Dam extension qualify as safety improvements meeting the criteria under FPA section 36(b)(2)(A).

C. Dam and Dike Upstream Slope Protection System

13. After a tropical storm damaged the upstream slopes of the East Dam in 2004, the Authority initiated a comprehensive slope protection study to identify critical portions of the project’s dams and dikes that were vulnerable to damage from wind and wave

²¹ 16 U.S.C. § 823b(b)(2)(A).

²² Request at 13-14.

²³ *Id.*

²⁴ *Id.*

²⁵ 16 U.S.C. § 823b(b)(2)(A).

events.²⁶ As a result of the study, the Authority designed a new upstream slope protection system to minimize future damage and mitigate potential dam failure.²⁷ In total, 15.5 miles of dams and dikes were retrofitted with the new upstream slope protection.²⁸ This slope protection system cost approximately \$20.6 million.²⁹

14. FPA section 36(b)(2)(A) requires the Commission to consider investments made by the licensee over the term of the existing license that resulted in “safety improvements.”³⁰ The Authority’s new dam and dike upstream slope protection system increased the project’s resilience to water and wind damage. The Commission has not previously considered these repairs to establish or extend any license term for the project. Therefore, we find that the dam and dike upstream slope protection installation qualifies as a safety improvement meeting the criteria under FPA section 36(b)(2).

D. Jefferies Hydro Units 2 and 4 Upgrades

15. The Authority rehabilitated the hydraulic turbines and governor systems on the Jefferies Hydro Units 2 and 4 from 2013 to 2016.³¹ This project included replacing the existing Kaplan runners with a fish-friendly design, rewinding the electrical generator components, installing new discharge rings, and upgrading the governor and control systems.³² In addition, the Authority equipped Unit 2 with black start capabilities.³³ These upgrades cost approximately \$58.1 million.³⁴

16. FPA section 36(b)(2)(A) requires the Commission to consider investments made by the licensee over the term of the existing license that constitute “redevelopment, new construction, ... rehabilitation or replacement of major equipment, safety improvements,

²⁶ Request at 16.

²⁷ *Id.*

²⁸ *Id.*

²⁹ *Id.*

³⁰ 16 U.S.C. § 823b(b)(2)(A).

³¹ Request at 19.

³² *Id.*

³³ *Id.*

³⁴ *Id.*

or environmental, recreation, or other protection, mitigation, or enhancement measures.”³⁵ The Authority’s rehabilitation of Jefferies Hydro Units 2 and 4 enhanced the project by replacing the Kaplan runners with a fish-friendly design and adding black start capabilities. The Commission has not previously considered the Unit 2 and 4 upgrades to establish or extend any license term. Therefore, we find that the Jefferies Hydro Units 2 and 4 upgrades qualify as a rehabilitation meeting the criteria under FPA section 36(b)(2).

E. Jefferies Hydro Unit 5 Bulkhead Upgrade

17. When the Jeffries Hydro Unit 5 was originally constructed in the 1940’s, water passages for a future Unit 5 were built.³⁶ Because the electrical and mechanical equipment for Unit 5 were not installed, the water passages were secured with stop logs³⁷ at that time.³⁸ The Authority never installed a Unit 5 and, in 2016, decided to permanently close the water passages.³⁹ To do so, the Authority replaced the 75-year-old stop logs with a permanent bulkhead in 2017.⁴⁰ This eliminated the risk of flooding the powerhouse through the Unit 5 water passages in the event the stop logs failed.⁴¹ This investment cost approximately \$1.24 million.⁴²

18. FPA section 36(b)(2)(A) requires the Commission to consider investments made by the licensee over the term of the existing license that result in “redevelopment, new construction, ... rehabilitation or replacement of major equipment, [or] safety improvements.”⁴³ The Jefferies Hydro Unit 5 bulkhead upgrade improved project safety by removing the flooding risk through the water passages posed by the stop logs and

³⁵ 16 U.S.C. § 823b(b)(2)(A).

³⁶ Request at 20.

³⁷ Stop logs are hydraulic control units (rectangular beams or boards) used to regulate flow and water surface elevation in a river, canal, or reservoir.

³⁸ Request at 20.

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ *Id.*

⁴² *Id.*

⁴³ 16 U.S.C. § 823b(b)(2)(A).

installing a permanent bulkhead. The Commission has not previously considered this upgrade to establish or extend any license term. Therefore, we find that the Jefferies Hydro Unit 5 bulkhead upgrade meets the criteria under FPA section 36(b)(2).

F. Jefferies Hydro Cybersecurity Upgrade

19. In 2016, a Commission inspection concluded that the Authority needed to upgrade the cybersecurity system for the Jefferies Hydro Unit because it is classified as a Security Group 1 or 2⁴⁴ dam with black start capability.⁴⁵ To meet Commission cybersecurity requirements and cybersecurity best practices, the Authority replaced the existing Emerson distributed control system (DCS), obsolete processors, and network control switches.⁴⁶ This upgrade cost approximately \$1.1 million.⁴⁷

20. FPA section 36(b)(2)(A) requires the Commission to consider investments made by the licensee over the term of the existing license that resulted in “safety improvements.”⁴⁸ Here, the Authority’s cybersecurity upgrades enhanced the project’s overall ability to resist cybersecurity attacks. These improvements were not considered by the Commission to establish or extend any license term for the project. Therefore, we find that the Authority’s investment in cybersecurity upgrades meet the criteria under FPA section 36(b)(2)(A).

⁴⁴ The Commission’s Division of Dam Safety and Inspections (D2SI) classifies hydroelectric projects based on their physical and cyber security risks. Security Groups 1 and 2 include those projects that have the potential to cause significant to high consequences if attacked. *See* Federal Energy Regulatory Commission, FERC Security Program for Hydropower Projects, Revision 3A (2016), <https://www.ferc.gov/industries/hydropower/safety/guidelines/security/security.pdf>.

⁴⁵ Request at 21.

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ 16 U.S.C. § 823b(b)(2)(A).

G. Upper Miter Gate Replacement at the Jefferies Lock

21. The upper miter gate⁴⁹ of the Jefferies Lock deformed when it closed against a broken turnbuckle in 1989.⁵⁰ The Commission approved the Authority's proposed repairs to the gate in 1997, and the Authority completed the replacement in 1998.⁵¹ The gate replacement cost approximately \$2.3 million.⁵²

22. FPA section 36(b)(2)(A) requires the Commission to consider investments made by the licensee over the term of the existing license that resulted in "redevelopment, new construction... rehabilitation or replacement of major equipment [or] safety improvements."⁵³ The Authority's replacement of the miter gate appears to meet these criteria. However, to assist the Commission in making a license term decision, the Authority may wish to provide additional information to clarify aspects of the investment, if any, that enhanced the project beyond repairs necessary to ensure continued operation of the project.

H. Jefferies Lock Lower Miter Gate Repair

23. The Authority repaired the lower miter gates on the Jefferies Lock in 2008 after the east gate malfunctioned when the gate moved from its normal vertical position and one of the two anchor bars failed in tension during a routine fish lift operation.⁵⁴ The Authority determined that the root cause of the malfunction was the deterioration of a hinge pin and that the deterioration affected both the east and west lower miter gates.⁵⁵

⁴⁹ A miter gate system comprises two gates that provide closure at one end of a lock at an angle. The system regulates the entrance and exit of navigational locks to allow passage between varying levels in a river system.

⁵⁰ Request at 11.

⁵¹ *Id.*

⁵² *Id.* at 12.

⁵³ 16 U.S.C. § 823b(b)(2)(A).

⁵⁴ Request at 14-15.

⁵⁵ *Id.*

The Authority repaired the foundation and seals of both gates and repaired or replaced many appurtenant facilities as well.⁵⁶ The repairs cost approximately \$1.5 million.⁵⁷

24. FPA section 36(b)(2)(A) requires the Commission to consider investments made by the licensee over the term of the existing license that resulted in “redevelopment, new construction... rehabilitation or replacement of major equipment [or] safety improvements.”⁵⁸ The Authority’s repairs to the lower miter gate appears to meet these criteria. However, to assist the Commission in making a license term decision, the Authority may wish to provide additional information to clarify aspects of the investment, if any, that enhanced the project beyond repairs necessary to ensure continued operation of the project.

I. Jefferies Hydro Stoplog, Slide Gate, and Gate Guide Upgrades and Replacements

25. In 2009, the intake guide on the Unit 4 hydro-turbine failed, destroying the slide gate.⁵⁹ As a result, the Authority fabricated a new set of stop logs, rehabilitated the existing wheeled gate, rebuilt the existing intake gate guide, and installed a new intake slide gate.⁶⁰ The Authority states that the replaced equipment had been in-service since the 1940’s.⁶¹ The repairs and replacements cost approximately \$1.3 million.⁶²

26. FPA section 36(b)(2)(A) requires the Commission to consider investments made by the licensee over the term of the existing license that resulted in “redevelopment, new construction... rehabilitation or replacement of major equipment [or] safety

⁵⁶ *Id.* The Authority states that appurtenant facilities repaired or replaced include: the pintle base plates; pintle shoes; anchorage bars; anchor pins; link pins; gudgeon pins; pintles; pintle bushings, and; timber fenders. *Id.*

⁵⁷ *Id.*

⁵⁸ 16 U.S.C. § 823b(b)(2)(A).

⁵⁹ Request at 17.

⁶⁰ *Id.* A slide gate is a type of sluice gate fitted with manual or electrically actuated lifting devices used to control water surface elevation and the flow release.

⁶¹ *Id.*

⁶² *Id.*

improvements.”⁶³ The Authority’s upgrades to and replacements of Unit 4’s stoplog, slide gate, and gate guide appears to meet this criteria. However, to assist the Commission in making a license term decision, the Authority may wish to provide additional information to clarify aspects of the investment, if any, that enhanced the project beyond repairs and replacements necessary to ensure the continued operation of the project.

J. Jefferies Lock Tainter Gate Valve Replacement and Repairs and Lower Miter Gates Repairs

27. After an in-service failure of the upper northwest Jefferies Lock tainter gate valve in 2010, the Authority replaced the failed valve and made repairs to the three other valves on the tainter gate.⁶⁴ To replace the failed valve, the Authority dewatered the lock, removed and disposed of the old valve, designed and fabricated a new valve, replaced the valve operator arm assemblies, bushings, and pins, and replaced the trunnion bearings in 2011.⁶⁵ To repair the three other valves, the Authority replaced the seals and guides and welded repairs to the skin and braces in 2013-2014.⁶⁶ At the same time, the Authority also blast cleaned, weld repaired, and coated the lower miter gates and replaced the east link bar.⁶⁷ These repairs cost approximately \$4.4 million.⁶⁸

28. FPA section 36(b)(2)(A) requires the Commission to consider investments made by the licensee over the term of the existing license that resulted in “redevelopment, new construction... rehabilitation or replacement of major equipment [or] safety improvements.”⁶⁹ The Authority’s replacement of a valve on the Jefferies Lock tainter gate and repairs to three other valves on the tainter gate and the lower miter gate appear to meet this criteria. However, to assist the Commission in making a license term decision, the Authority may wish to provide additional information to clarify aspects of

⁶³ 16 U.S.C. § 823b(b)(2)(A).

⁶⁴ Request at 18.

⁶⁵ *Id.*

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ *Id.*

⁶⁹ 16 U.S.C. § 823b(b)(2)(A).

the investment, if any, that enhanced the project beyond repairs and replacements necessary to ensure continued operation of the project.

K. Studies Concerning the West Dam's Seismic Stability

29. In the 1980s, the Authority states it invested \$1.5 million in studies concerning the West Dam's seismic stability.⁷⁰ The Authority states that U.S. Army Corps of Engineers (Army Corps), not the Authority, funded and completed the construction work to improve the seismic stability of the West Dam.⁷¹ The Authority did not submit information regarding what studies it funded or how those studies contributed to the seismic stability work performed by the Army Corps. The one study filed with the request, the *Santee Cooper Seismic Mitigation Report* (1985), was prepared by the Army Corps, not the Authority or its contractors.⁷²

30. The Authority's request for Commission determination under section 36(c) contains insufficient information on this investment to determine whether it warrants consideration.⁷³ It is unclear what studies the Authority funded and how those studies relate to the West Dam seismic upgrade work funded and performed by another entity. Further, we are not certain that Congress intended for us to consider investments solely in studies without an associated *licensee* investment in safety improvements to the project. Therefore, based on the information before us, we cannot determine whether this investment meets the criteria under section 36(b)(2). The Authority, however, is free to file further information on these matters during the relicensing process.

III. Processing Future Section 36 Requests

31. Because the Office of Energy Projects, in the course of reviewing license applications, regularly considers investments made by licensees during prior license terms, we direct that office to in the future issue initial orders regarding section 36 requests. Any such decisions will be subject to review by the Commission, where rehearing is sought.

⁷⁰ Request at 9-11.

⁷¹ *Id.* at 10.

⁷² *Id.* at Attachment A-1.

⁷³ 16 U.S.C. § 823b(b)(2)(A).

The Commission orders:

(A) That the Authority's following investments meet the criteria set forth in section 36(b)(2) of the Federal Power Act: the replacement of the emergency tainter gate of the Jefferies Lock; the seismic upgrade of the East Dam and East Dam Extension; the installation of dam and dike upstream slope protection system; upgrades to the Jefferies Hydro Units 2 and 4; the upgrade of the Jefferies Hydro Unit 5 bulkhead, and; the cybersecurity upgrade for the Jefferies Hydroelectric Station.

(B) That the Authority's following investments appear to meet the criteria set forth in section 36(b)(2) of the Federal Power Act: the replacement of the upper miter gate of the Jefferies Lock; the repair of the lower miter gate at the Jefferies Lock; the upgrade and replacement of the stoplog, slide gate, and guide at the Jefferies Hydroelectric Station, and; the replacement and repair tainter gate valves and lower miter gate at the Jefferies Lock.

(C) That it is unable to find whether the Authority's investments in studies regarding the West Dam's seismic stability meet the criteria set forth in section 36(b)(2) of the Federal Power Act.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.