

143 FERC ¶ 61,249
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Jon Wellinghoff, Chairman;
Philip D. Moeller, John R. Norris,
Cheryl A. LaFleur, and Tony Clark.

Alabama Power Company

Project Nos. 2146-111
618-000
82-000

ORDER ISSUING NEW LICENSE

(Issued June 20, 2013)

Introduction

1. Alabama Power Company has filed, pursuant to sections 4(e) and 15 of the Federal Power Act (FPA),¹ an application for a new license to continue operation and maintenance of the Coosa Project No. 2146, the Mitchell Dam Project No. 82, and the Jordan Dam Project No. 618 as one project, the Coosa River Project No. 2146. The project's authorized capacity being licensed is a combined 960.9 megawatts (MW). The project is located on the Coosa River, in Cherokee, Etowah, Calhoun, St. Clair, Talladega, Shelby, Coosa, Chilton, and Elmore counties, Alabama, and Floyd County, Georgia.

2. The Coosa River Project includes seven developments that occupy about 271.9 acres of federal lands administered by the U.S. Bureau of Land Management (BLM).² The Logan Martin development occupies less than an acre of federal land, the Lay development occupies 133.5 acres, the Mitchell development occupies 127.3 acres,

¹ 16 U.S.C. §§ 797(e) and 808 (2006).

² The Federal Power Commission (FPC), now the Federal Energy Regulatory Commission, found the Coosa River to be a navigable waterway of the United States. *See Alabama Power Company*, 54 FPC ¶ 2452 (1975). The project is required to be licensed under section 23(b)(1) of the FPA, 16 U.S.C. § 817 (2006), because it is located on a navigable waterway of the United States.

and the Jordan development occupies 10.1 acres. The remaining three developments (Weiss, Neely Henry, and Bouldin) do not occupy any federal lands. As discussed below, this order issues a new license for the Coosa River Project.³

Background

3. The Federal Power Commission (FPC), predecessor to the Federal Energy Regulatory Commission (Commission), issued an original license for the Coosa Project No. 2146 in 1957.⁴ The Mitchell Project No. 18 and the Jordan Dam Project No. 618 were originally licensed in the 1920s and relicensed in 1975 and 1980, respectively.⁵ All three licenses expired on July 31, 2007. Since then, the projects have operated under annual licenses pending the disposition of the new license application.

4. Alabama Power filed its relicense application on July 28, 2005. Staff found the license application to be incomplete and requested additional information from Alabama Power on April 21 and December 8, 2006. In addition, staff held technical conferences on January 11 and July 12, 2007, to discuss the additional information requests and Alabama Power's hydrological and operational model of the Coosa River Project system.

5. On June 6, 2008, the Commission issued a public notice that was published in the *Federal Register*, accepting the application for filing, and soliciting motions to intervene and protests, indicating the application was ready for environmental analysis, and soliciting comments, recommendations, terms and conditions, and prescriptions.⁶ The notice set August 6, 2008, as the deadline for filing motions to intervene, comments, recommendations, terms and conditions, and prescriptions. The Alabama Department of Conservation and Natural Resources (Alabama DCNR), the Georgia Department of Natural Resources, Environmental Protection Division (Georgia EPD), and the U.S.

³ The Coosa, Mitchell, and Jordan Dam Projects, which encompass seven developments, are part of a single unit of development; therefore, they warrant being licensed as one project.

⁴ *Alabama Power Company*, 18 FPC 257 (1957) (Coosa Project, which includes the Weiss, Neely Henry, Logan Martin, Lay, and Bouldin developments).

⁵ *Alabama Power Company*, 54 FPC 2452 (1975) (Mitchell Project); and *Alabama Power Company*, 13 FERC ¶ 62,082 (1980) (Jordan Dam Project).

⁶ 73 Fed. Reg. 34,002-34,004 (June 16, 2008).

Department of the Interior (Interior) filed notices of intervention.⁷ Alabama Rivers Alliance and American Rivers (jointly, Alabama Rivers), Atlanta Regional Commission (Atlanta Commission), American Whitewater, Coosa River Paddling, and World Wildlife Fund (Wildlife Fund) timely filed motions to intervene.⁸ More than four years after the deadline, the Coosa River Keeper and Defenders of Wildlife each filed a late motion to intervene, which the Commission denied by separate notices issued December 4, 2012. In addition, the U.S. Fish and Wildlife Service (FWS), Logan Martin Lake Protection Association (Logan Martin Association), and American Whitewater filed comments on the application.

6. Commission staff issued a draft Environmental Assessment (EA) for the Coosa River Project on April 6, 2009, analyzing the potential environmental impacts of the proposed project and alternatives to it. The U.S. Army Corps of Engineers (Corps) was a cooperating agency on the preparation of the draft and final EAs. Alabama Power, FWS, Alabama Rivers, Georgia EPD, Wildlife Fund, the Atlanta Commission, Alabama Rivers, and Dr. James D. Williams filed comments on the draft EA. Commission staff issued a final EA on December 31, 2009.⁹

7. On July 8, 2010, Alabama Rivers Alliance, American Rivers, and Wildlife Fund (jointly, Conservation Groups) filed comments on the final EA. Alabama Power, the Corps, the Atlanta Commission, the Logan Martin Association, and Mr. William J. Copeland filed comments on the final EA on October 1, 2010, November 3, 2010, November 23, 2010, May 12, 2011, and December 6, 2010, respectively. On November 9, 2012, Alabama Rivers filed comments on the EA and on the final Biological Opinion (BO) prepared by FWS for this proceeding. On December 19, 2012, Alabama Power filed a response to Alabama Rivers' November 9, 2012 filing. We have considered the interventions, comments, and recommendations in determining whether, or under what conditions, to issue this license for the Coosa River Project.

⁷ Under Rule 214(a)(2) of the Commission's Rules of Practice and Procedure, Alabama DCNR, Georgia EPD, and Interior became parties to the proceeding upon timely filing their notices of intervention. 18 C.F.R. § 385.214(a)(2) (2012).

⁸ Timely, unopposed motions to intervene are granted by operation of Rule 214(c) of the Commission's Rules of Practice and Procedure. 18 C.F.R. § 385.214(c) (2012).

⁹ Unless otherwise specified, references in this order to the EA are to the final EA.

Project Description

A. Project Area

8. The Coosa River Basin drainage encompasses about 10,161 square miles in Alabama, Georgia, and Tennessee. The Coosa River begins at the confluence of the Oostanaula and Etowah rivers near Rome, Georgia, and flows 267 miles in a southerly direction to its confluence with the Tallapoosa River.

9. The Coosa River is highly regulated, with flows controlled by nine hydropower and storage developments operated by Alabama Power and the Corps. The seven developments of the Coosa River Project are located along a 200-mile-long segment of the Coosa River. From upstream to downstream, they are: the Weiss development at river mile (RM) 226, the Neely Henry development at RM 148, the Logan Martin development at RM 99.5, the Lay development at RM 51, the Mitchell development at RM 38, and the Jordan and Bouldin developments near RM 18. The Weiss, Neely Henry, and Logan Martin developments provide seasonal storage for flood control and power during peak load periods. The Lay, Mitchell, Jordan, and Bouldin developments are operated run-of-river, with daily pool level changes of 1 foot or less.

10. The confluence of the Tallapoosa and Coosa rivers is located about 18 miles downstream of the Jordan Dam, where they meet to form the Alabama River.

B. Project History

11. As noted above, the Mitchell and Jordan Dam Projects were originally licensed and constructed in the early 1920s. Alabama Power also constructed the unlicensed Lay development around this time. In 1925, Alabama Power completed a study of the storage potential of the Coosa River upstream of Lay dam, which recommended the development of five additional hydropower projects in the basin.

12. In 1934, the Corps developed a general plan for the overall development of the Alabama-Coosa River system. In 1941, the Corps submitted a report to Congress that recommended development of the Alabama-Coosa River and tributaries for navigation, flood control, power generation, and other purposes. The Rivers and Harbors Act of 1945 authorized the Corps to develop the Alabama-Coosa River Basin in the interest of navigation, flood control, and hydroelectric power.¹⁰ In 1954, Congress suspended this

¹⁰ Pub.L. No. 79-14 (March 2, 1945).

authorization, insofar as it concerned federal development of the Coosa River for hydropower development, to permit development of the river by private interests under a license issued by the FPC.¹¹ The law stipulated that any license issued by the FPC must include provisions for flood control and navigation, and the project must be operated for flood control and navigation in accordance with reasonable rules and regulations of the Secretary of the Army.

13. Subsequently, Alabama Power applied for, and was issued, a license for the Coosa Project in September 1957, which comprised five developments: Lay, Weiss, Logan Martin, Neely Henry, and Wetumpka.¹² The license was amended in August 1960 to remove the Wetumpka development and authorize the construction of the Bouldin development. Alabama Power began commercial operations of the Weiss, Logan Martin, Neely Henry, and Bouldin developments in 1962, 1964, 1966, and 1967, respectively.

14. The 1957 license authorized storage at the Weiss, Logan Martin, and Neely Henry developments for flood control purposes. In the 1960s Alabama Power and the Corps developed Memoranda of Understanding to clarify the responsibilities of each entity with regard to operating the developments for flood control and other purposes. The Corps subsequently developed Reservoir Regulation Manuals (Reservoir Manuals) for the three developments.¹³ The Corps must approve any changes in the flood control operations of the developments. Alabama Power has operated the developments in accordance with the Reservoir Manuals, with certain variances for the Neely Henry development.

¹¹ Pub.L. No. 83-436.

¹² The existing, unlicensed Lay development was brought under license at this time. The license authorized the Lock 3 development, which was later named Neely Henry, and the Kelly Creek development, which was later named Logan Martin.

¹³ The Corps approved the existing Reservoir Manuals for the Weiss, Neely Henry, and Logan Martin developments in June 2004, January 1979, and June 2004, respectively. These manuals were placed in the public record of this proceeding on June 6, 2013.

C. Project Facilities**1. Weiss Development**

15. The Weiss development consists of: (1) an approximately 1.5-mile-long diversion dam consisting of earthen east and west embankments, a concrete spillway with six gates, and a concrete non-overflow section; (2) a 2.5-mile-long secondary dam which includes east and west earthen embankments, two concrete non-overflow sections, and a powerhouse intake; (3) three saddle dikes; (4) a 52-mile-long, 30,200-acre reservoir at normal pool elevation 564 feet mean sea level (msl);¹⁴ (5) a 7,000-foot-long power canal which carries water from the main reservoir to a forebay lake; (6) a powerhouse on the secondary dam with three generating units with a total rated capacity of 87.75 MW; (7) a 1,300-foot-long tailrace channel; (8) a substation; and (9) other appurtenant equipment. Additionally, a bypassed reach extends from the diversion dam to the outlet of the powerhouse tailrace channel on the Coosa River. A more detailed description of these facilities is included in Ordering Paragraph B.

2. Neely Henry Development

16. The Neely Henry development consists of: (1) an approximately 0.9-mile-long dam consisting of earthen east and west embankments, a powerhouse intake section, a concrete spillway with six gates, and a concrete non-overflow section; (2) a 78-mile-long, 11,235-acre reservoir at normal pool elevation 508 feet; (3) a powerhouse with three generating units with a total rated capacity of 72.9 MW; (4) a substation; and (5) other appurtenant equipment. A more detailed description of these facilities is included in Ordering Paragraph B.

3. Logan Martin Development

17. The Logan Martin development consists of: (1) an approximately 1.2-mile-long dam consisting of earthen east and west dikes, a concrete spillway with seven gates, and a concrete powerhouse intake section; (2) a 48.5-mile-long, 15,263-acre reservoir at normal pool elevation 477 feet; (3) a concrete powerhouse containing three generating units with a total rated capacity of 128.25 MW; (4) a substation; and (5) other appurtenant equipment. A more detailed description of these facilities is included in Ordering Paragraph B.

¹⁴ All elevations referenced in this license are in msl.

4. Lay Development

18. The Lay development consists of: (1) an approximately 0.4-mile-long dam consisting of an earthen east embankment, concrete spillway with 26 gates, a concrete powerhouse intake section, and concrete bulkhead section; (2) a 48.2-mile-long, 12,000-acre lake at normal pool elevation 396 feet; (3) a powerhouse with six generating units with a total rated capacity of 177 MW; (4) a substation; and (5) other appurtenant equipment. Alabama Power is in the process of upgrading turbine units 1 and 4 at this development, which will not affect the project's installed capacity but will increase generation.¹⁵ A more detailed description of these facilities is included in Ordering Paragraph B.

5. Mitchell Development

19. The Mitchell development consists of: (1) an approximately 0.32-mile-long dam consisting of a concrete spillway with 26 gates and two concrete powerhouse intake sections; (2) a 14-mile-long, 5,850-acre lake at normal pool elevation 312 feet; (3) two powerhouses, integral with the dam, the first with one operating generating unit and three non-operating generating units, and the second with three generating units, for a total rated capacity of 170 MW; (4) a substation; and (5) other appurtenant equipment. A more detailed description of these facilities is included in Ordering Paragraph B.

6. Jordan Development

20. The Jordan development consists of: (1) an approximately 0.35-mile-long dam consisting of east and west non-overflow sections, a concrete powerhouse intake section, and a concrete spillway with 35 gates; (2) an 18-mile-long, 5,880-acre lake at normal pool elevation 252 feet; (3) a concrete powerhouse with four generating units with a total rated capacity of 100 MW; (4) a substation; and (5) other appurtenant equipment.

¹⁵ See *Alabama Power Company*, 138 FERC ¶ 62,248 (2012). The order requires the licensee to: (1) file revised Exhibit M drawings; (2) start construction within 2 years, and complete construction within 4 years, from the issuance date of the order; (3) file photo documentation of the nameplate capacity of each new turbine unit after the upgrade; and (4) file, within 90 days of completion of the facilities, revised Exhibit L (presently Exhibit F) drawings to reflect as-built conditions. In August 2012, Commission staff approved a revised Exhibit M which reflects the turbine upgrades. *Alabama Power Company*, 140 FERC ¶ 62,126 (2012). Article 304 of the new license requires items 2, 3, and 4 above.

Alabama Power is in the process of upgrading turbine unit 4 at this development, which will not affect the project's installed capacity but will increase generation.¹⁶ A more detailed description of these facilities is included in Ordering Paragraph B.

7. Bouldin Development

21. The Bouldin development is located on a power canal adjacent to a bypassed section of the Coosa River. The power canal intake is located on Jordan Lake, about 1 mile upstream of Jordan dam, and the tailrace canal empties into the Coosa River downstream of Jordan dam.

22. The Bouldin development consists of: (1) a 3-mile-long power canal and forebay lake, for a total of 920 acres at normal pool elevation 252 feet; (2) an approximately 1.8-mile-long forebay dam consisting of east and west embankments, and a powerhouse intake section; (3) a concrete powerhouse with three generating units with a total rated capacity of 225 MW; (4) a 5-mile-long tailrace channel from the powerhouse to the Coosa River; (5) a substation; and (6) other appurtenant equipment. Alabama Power is in the process of upgrading turbine unit 2 at this development, which will not affect the project's installed capacity but will increase generation.¹⁷ A more detailed description of these facilities is included in Ordering Paragraph B.

¹⁶ *Hydroelectric Power - Alabama Power Company*, 143 FERC ¶ 62,097 (2013). The order requires the licensee to: (1) start construction within 2 years, and complete construction within 4 years, from the issuance date of the order; (2) file, within 90 days of completing construction of the facilities, revised Exhibits K, L (presently Exhibit F), and M, as applicable, to show those project facilities as-built; and (3) file, within 90 days of completion of construction, photo documentation of the nameplate capacity of the new turbine unit. Article 305 of the new license requires items 1, 2, and 3 above.

¹⁷ *Alabama Power Company*, 138 FERC ¶ 62,248. The order requires the licensee to: (1) file revised Exhibit M drawings; (2) start construction within 2 years, and complete construction within 4 years, from the issuance date of the order; (3) file photo documentation of the nameplate capacity of each new turbine unit after the upgrade; and (4) file, within 90 days of completion of the facilities, revised Exhibit L (presently Exhibit F) drawings to reflect as-built conditions. On August 16, 2012, Commission staff approved a revised Exhibit M, which reflects the turbine upgrade. *Alabama Power Company*, 140 FERC ¶ 62,126. Article 304 of the new license requires items 2, 3, and 4 above.

D. Project Recreation Sites

23. Under the current license, Alabama Power operates and maintains, or provides for the operation and maintenance of, 28 project recreation sites. Of these sites, two sites are at the Weiss development; two sites are at the Neely Henry development; two sites are at the Logan Martin development; and six sites are at the Lay development.¹⁸ At the Mitchell development there are six project recreation sites.¹⁹ At the Jordan and Bouldin²⁰ developments, there are 10 project recreation sites.²¹ These sites offer a variety of recreation amenities that include boat launches, fishing piers, docks, campsites, restrooms, and parking areas.

E. Project Boundary

24. The Coosa River Project boundary consists of lands necessary for the safe operation and maintenance of the project and other purposes, such as recreation, shoreline control, and protection of environmental resources.

25. Each of the seven developments at the Coosa River Project has its own project boundary. The project boundary around the Weiss development is generally defined by elevations ranging from 521 to 578 feet. It encloses about 52,000 acres and encompasses

¹⁸ The Coosa River Project Recreation Plan for the Weiss, Neely Henry, Logan Martin, Lay, and Bouldin developments was approved by the Commission on February 28, 1983. *See Alabama Power Company*, 22 FERC ¶ 62,234 (1983).

¹⁹ The Mitchell Project Comprehensive Recreation Master Plan was approved on February 17, 1982. *See Alabama Power Company*, 18 FERC ¶ 62,249 (1982). The plan was amended on November 7, 1985, to add a tailrace fishing access facility. *See Alabama Power Company*, 33 FERC ¶ 62,175 (1985).

²⁰ The Bouldin forebay is connected to Jordan Lake through a canal, which provides public boat access to the Bouldin forebay. The current Coosa River Project Licensed Hydropower Development Recreation Report (Form 80) combines recreation data for the Bouldin and Jordan developments.

²¹ The Jordan Dam Project Recreation Use Plan was approved by the Commission on October 27, 1980. *See Alabama Power Company*, 13 FERC ¶ 62,082. The plan was amended on October 24, 2001, to add a tailrace fishing access facility. *See Alabama Power Company*, 97 FERC ¶ 62,072 (2001).

all project structures, including the 20-mile-long bypassed reach, two project recreation sites, and the Weiss reservoir. The project boundary around the Neely Henry development is generally defined by elevations ranging from 509 to 527 feet, and encloses about 12,941 acres and encompasses all project structures, two recreation sites, and the Neely Henry reservoir. The project boundary around the Logan Martin development is generally defined by elevations ranging from 473.5 to 489 feet, and encloses about 27,000 acres and encompasses all project structures, two recreation sites, and the Logan Martin reservoir. The project boundary around the Lay development is generally defined by elevations from 397 to 413 feet, and encloses about 21,700 acres and encompasses all project structures, six recreation sites, and Lay Lake. The project boundary around the Mitchell development is generally defined by elevation 317 feet, and encloses about 9,494 acres and encompasses all project structures, six recreation sites, and Mitchell Lake. The project boundaries around the Jordan and Bouldin developments are generally defined by elevations 252 and 253 feet, respectively. They enclose about 7,819 acres and encompass all project structures, 10 recreation sites, Jordan Lake, and the Bouldin forebay.

F. Current Project Operation

1. Weiss Development

26. The Weiss development is a peaking project operated to provide energy during peak demand periods. The project typically generates power 1 to 6 hours per day Monday through Friday. Flows from the Weiss reservoir, impounded by a 1.5-mile-long diversion dam, pass through an unregulated 7,000-foot-long canal into a forebay lake impounded by a second 2.5-mile-long dam, which includes the Weiss powerhouse. After exiting the Weiss powerhouse, flows pass through a 1,300-foot-long tailrace which empties into the Coosa River.

27. Discharges from the powerhouse vary from leakage (during non-generation) to 25,200 cubic feet per second (cfs; maximum hydraulic capacity). Currently, there is no minimum flow requirement for the 20-mile-long bypassed reach of the Coosa River. Flows in excess of the powerhouse capacity are spilled into the bypassed reach through one or more of its six spillway gates, providing controlled releases.

28. Alabama Power operates the Weiss development to maintain the reservoir level at or below an operating curve.²² The operating curve begins at a winter pool elevation of

²² Since 1965 the reservoir elevation has averaged less than 6 inches below the operating curve during the months April through June. From July through mid-

558 feet on January 1, and linearly rises to elevation 564 feet by April 30. From May 1 through August 31 the curve remains at elevation 564 feet to provide for summer recreation at the reservoir. From September 1 through December 31 the curve linearly declines six feet, to elevation 558 feet, to make room for spring flood flows. The operating curve also delineates storage in the reservoir available for power generation and flood control. Storage varies monthly, but generally elevations 558 to 564 feet provide 148,400 acre-feet of storage for power generation, and elevations 564 to 574 feet provide 397,000 acre-feet of storage for flood control.

29. Flood control operations are defined by the Corp's June 2004 Alabama-Coosa River Basin Reservoir Regulation Manual for the Weiss Reservoir (Weiss Manual).²³ Chart No. 19 in the Weiss Manual shows Alabama Power's operating curve, as described above, which is the maximum elevation at which Alabama Power may maintain the reservoir during normal (i.e., non-flood control) inflow conditions. As long as the Weiss reservoir surface elevation is below the operating curve, Alabama Power may operate the Weiss development to "satisfy normal system load requirements."²⁴ Once the reservoir levels reach the operating curve, Alabama Power must operate the development in accordance with the Corps' Weiss Manual for flood control.²⁵

30. Chart No. 20 of the Weiss Manual defines the basic regulation schedule for flood control, showing required operations and reservoir outflows for various pool elevations and inflow rates. In general, Chart No. 20 requires that when the reservoir levels are at the operating curve and below 564 feet,²⁶ releases up to hydraulic capacity may be made

September, the average water elevation has been 1 foot or less below the operating curve. On a daily basis, the changes in water elevation are minor.

²³ See Weiss Manual.

²⁴ See Weiss Manual, Chart 20, Flood Control Regulation Schedule, Weiss Reservoir, Operating Instruction 1.

²⁵ Article 40 of the original license for the Weiss, Neely Henry, and Logan Martin developments specifies operations for flood control, "...including the control of the level of the pool caused by the dam, and the discharge of water through the spillways or any outlet structures of such dams, shall be in accordance with such reasonable rules and regulations as may be prescribed by the Secretary of the Army."

²⁶ As noted above, Alabama Power's operating curve is below 564 feet between January 1 and April 30, and September 1 and December 31.

through the powerhouse. At reservoir levels above the operating curve and below 564 feet, releases are to be made through the powerhouse at its full hydraulic capacity. When the reservoir level is at 564 feet, powerhouse and spillway releases are to be used to evacuate the reservoir up to a total of 40,000 cfs. An alternate flow schedule is used to specify releases from 40,000 cfs to 175,000 cfs when the reservoir level is above 564 feet, and rising. However, releases from the dam above 40,000 cfs rarely occur (i.e., since 1965 maximum releases of 50,000 cfs were recorded in two years).

2. Neely Henry Development

31. The Neely Henry development is a peaking project operated to provide energy during peak demand periods. The project typically generates power 1 to 6 hours per day Monday through Friday. Flows from the Neely Henry reservoir, impounded by the 0.9-mile-long dam, pass through a powerhouse which is integral with the dam. After exiting the Neely Henry powerhouse, flows pass directly into the Coosa River.

32. Discharges from the powerhouse vary from leakage (during non-generation) to 26,700 cfs (maximum hydraulic capacity). Flows in excess of the powerhouse capacity are spilled into the Coosa River through one or more of its six spillway gates at the dam, providing controlled releases.

33. Alabama Power operates the Neely Henry development to maintain the reservoir level at or below an operating curve.²⁷ The operating curve begins at a winter pool elevation of 507 feet on January 1, and remains at 507 feet until March 31. From April 1 through April 30 the curve linearly rises to 508 feet. From May 1 through September 30 the curve remains at elevation 508 feet to provide for summer recreation at the reservoir. From October 1 to November 31 the curve linearly declines to 507 feet to make room for spring flood flows, and remains at 507 feet until December 31.²⁸ The operating curve

²⁷ Since 2002 the reservoir elevation has averaged 6 inches or less below the operating curve from November through July, and about 1 foot or less from August through October.

²⁸ Article 50 of the original license specifies the operating curve for the Neely Henry reservoir. On June 30 1999, Alabama Power requested: (1) a temporary 3-year variance to Neely Henry's operating curve to maintain higher water levels during the winter (i.e., an increase the winter pool level by 2 feet from 505 to 507 feet); and (2) a revised reservoir regulation schedule. The Commission and Corps staffs prepared a joint EA to evaluate the environmental effects of modifying the operating curve and the pre-flood evacuation schedule. On February 26, 2001, the Commission approved the revised

also delineates storage in the reservoir available for power generation and flood control. Storage varies monthly, but generally elevations 505 to 508 feet provide 30,640 acre-feet of storage for power generation, and negligible storage above 508 feet for flood control.

34. Flood control operations are defined by the Corp's January 1979 Alabama-Coosa River Basin Reservoir Regulation Manual for the H. Neely Henry Reservoir (Neely Henry Manual),²⁹ as amended by a variance approved by the Commission in 2001. The operating curve is the maximum elevation at which Alabama Power may maintain the reservoir during normal (i.e., non-flood control) inflow conditions. As long as the Neely Henry reservoir surface elevation is below the operating curve, Alabama Power may operate the Neely Henry development to "satisfy normal system load requirements."³⁰

35. Once the reservoir level reaches the operating curve, Alabama Power must operate the development in accordance with the Corps' Neely Henry Manual for flood control. Chart No. 12 of the Neely Henry Manual summarizes a pre-flood evacuation schedule for flood control. Because the Neely Henry reservoir has little storage, flood control is implemented by decreasing the reservoir level as much as 5.5 feet (to 502.5 feet) when flood flows are identified upstream of the Neely Henry reservoir. The pre-flood evacuation schedule shows required operations and reservoir evacuation rates for various pool elevations and inflow rates. Pre-flood evacuation procedures are implemented based

operating curve for a 3-year trial period, but concluded the Corps must approve any revisions to the reservoir regulation schedule (*Alabama Power Company*, 94 FERC ¶ 62,171 (2001)). After the 3-year trial period concluded on March 18, 2004, the Commission authorized Alabama Power to continue operating under the revised operating curve until a decision on its application for a new license is issued (*Alabama Power Company*, 106 FERC ¶ 62,209 (2004)). Alabama Power proposes to continue to operate the project following the interim operating curve. Because the interim operating curve for Neely Henry has been implemented for over 12 years, the EA considered this curve as the existing condition for environmental analysis. *See also* letter from Colonel Stephen J. Roemhildt, District Commander, U.S. Army Corps of Engineers, filed with the Commission on October 25, 2010, stating no objection to the continued operation of the Neely Henry development with the interim operating curve.

²⁹ *See* H. Neely Henry Manual.

³⁰ *Id.*

on the elevation of Neely Henry reservoir, the discharge from the upstream Weiss dam, and flows measured 20 miles upstream at the Gadsden flow gage.

3. Logan Martin Development

36. The Logan Martin development is a peaking project operated to provide energy during peak demand periods. The project typically generates power 1 to 6 hours per day Monday through Friday. Flows from the Logan Martin reservoir, impounded by a 1.2-mile-long dam, pass through a powerhouse which is integral with the dam. After exiting the Logan Martin powerhouse, flows pass directly into the Coosa River.

37. Discharges from the powerhouse vary from leakage (during non-generation) to 33,000 cfs (maximum hydraulic capacity). Flows in excess of the powerhouse capacity are spilled into the bypassed reach through one or more of its seven spillway gates, providing controlled releases.

38. Alabama Power operates the Logan Martin development to maintain the reservoir level at or below an operating curve.³¹ The operating curve begins at a winter pool elevation of 460 feet on January 1 and remains at 460 feet until March 31. On April 1 the elevation linearly rises to 465 feet on May 7, and remains at 465 feet until September 30 to provide recreation on the reservoir. From October 1 through October 31 the curve linearly declines to 462 feet, and from November 1 through December 31 the curve linearly declines to 460 feet to make room for spring flood flows.

39. The operating curve also delineates storage in the reservoir available for power generation and flood control. Storage varies monthly, but generally elevations 460 to 465 feet provide 67,600 acre-feet of storage for power generation, and elevations 465 to 477 feet provide 245,300 acre-feet of storage for flood control.

40. Flood control operations are defined by the Corp's June 2004 Alabama-Coosa River Basin Reservoir Regulation Manual for the Logan Martin Reservoir (Logan Martin Manual).³² Chart No. 11 in the Logan Martin Manual shows the operating curve currently implemented by Alabama Power, which is the maximum elevation at which Alabama Power may maintain the reservoir during normal inflow (i.e., non-flood control)

³¹ Since 1965 the reservoir elevation has averaged no more than 6 to 12 inches below the operating curve throughout the year.

³² See Logan Martin Manual.

conditions. As long as the Logan Martin reservoir surface elevation is below the operating curve, Alabama Power may operate the Logan Martin development to “satisfy normal system load requirements.”³³

41. Once the reservoir levels reach the operating curve, Alabama Power must operate the development in accordance with the Corps’ Logan Martin Manual for flood control. Chart No. 12 of the Logan Martin Manual defines the basic regulation schedule for flood control, showing required operations and reservoir outflows for various pool elevations and inflow rates. In general, when the reservoir elevation is below the top of the operating curve, releases may be made through the powerhouse up to its hydraulic capacity. When the reservoir elevation is at the operating curve, powerhouse and spillway releases are to be used to evacuate the reservoir up to a total of 50,000 cfs. An alternate flow schedule is used to specify greater releases (up to 270,000 cfs) when the reservoir level is above the operating curve, and rising. However, releases from the dam above 80,000 cfs rarely occur (i.e., since 1965 releases of 80,000 cfs were recorded in three years).

4. Lay Development

42. Alabama Power operates the Lay development in run-of-river mode, with a normal full pool elevation at 396 feet. Daily fluctuations between 0.75 and 1 foot may occur due to operating constraints. Flows from the powerhouse and spill gates are passed directly into the Coosa River. Lay Lake has no flood storage, thereby limiting operations during floods to passing inflows through the powerhouse and/or 26 spill gates at the dam.

5. Mitchell Development

43. Alabama Power operates the Mitchell development in run-of-river mode, with a normal full pool elevation at 312 feet. Daily fluctuations less than 1 foot may occur due to operating constraints. Flows from the powerhouse and spill gates are passed directly into the Coosa River. Mitchell Lake has no flood storage, thereby limiting operations during floods to passing inflows through the powerhouse and/or 23 spill gates at the dam.

6. Jordan Development

44. Alabama Power operates the Jordan development in run-of-river mode, with a normal full pool elevation at 252 feet. Daily fluctuations less than 1 foot may occur due to operating constraints. Flows from the powerhouse and spill gates are passed directly

³³ *Id.*

into the Coosa River. Jordan Lake has no flood storage, thereby limiting operations during floods to passing inflows through the Jordan powerhouse, 35 spill gates at the dam, or into a canal leading to the Bouldin development.

45. Flow diverted from Jordan Lake to the Bouldin development bypasses Jordan dam and is returned to the Coosa River about 14.5 miles downstream from Jordan dam. Alabama Power currently provides minimum flow releases from the Jordan development for whitewater boating and aquatic enhancement in the Coosa River bypassed reach downstream from Jordan dam. These releases are provided through the turbines, or one or more of the 35 release gates at the dam. Alabama Power is required to release a continuous flow of at least 2,000 cfs from the Jordan dam from July 1 through March 31 to support the aquatic flora and fauna of the Coosa River, including the endangered tulotoma snail.³⁴ From April 1 through May 31, the minimum flow release is increased to 8,000 cfs between 9 a.m. and 3 p.m. (pulse flow) and 4,000 cfs the remainder of each day (base flow). The base flow and pulse flows are gradually reduced between June 1 and June 30 to ultimately return to the 2,000-cfs continuous minimum flow requirement by July 1.

46. In addition to the aquatic base flow and pulse flows released in the spring for fish, which also enhance whitewater boating conditions downstream from the Jordan dam, Alabama Power is also required to provide whitewater boating releases that vary between 4,000 and 8,000 cfs on weekends, and up to 10,000 cfs on holidays, during the summer months. The recreation flows may temporarily cease during extreme drought periods when Alabama Power's reservoirs on the Coosa River are 1 foot or more below the normal operating range, such as occurred during the summers of 2006 and 2007.

47. Specifically, the flow release requirements, as required by a 1997 Commission staff order and amended in 2001,³⁵ are:

³⁴ However, in November 2007, Commission staff issued a license amendment in response to drought conditions, authorizing Alabama Power to reduce (from 2,000 to 1,600 cfs) minimum flow releases from Jordan dam for a 90-day period beginning December 2. *Alabama Power Company*, 121 FERC ¶ 62,156 (2007).

³⁵ See *Alabama Power Company*, 79 FERC ¶ 62,182 (1997), *order amending min. flow release schedule*, 96 FERC ¶ 62,050 (2001) (approving shift in daily fish flow and recreation releases for April 1 through May 31, from the hours of 6:00 a.m. to 12:00 p.m. to the hours of 9:00 a.m. to 3:00 p.m.).

- From April 1 through May 31, Alabama Power releases continuous base flows of 4,000 cfs for 18 hours per day from 3 p.m. through 9 a.m. For the remaining 6 hours, Alabama Power should release an 8,000 cfs pulse flow from 9 a.m. through 3 p.m.
- Beginning June 1 through June 15, Alabama Power reduces the continuous 4,000 cfs base flow at a rate of 66.7 cfs per day, and the daily 8,000 cfs pulse flow at a rate of 133.3 cfs per day.
- From June 16 through June 30, Alabama Power ceases release of the daily pulse flow but continues to release the continuous base flow, reducing it 66.7 cfs per day.
- From July 1 through March 31, Alabama Power releases a continuous minimum base flow of 2,000 cfs, regardless of inflow.
- From June 16 through October 31, on weekends only, Alabama Power releases flows of 4,000 cfs, 6,000 cfs or 8,000 cfs continuously from 11 a.m. to 5 p.m. using the following schedule:

Weekend No.	Saturday	Sunday
1	4,000	6,000
2	6,000	8,000
3	8,000	4,000
4	4,000	6,000
5	6,000	8,000
6	8,000	4,000
7	4,000	6,000
8	6,000	8,000
9	8,000	4,000
10	4,000	6,000
11	6,000	8,000
12	8,000	4,000
13	4,000	6,000
14	6,000	8,000
15	8,000	4,000
16	4,000	6,000
17	6,000	8,000
18	8,000	4,000
19	4,000	6,000
20	6,000	8,000

- On one day during the Memorial Day and Labor Day weekend, Alabama Power releases up to 10,000 cfs continuously between 10 a.m. and 6 p.m.
- On July 4th Alabama Power releases up to 10,000 cfs continuously between 10 a.m. and 6 p.m. using the following schedule: if July 4th is on Tuesday, a Monday release would be required in addition to the required release on July 4th; if July 4th is on a Wednesday, the Monday release would be forfeited for the July 4th release; if July 4th is on a Thursday, the Monday release would be changed to Friday, July 5th to give a four day release; if July 4th is on a Saturday, Sunday or Monday, the normal recreational release schedule would be followed.
- A special release may be scheduled to accommodate a civic event during the period April 1 to June 15. The release would be from 6 a.m. to 5 p.m. at a release rate up to 10,000 cfs. The amount of release and number of days has been changed over the past few years. A 2004 civic event required a release for four days, one day each of 8,500 cfs from 9 a.m. to 3 p.m., 8,500 cfs from 9 a.m. to 5 p.m., 8,500 cfs from 7 a.m. to 5 p.m., and 8,500 cfs from 7 a.m. to 4 p.m.
- Flow releases shall be within a 5 percent flow-variation tolerance band of the release rate specified for each scheduled boating release day.
- All recreational releases are conditioned upon sufficient availability of inflow to support other project purposes. Recreational releases would be modified or terminated as follows:
 - For weekend releases, if insufficient water is available for a two day release but sufficient for a one day release then a one day release will be scheduled. Should it be required to reduce the number of days of release, first, Sunday will be deleted. If insufficient water is available for a one day scheduled release, the release will be canceled.
 - Recreational releases may be canceled when the Weiss, Neely Henry, and Logan Martin reservoirs are one foot below the normal operations guide curve.
 - Recreational releases may be modified (either lower flow or shorter duration) if dissolved oxygen (DO) in the releases during the event

would cause the DO level in the Jordan dam tailrace to fall below 4.0 milligrams per Liter (mg/L) with aeration systems operations.

7. **Bouldin Development**

48. Alabama Power operates the Bouldin development in run-of-river mode, with a normal full pool elevation at 252 feet. Daily fluctuations less than 1 foot may occur due to operating constraints. Flows from the upstream Jordan Lake are passed through a 3-mile-long power canal to the powerhouse, which is integral with the dam. Since there are no spill gates at the Bouldin dam, flows in excess of Bouldin's turbine capacity (28,800 cfs) are spilled at the Jordan dam. Discharge from the Bouldin powerhouse flows through a 5-mile long canal into the Coosa River.

G. **Navigation Flow Requirements**

49. The existing licenses do not quantify a navigation flow, but require Alabama Power to provide flows to support navigation, as specified by the Corps.³⁶ In accordance with an April 18, 1972 agreement with the Corps, Alabama Power operates its Jordan and Bouldin developments on the Coosa River and the Thurlow development of its Yates and Thurlow Project No. 2407 on the Tallapoosa River to provide a total continuous minimum 7-day-average release of not less than 4,640 cfs in the Alabama River,³⁷ as measured at the Montgomery flow gage.³⁸ The navigation release provides a 9-foot

³⁶ Standard Article 12 of the Mitchell and Jordan licenses and standard Article 18 of the Coosa Project license provide for navigation flows, as may be prescribed by the Corps in the interest of navigation.

³⁷ The 1972 agreement specifies a combined release of 4,640 cfs from the Coosa and Tallapoosa rivers. However, it does not specify releases for each individual basin. Nonetheless, based on a ratio of drainage areas for each basin (10,059 square miles for the Coosa River Basin and 4,680 square miles for the Tallapoosa River Basin), the Coosa River's portion of the navigation requirement would be 3,166 cfs (68 percent) and Tallapoosa River's portion would be 1,475 cfs (32 percent).

³⁸ The minimum navigation flow is based on the estimated 7Q10 flow (lowest 7-day average flow that occurs, on average, once every ten years) for the Alabama River in the Montgomery area. The Montgomery flow gage is about 10 miles downstream from the confluence of the Coosa and Tallapoosa rivers. Because there is little intervening flow, this gage approximates the combined releases from both river basins.

navigation channel and approximately 8,500-cfs flow downstream from the Claiborne Lock and Dam. In January 1980, Alabama Power agreed to provide at least 2,667 cfs during any consecutive 3-day period, eliminating periods of little or no flow and more evenly distributing the required 7-day total flow.

H. New Project Facilities and Project Boundary Changes

50. Alabama Power proposes no major construction or capacity-related construction at the project. However, as described below, Alabama Power proposes to: (1) install aeration systems at Weiss and Neely Henry and upgrade existing aeration systems at Logan Martin, Lay, and Mitchell developments, and continue to operate the aeration system at the Jordan development;³⁹ and (2) construct or improve various recreation amenities at the project's seven developments that include parking areas, fishing piers, docks, boat launches, campsites, and trails. Alabama Power also proposes to add 364 acres to the project boundary:⁴⁰ 235 acres for additional flood easements along Lay Lake to accommodate Alabama Power's proposed operational changes at the Logan Martin development and 129 acres (in two parcels) downstream from the Jordan development for recreation use. Alabama Power also proposes to remove 285.5 acres from the project boundary based on new survey information and to remove lands that are no longer needed for project purposes. This results in a net increase of 78.5 acres of land within the project boundary. Finally, as discussed above, although Alabama Power's relicense application proposed upgrading turbine units at its Lay, Bouldin, and Jordan developments,⁴¹ these upgrades were subsequently authorized under its existing license.⁴²

³⁹ The Bouldin development withdraws water from Jordan Lake.

⁴⁰ *See* EA at 193-94.

⁴¹ The scope of work includes turbine replacement, stator coil replacement, wicket gate system rehabilitation or replacement, gate stem bushing replacement, turbine and generator bearing refurbishment, and related component changes.

⁴² The turbine upgrades are expected to increase each turbine rating by 4 MW, as well as increase efficiency and annual generation. However, no change in the developments' installed capacity is expected, because the generator capacity in MW is smaller than the corresponding turbine capacity in MW. *See* EA at 35.

I. Proposed Project Operation and Environmental Measures

51. Alabama Power proposes to operate the project as described below, and implement environmental measures to protect and enhance water quality, fish and wildlife, recreation, and cultural resources.

1. Project Operation

52. At the Weiss development, Alabama Power proposes to modify the operating curve to: (1) raise the winter operating curve by 3 feet to elevation 561 feet from December 1 through March 1; and (2) extend the summer operating curve from August 31 to September 30. The purpose of these proposed changes is to: (1) ensure that the Weiss reservoir reaches its normal pool elevation early in the year; (2) ensure that minimum flows can be provided to the Weiss bypassed reach year-round, including during drought conditions; and (3) enhance recreation access and use of the Weiss reservoir.

53. Alabama Power proposes to continue operating the Neely Henry development according to the interim operating curve that has been in place since February 2001. The operating curve provides for a normal summer pool elevation of 508 feet and normal winter pool of 507 feet. Alabama Power also proposes to modify flood control procedures, to be consistent with the operating curve implemented in 2001.

54. For the Logan Martin development, Alabama Power proposes to modify the operating curve to: (1) raise the winter pool elevation by 2 feet, to 462 feet, from January 1 to April 14; (2) raise the pool level to attain a normal summer elevation of 465 feet by May 1 and maintain this elevation through September 30; and (3) begin lowering the reservoir level on October 1 to reach an elevation of 462 feet by December 1. The purpose of these proposed changes is to: (1) ensure that the Logan Martin reservoir reaches its normal pool elevation early in the year; and (2) enhance recreation access and use of the Logan Martin reservoir.

55. Alabama Power proposes to continue to operate the Lay, Mitchell, Jordan, and Bouldin developments in a run-of-river mode, as previously described, and to continue providing navigation flow releases from the Jordan development as established in the 1972 agreement with the Corps.

2. Environmental Measures

56. To protect and enhance aquatic habitat and water quality in the 20-mile-long Weiss bypassed reach, Alabama Power proposes to implement the Weiss Bypass Flow Adaptive Management Plan⁴³ to determine minimum flow requirements. Initially, Alabama Power will release a variable continuous minimum flow ranging from 4 to 9 percent of the flows occurring at the upstream Mayo's Bar USGS gage no. 02397000 (i.e., approximately 135 to 1,053 cfs), depending on the month of the year. Alabama Power will monitor biotic responses to the minimum flows through 2020 and, in consultation with resource agencies, adjust the minimum flow requirements, as needed.

57. To protect existing aquatic habitat, organisms, and recreational use in the Coosa River downstream of the project, Alabama Power proposes to maintain the existing aquatic enhancement flow releases and recreation flow releases from Jordan dam. Following completion of the authorized turbine upgrade at the Jordan development, Alabama Power proposes to consult with interested entities and assess the feasibility of replacing the existing recreational flow release of 4,000 cfs with releases ranging from 4,000 to 5,000 cfs.

58. To address minimum flow needs downstream from the Neely Henry, Logan Martin, Lay, and Mitchell developments, Alabama Power proposes to implement an adaptive management approach that includes: (1) assessing water quality conditions in the tailraces following implementation of DO enhancements; (2) assessing the status of mussels, snails, and fish in the tailwaters before and after implementing the DO enhancements; and (3) consulting with FWS and Alabama DCNR to identify measures that may improve the growth and survival of target species.

59. To enhance water quality in the Coosa River, Alabama Power proposes to meet state water quality standards of 4 mg/L of DO in the turbine discharges of each development. To protect the state's river basins in accordance with the goals of the Clean Water Act (CWA), Alabama Power proposes to continue to voluntarily participate in the Alabama Clean Water Partnership Project (Clean Water Partnership). Finally, as an education tool on toxins in the Coosa River Basin, Alabama Power proposes to make its final Toxins Issue Report available to the public.

⁴³ See Alabama Power July 28, 2005 license application at Volume 4, E10-Draft Adaptive Management Plan for the Coosa River-Weiss Bypass.

60. To minimize erosion and sedimentation, as well as improve water quality, at the project, Alabama Power proposes to update and implement its Erosion Repair and Monitoring Plan.

61. To promote the recovery of listed mussels and fish, as well as enhance their habitat in the Coosa River and other river systems in Alabama, Alabama Power proposes to provide funds to help establish and maintain: (1) the Alabama Aquatic Biodiversity Center (Aquatic Center), an aquatic research and culture facility for the propagation of aquatic species of concern within the state; and (2) the Fisheries Habitat Enhancement and Restoration Program (Fish Program).

62. To enhance crappie and blackbass spawning in the Logan Martin and Weiss reservoirs, Alabama Power proposes to continue restricting lake level fluctuations in the reservoirs in the spring by holding constant, or slightly increasing, the water levels in the Weiss and Logan Martin reservoirs for, at a minimum, a 14-day period in the spring.

63. To enhance and protect the wetland and upland wildlife habitats in the project area, Alabama Power proposes to implement the Coosa Wildlife Management Plan, which includes provisions for: (1) managing the project's shorelines for native vegetative communities and enhancing wildlife habitat value; (2) managing timber resources to improve wildlife habitat, including creating additional forest openings on project lands to provide foraging areas for wildlife; (3) managing lands around the Mitchell development for the benefit of the federally listed red-cockaded woodpecker; (4) protecting and monitoring bald eagle nesting areas; (5) establishing barrier-free public hunting areas; (6) developing a waterfowl refuge and/or waterfowl management area at the Weiss development; and (7) establishing and funding a Wildlife Habitat Enhancement and Restoration Program.⁴⁴

64. To improve management of wetlands, as well as rare, threatened, and endangered species at the project, Alabama Power proposes to: (1) incorporate the wetland database developed during relicensing into Alabama Power's geographic information system database used to administer its Shoreline Management Plan; (2) develop and implement a public education program on the value of wetlands; and (3) make available to state and federal agencies the Alabama Power wetland database to improve the agencies' review of proposed activities on lands classified as Sensitive Resources Lands.

⁴⁴ Under this program, Alabama Power would contribute money to the fund and Alabama DCNR would administer the funds for measures within the Coosa River Project and the Warrior River Project No. 2165 boundaries.

65. To enhance recreational opportunities, Alabama Power proposes to implement its Recreation Plan that includes provisions for operating and maintaining, or providing for the operation and maintenance of, recreation sites and improving those sites by installing fishing piers, developing trails, repairing an existing or installing new boat launches, and improving parking areas and primitive campsites. To enhance public safety at the project, Alabama Power proposes to: (1) periodically monitor the amount, location, and origin of woody debris on the project reservoirs and lakes; and (2) fund the Alabama Marine Police and implement a 2003 agreement with the Alabama Marine Police.

66. To protect sensitive habitats and the scenic quality at the project, Alabama Power proposes to implement its Shoreline Management Plan that includes: (1) shoreline management goals; (2) policies for activities that may affect shoreline management (e.g., dredging, bank stabilization); (3) a shoreline classification system; (4) public education and outreach measures to describe, promote, and recommend best management practices (BMP) to protect the shoreline; (5) shoreline permitting guidelines; and (6) a provision for periodically updating the Shoreline Management Plan. To protect native species and public health at the project, Alabama Power proposes, as part of its Shoreline Management Plan, to continue: (1) administering its Aquatic Plant Management and Mosquito Control Programs; and (2) cooperating with Alabama DCNR to control invasive species.

67. To protect cultural resources, Alabama Power proposes to implement the final Historic Properties Management Plan (HPMP) filed October 27, 2006, in accordance with the Programmatic Agreement (PA).

Summary Of License Requirements

68. As summarized below, the license, which authorizes a combined 960.9 MW of renewable energy, requires a number of measures to protect and enhance water quality, fish, wildlife, cultural, and recreation resources at the project.

69. This license requires, with some modifications, most measures proposed by Alabama Power to provide downstream flood control at the Weiss, Neely Henry, and Logan Martin developments; control shoreline erosion and reservoir siltation; improve DO levels below each development and monitor DO levels and biological responses to improved DO levels; release continuous seasonal minimum flows in the Weiss bypassed reach and below Jordan to enhance aquatic habitat and populations of listed mussels and snails; add gravel, brush piles, and other structures in project reservoirs to provide cover for fish; maintain and improve project recreation sites; provide whitewater boating flows below the Jordan development; modify operations and minimum flow releases during drought conditions to protect listed species and navigation needs below Jordan; improve

habitat for the federally listed red-cockaded woodpecker; establish barrier-free hunting areas; protect the shoreline and establish buffer zones to protect riparian habitats, wetlands, and listed species; and protect cultural resources. Modifications to some of these measures are included in the license to facilitate administration of the license, exclude requirements that generally would be outside of the license, and require specific measures as opposed to the establishment of funds (e.g., adding gravel and brush piles to project reservoir instead of providing funding to the state to implement habitat improvements).

70. This license authorizes Alabama Power to continue to operate the Neely Henry reservoir according to a modified operating curve authorized under a variance approved by the Corps and the Commission in 2001 (i.e., a normal winter pool elevation of 507 feet). This license, however, does not authorize Alabama Power's proposal to raise the winter pool elevations for the Weiss and Logan Martin developments because such change will hinder the Corps' flood control responsibilities at the developments. This license also requires staff's recommended *Project Operation and Flow Monitoring Plan* (Article 406) to demonstrate compliance with project operations.

Water Quality Certification

71. Under section 401(a)(1) of the CWA,⁴⁵ the Commission may not issue a license authorizing the construction or operation of a hydroelectric project unless the state water quality certifying agency either has issued water quality certification for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year. Section 401(d) of the CWA provides that the certification shall become a condition of any federal license that authorizes construction or operation of the project.⁴⁶

72. On July 2, 2004, Alabama Power applied to Alabama Department of Environmental Management (Alabama DEM) for 401 water quality certification. On July 1, 2005, Alabama DEM issued a certification for the Coosa River Project that includes seven discrete conditions at each of the project's seven developments, which are set forth in Appendix A of this order and incorporated into the license (*see* Ordering Paragraph D).

⁴⁵ 33 U.S.C. § 1341(a)(1) (2006).

⁴⁶ 33 U.S.C. § 1341(d) (2006).

73. The certification requires the following measures:

- (1) Operate each development, including turbine releases, to provide no less than 4 mg/L of DO at all times⁴⁷ at specified monitoring locations for each development.
- (2) Develop and implement measures to increase the DO downstream of the powerhouse discharges through structural and/or operational changes at the project within 18 months of licensing.
- (3) Install a tailrace monitor and collect DO and water temperature data at specific locations in the Weiss bypass reach and, during generation from May 1 through September 30, downstream from each powerhouse. Monitoring can be temporarily discontinued during flood events until tailrace elevations return to normal.
- (4) Commence monitoring within 18 months of the effective date of a new license if the effective date is within the prescribed monitoring period, or by the following May 1 if the effective date of the license is not within the prescribed monitoring period; and monitor for a period of 3 years.
- (5) Maintain and calibrate the monitoring equipment to assure proper operation.
- (6) Develop and submit DO and water temperature monitoring reports to the Alabama DEM and the Commission.
- (7) Assess the project's effects (by development) on Alabama's water quality standards and file the assessment with the Alabama DEM within 6 months following the end of the 3-year monitoring period; and develop and implement additional structural or operational measures if monitoring results do not show substantial compliance with state DO standards.

⁴⁷ Conservation Groups assert that the certification conditions require Alabama Power to maintain DO levels above 5.0 mg/L except when generating, and then the applicable standard that must be met in the discharge is 4.0 mg/L. *See* Conservation Groups July 8, 2010 Comments at 23, citing to Alabama Adm. Code §§ 335-6-10.09(2)(e)(4), (3)(c)(4), and (5)(e)(4). Conservation Groups are mistaken. The certification conditions are clear that Alabama Power must maintain no less than 4.0 mg/L of DO *at all times*, including during periods of non-generation.

The certification conditions also require Alabama Power to: (1) file, with Alabama DEM and the Commission by some unspecified date following the final year of monitoring, a final water quality report; and (2) implement structural and operational modifications at the project to ensure compliance with DO standards without prior Commission approval. To provide the Commission a means to administer compliance with license requirements, Article 408, *Water Quality Monitoring Plan*, requires Alabama Power to include in the monitoring plan a schedule for filing any reports and plans for continued monitoring and/or measures to improve DO with the Commission for review and approval. In addition, Article 407, *Dissolved Oxygen Enhancement Plan*, requires Alabama Power to provide additional details of its plan to enhance DO.

Coastal Zone Management Act

74. Under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA),⁴⁸ the Commission cannot issue a license for a project within or affecting a state's coastal zone unless the state CZMA agency concurs with the license applicant's certification of consistency with the state's coastal zone management program, or the agency's concurrence is conclusively presumed by its failure to act within six months of its receipt of the applicant's certification.

75. By letter of May 10, 2006, Alabama DEM notified Alabama Power that the project is neither within the Alabama coastal zone nor within a geographic area in which Alabama DEM would review licenses for consistency with the coastal zone management program. Therefore, no consistency certification is required.

Section 18 Fishway Prescription

76. Section 18 of the FPA⁴⁹ provides that the Commission shall require the construction, maintenance, and operation by a licensee of such fishways as may be prescribed by the Secretary of the Interior or the Secretary of Commerce, as appropriate.

77. By letter filed July 30, 2008, the Secretary of the Interior requested that the Commission reserve authority to prescribe fishways. Consistent with Commission policy, Article 409, *Reservation of Authority to Provide Fishways*, reserves the Commission's authority to require fishways that may be prescribed by Interior for the Coosa River Project.

⁴⁸ 16 U.S.C. § 1456(c)(3)(A) (2006).

⁴⁹ 16 U.S.C. § 811 (2006).

Threatened And Endangered Species

78. Section 7(a)(2) of the Endangered Species Act (ESA) of 1973⁵⁰ requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species, or result in the destruction or adverse modification of their designated critical habitat.

79. There are existing populations of 14 federally listed species within the Coosa River Project area. These species include five plants: (1) the endangered Alabama leather flower, (2) endangered harperella, (3) endangered green pitcher plant, (4) threatened Mohr's Barbaras buttons, and (5) threatened Kral's waterplantain. There is one listed bird, the endangered red-cockaded woodpecker, and one listed fish, the threatened blue shiner. There are two listed mussels: (1) endangered southern clubshell, and (2) threatened finelined pocketbook. There are five listed snails: (1) endangered interrupted rocksnail, (2) endangered rough hornsnail, (3) endangered tulotoma snail, (4) endangered cylindrical lioplax, and (5) threatened painted rocksnail.

80. In addition, there are 12 designated critical habitat units in the project area. Two units (IR1 and IR3 on the mainstem of the Coosa in the Weiss bypass and Jordan tailrace, respectively) are critical habitat for the interrupted rocksnail, 2 units (RH1 and RH2 in the Jordan tailrace and Yellowleaf Creek – Lay Lake, respectively) are critical habitat for the rough hornsnail, 2 units (GP2 and GP3 in the Weiss bypass and Hatchet Creek-Mitchell Lake, respectively) are critical habitat for the Georgia pigtoe mussel, and 6 units (Units 18, 19, 21, 23, 24, and 26) are for 10 listed mussel species.⁵¹

81. FWS also plans to reintroduce 20 threatened and endangered species to habitats in the project area in the foreseeable future, in accordance with the reintroduction plan of the Mobile River Basin Mollusk Restoration Committee.⁵²

⁵⁰ 16 U.S.C. § 1536(a) (2006).

⁵¹ In addition to critical habitat for the finelined pocketbook and southern clubshell mussels, which are found in the project area, the six units are designated critical habitat for the following listed mussels, which are not present in the project area: southern acornshell, upland combshell, Alabama moccasinshell, Coosa moccasinshell, southern pigtoe, ovate clubshell, and triangular kidneyshell.

⁵² The species are the blue shiner, amber darter, goldline darter, painted rocksnail, interrupted rocksnail, rough hornsnail, cylindrical lioplax, lacy elimia, flat pebblesnail,

82. On January 15, 2010, Commission staff sent its Biological Assessment (BA)⁵³ to FWS and requested formal consultation on certain listed species. On January 24, 2011, Alabama Power filed additional information regarding some listed mussel species.⁵⁴ On November 4, 2011, staff issued a revised BA. The revised BA found that relicensing the proposed project, with staff's recommended measures, would not likely adversely affect the five listed plants (Alabama leatherflower, Mohr's Barbaras buttons, harperella, Kral's waterplantain, and green pitcher plant) and mussel critical habitat units 19, 21, 23, and 24. Staff asked for FWS concurrence with these findings.

83. The revised BA also found that relicensing the proposed project, with staff's recommended measures would likely adversely affect the following listed species and designated critical habitat, and initiated formal consultation regarding these species: (1) the red-cockaded woodpecker; (2) the two listed mussel species (finelined pocketbook and southern clubshell); (3) four of the five listed snail species (interrupted rocksnail, rough hornsnail, tulotoma snail, and painted rocksnail); (4) mussel critical habitat Units 18 and 26, interrupted rocksnail units IR1 and IR3, rough hornsnail units RH1 and RH2, and Georgia pigtoe units GP2 and GP3; and (5) the 20 listed species to be reintroduced in the project area.⁵⁵

84. FWS, in a letter filed December 8, 2011, acknowledged the initiation of formal consultation with respect to the species and designated critical habitat listed in the paragraph above, as well as for the blue shiner fish and the cylindrical lioplax snail.⁵⁶ FWS also concurred with staff's determination that the Alabama leatherflower, Mohr's

finelined pocketbook, Alabama moccasinshell, Coosa moccasinshell, southern clubshell, southern pigtoe, ovate clubshell, southern combshell, Georgia pigtoe, heavy pigtoe, Triangular kidneyshell, and inflated heelsplitter. *See* Attachment 6 of Alabama Power's addendum to its draft BA, filed January 24, 2011.

⁵³ The EA served as staff's BA.

⁵⁴ *See* Alabama Power's January 24, 2011 addendum to the draft BA it had submitted with its relicense application.

⁵⁵ *See supra* note 52.

⁵⁶ The revised BA by mistake had omitted findings for these two species that relicensing the project would not likely adversely affect the existing population of the species.

Barbaras buttons, harperella, Kral's waterplantain, green pitcher plant, and mussel critical habitat units 19, 21, 23, and 24 are not likely to be adversely affected.

85. On June 10, 2012, FWS filed its biological opinion (BO), which concluded that relicensing the project is not likely to jeopardize the continued existence of any species, nor is it likely to destroy or adversely modify any critical habitat.

86. The BO includes an incidental take statement with 11 reasonable and prudent measures (RPM) in five action areas to minimize take of mussels, snails, blue shiner fish, and the red-cockaded woodpecker, along with 16 terms and conditions to implement the measures. The reasonable and prudent measures are meant to minimize incidental take of the species covered by the BO that would result from: (1) poor water quality and habitat fragmentation; (2) shoreline management practices; (3) land management practices and timber harvesting activities; (4) flow releases downstream from the Bouldin and Jordan developments and lake level management during drought conditions; and (5) stranding associated with the biannual drawdown of Lay Lake.

87. The terms and conditions require Alabama Power to: (1) implement the water quality monitoring plan included in the Weiss Bypass Flow Adaptive Management Plan; (2) implement the DO measures required by the certification for the Logan Martin development and revise the Logan Martin adaptive management plan⁵⁷ to ensure adequate DO is maintained during non-generation periods; (3) participate in species survival, habitat, and water quality studies associated with reintroduction efforts; (4) designate shoreline areas that are adjacent to, or could affect, listed species or critical habitat as Sensitive Resource Lands under the Shoreline Management Plan's classification system; (5) promote the use of BMPs and proper use of herbicides; (6) conduct baseline mussel, snail, and fish surveys in the lower Big Canoe Creek (Neely Henry development), lower Choccolocco Creek (Logan Martin development), and lower Hatchet and Weogufka creeks (Mitchell development); (7) implement the red-cockaded woodpecker management plan proposed by the licensee;⁵⁸ (8) apply appropriate BMPs and streamside management zones in lower Hatchett and Weogufka creeks during timber management activities; and (9) implement the Coosa River Project portion of Alabama-ACT Drought Response Operations Proposal (ADROP), including (i) flow reductions

⁵⁷ See Attachment 5 to Alabama Power's January 24, 2011 Addendum to the Coosa River Project Biological Assessment.

⁵⁸ See Alabama Power's July 28, 2005 license application, Volume 4, E6, Section 6-Wildlife Management Plan.

(from spring to summer flow requirements) of no greater than 67 cfs per day and water quality monitoring, (ii) use of excess water in the Jordan Lake to maintain wetted width of the Coosa River downstream, (iii) studies of exposed habitat and population data for rough hornsnail in Yellowleaf Creek, (iv) maintenance of a drawdown rate of less than 12 inches per day, (v) salvage and translocation of exposed mussels and snails during lake draw down events; and (vi) surveying of shoreline areas for the tulotoma snail and rough hornsnail prior to and after drawdowns, and estimate the amount of exposed habitat.

88. The RPMs and their implementing incidental take terms and conditions are included in Appendix B and the terms and conditions are made part of the license by Ordering Paragraph E. In addition, in order to monitor compliance with, and facilitate administration of, the terms and conditions, Article 417 requires the licensee to file a *Threatened and Endangered Species Protection Plan*, for Commission approval, detailing how it will implement the terms and conditions of the BO.

89. In addition to the incidental take conditions, FWS recommends four conservation measures to help protect, and promote the recovery of, listed species and the bald eagle.⁵⁹ These measures would require Alabama Power to: (1) coordinate with the resource agencies to conduct surveys of rough hornsnail in the Coosa River downstream from the Jordan dam within 36 months of license issuance; (2) classify shoreline habitats in the areas surrounding the Mohr's Barbaras buttons and green pitcher plant locations as Sensitive Resource Lands; (3) coordinate with the resource agencies to identify a modified schedule for conducting bald eagle surveys;⁶⁰ and (4) include with the Shoreline

⁵⁹ Conservation measures are discretionary recommendations. The regulations implementing the ESA define conservation recommendations as "suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information." See 50 C.F.R. § 402.02 (2010).

⁶⁰ The Coosa Wildlife Management Plan was developed prior to the delisting of the bald eagle, and includes annual surveys over a two-week period to identify and protect bald eagle nests. Although the bald eagle is no longer a listed species, it is still protected under the Bald and Golden Eagle Protection Act. FWS states that two weeks is likely not sufficient to complete surveys over all of the developments and recommends Alabama Power work with FWS and Alabama DCNR to develop a suitable survey schedule.

Management Plan an evaluation matrix ⁶¹ to expedite Alabama Power's shoreline permit application process.

90. Because the proposed measures would further support the protection and recovery of listed and protected species at the project at little cost, this license includes FWS' recommended measures, except for the rough hornsnail surveys downstream from the Jordan Dam. Article 414 requires Alabama Power to reclassify shoreline habitats surrounding the Mohr's Barbaras buttons and green pitcher plant locations as Sensitive Resources Lands and modify the Shoreline Management Plan to include permit restrictions. Article 412 requires Alabama Power to work with FWS and Alabama DCNR to establish a bald eagle survey schedule to allow Alabama Power sufficient time to complete the required surveys, and thus protect the bald eagle and its habitat on project lands from activities associated with shoreline development, including Alabama Power's proposed recreational improvements.

91. However, this license does not require Alabama Power to conduct a survey of rough hornsnail distribution in the Coosa River downstream from the Jordan dam. While such surveys would provide quantified information about the distribution of rough hornsnail in the downstream Coosa River, this information is not needed because there is critical habitat for the species in the Jordan tailrace, and the species is known to occur in the Coosa River downstream from the Jordan dam. Moreover, this license includes no measures that would adversely affect the existing environment in the Coosa River downstream from the Jordan Dam. Alabama Power, however, is free to work with FWS and Alabama DCNR to conduct the requested survey outside of the license.

92. On November 9, 2012, Alabama Rivers filed comments with the Commission on FWS' BO, reiterating many of the concerns it raised on the draft BO, including its assertions that the BO's baseline is flawed,⁶² its conclusions are not supported by the

⁶¹ The evaluation matrix would assist Alabama Power in determining (1) whether certain shoreline activities (e.g., dredging, construction of boat docks and boat ramps, and bank stabilization) within the Sensitive Resources Lands classification might affect a federally listed species, and (2) if so, appropriate restrictions to place on a permit authorizing a non-project use.

⁶² Alabama Rivers also asserts that FWS inappropriately postponed determination of a baseline until after the license is issued, thus calling into question the BO's incidental take estimates. Alabama Rivers cites, as an example, the BO's determination that the fish, mussel, and snail surveys to be conducted in various project area waters "will

record, and it includes insufficient quantitative analyses of existing and alternative minimum flows.⁶³

93. To support its claims, Alabama Rivers filed what it deems new information from experts in the form of two declarations and three studies, which it claims challenges the BO's conclusion that post-action monitoring will provide an accurate understanding of baseline populations.⁶⁴ Alabama Rivers asks that the Commission not issue a license for the project before considering its newly submitted evidence.⁶⁵

94. As relevant here, the ESA requires that federal agencies consult, formally or informally, with FWS and obtain a BO on whether the proposed action is likely to result in a violation of the ESA when the agency determines that a proposed action may affect a threatened and endangered species.⁶⁶ As discussed above, staff consulted with FWS and obtained a BO finding that the proposed relicensing of the Coosa River Project would not likely jeopardize the continued existence of any listed species, nor adversely affect or destroy their critical habitat. FWS determined that incidental take of several species may

establish a baseline and be used to insure no further decline" in mussels, fish, snails, or habitat. Alabama Rivers' November 9, 2012 Comments at 5.

⁶³ On April 18, 2012, Alabama Rivers also filed comments with FWS, asserting that the draft BO's conclusions were not supported by the record and alleging that it included insufficient quantitative analyses of existing and alternative minimum flows, as well as an improper definition of baseline.

⁶⁴ Alabama Rivers' November 9, 2012 Comments at 2 (citing attached "expert declaration" from Dr. Robert Bringolf and Dr. James Stoeckel; three studies by Johnson, *et al.* (2001), Rypel, *et al.* (2009), and Peterson, *et al.* (2011); and "discussion of updated [Environmental Protection Agency] recommendations regarding appropriate dissolved oxygen" levels).

⁶⁵ On December 19, 2012, Alabama Power filed a response to Alabama Rivers' comments, stating that the BO and its accompanying Incidental Take Statement adequately address Alabama Rivers' concerns. Alabama Power added that Alabama Rivers has not pointed to new information not already considered by FWS or demonstrated any reason why the Commission's reliance on the BO could be considered arbitrary and capricious. Alabama Power's December 19, 2012 Comments at 2-3.

⁶⁶ *See* 50 C.F.R. § 402.01(b) (2012).

occur as a result of project relicensing, and pursuant to ESA section 7(b),⁶⁷ provided an incidental take statement as part of its BO. The statement includes terms and conditions to implement measures to avoid or minimize incidental take.

95. In arguing that staff relied unreasonably on FWS' BO, Alabama Rivers fails to recognize the substantive and procedural responsibilities that ESA section 7(a)(2)⁶⁸ imposes and the interdependence of federal agencies acting under that section. Although a federal agency is required to ensure that its action will not jeopardize the continued existence of listed species or destroy or modify their designated critical habitat, it must do so in consultation with the appropriate agency, in this case, FWS. Because FWS is charged with implementing the ESA, it is the recognized expert with regard to matters of listed species and their habitat.⁶⁹

96. In reviewing whether the Commission may appropriately rely on a BO, the relevant inquiry is not whether the BO is flawed, but rather whether the Commission's reliance was arbitrary and capricious.⁷⁰ Therefore, an action agency may rely on a BO if a challenging party can point to no new information that the consulting agency did not take into account that challenges the BO's conclusions.

97. We find no basis for Alabama Rivers' challenge. As discussed in more detail below, the information it cites is not sufficiently relevant to the Coosa River Project relicensing to warrant questioning the BO's conclusions. Specifically, the three articles consider different species that are not only located in different riverine systems, but are also located in a different state (Georgia). With respect to the two declarations, while they may disagree with some of FWS' conclusions in the BO, an agency must have discretion to rely on the reasonable opinions of its own qualified experts.⁷¹

⁶⁷ 16 U.S.C. § 1536(a)(4) (2006).

⁶⁸ *Id.* § 1536(a)(2).

⁶⁹ *See City of Tacoma, Washington v. FERC*, 460 F.3d 53, 75 (D.C. Cir. 2006) (finding that expert agencies such as FWS have greater knowledge about the conditions that may threaten listed species and are best able to make factual determinations about appropriate measures to protect the species).

⁷⁰ *Id.*

⁷¹ *See Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 378 (1989).

98. Moreover, the studies Alabama Rivers provides are not new; the three studies are dated 2001, 2009, and 2011. Although the final BO was issued in June 2012, Alabama Rivers does not explain why it waited five months—until November 2012—to submit the three studies and expert declarations for FWS to consider in developing its final BO.

99. Accordingly, this proceeding is not the appropriate venue to address Alabama Rivers' assertion that the BO violates ESA.⁷² Alabama Rivers filed extensive comments with the FWS on the draft BO, and is essentially rearguing factual issues that FWS had before it in preparing the final BO. The Commission will not substitute its judgment for that of FWS, the agency that Congress has determined in the ESA should be responsible for providing its expert opinion regarding whether relicensing the Coosa River Project is likely to jeopardize the continued existence of the listed species, or to destroy or adversely modify their critical habitat.

100. Here, the BO reviewed: (1) the existing status of 23 species and 12 critical habitat units; (2) the environmental baseline for the action area; (3) the effects of the proposed relicensing of the Coosa River Project; and (4) the cumulative effects. Based on the analysis, FWS concluded that the relicensing of the project, as proposed and with staff's additional environmental measures, is not likely to jeopardize the continued existence of any species, nor is it likely to destroy or adversely modify any critical habitat.⁷³ Accordingly, there is nothing in the record to suggest that our reliance on the BO is arbitrary and capricious.⁷⁴

101. Alabama Rivers' contention that the Commission should not rely on the BO because the BO in turn relies on post-license studies and monitoring, is similarly misplaced. As noted earlier, the FPA does not require that the Commission have perfect

⁷² Moreover, the Commission does not have the authority to render a decision on the validity of the BO. When a BO is prepared in the course of a Commission licensing proceeding, the only means of challenging its substantive validity is on judicial review of the Commission's decision in the court of appeals. *See City of Tacoma, Washington v. FERC*, 460 F.3d 53, 75 (D.C. Cir. 2006).

⁷³ *See* BO at 89-90.

⁷⁴ Moreover, it is appropriate for the Commission to show reasoned deference to FWS with regard to the interpretation of its rules and regulations. *See Pacific Gas and Electric Company*, 107 FERC ¶ 61,232, at P21 (2004).

information before taking a licensing action or that all environmental concerns be definitively resolved before issuing a license. This license includes extensive monitoring conditions, and the opportunity to modify the license as needed to address any new resource issues that may arise. Therefore, if the post-licensing studies and plans indicate that the take estimates in the incidental take statement are not sufficient, the Commission may reinitiate consultation and adjust the license terms to address these issues.

National Historic Preservation Act

102. Under section 106 of the National Historic Preservation Act (NHPA)⁷⁵ and its implementing regulations,⁷⁶ federal agencies must take into account the effect of any proposed undertaking on properties listed or eligible for listing in the National Register of Historic Places (defined as historic properties) and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking. This generally requires the Commission to consult with the State Historic Preservation Officer (SHPO) to determine whether and how a proposed action may affect historic properties, and to seek ways to avoid or minimize any adverse effects.

103. To satisfy these responsibilities, the Commission executed a Programmatic Agreement (PA) with the Alabama SHPO and the Georgia SHPO and invited Alabama Power, the Chickasaw Nation, the Mississippi Band of Choctaw Indians, the Muscogee (Creek) Nation of Oklahoma, the Poarch Band of Creek Indians, and the Bureau of Indian Affairs (BIA) to concur with the stipulations of the PA. Alabama Power and the BIA concurred. The PA requires the licensee to implement an HPMP, filed on October 27, 2006, for the term of any new license issued for this project. Execution of the PA demonstrates the Commission's compliance with section 106 of the NHPA. Article 418 requires the licensee to implement the PA and an Historic Properties Management Plan.

Recommendations Of Federal And State Fish And Wildlife Agencies Pursuant To Section 10(j) Of The FPA

104. Section 10(j)(1) of the FPA⁷⁷ requires the Commission, when issuing a license, to include conditions based on recommendations submitted by federal and state fish and

⁷⁵ 16 U.S.C. § 470 *et seq.* (2006).

⁷⁶ 36 C.F.R. Part 800 (2012).

⁷⁷ 16 U.S.C. § 803(j)(1) (2006).

wildlife agencies pursuant to the Fish and Wildlife Coordination Act,⁷⁸ to “adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)” affected by the project.

105. In response to the June 6, 2008 public notice that solicited comments, final recommendations, terms and conditions, and prescriptions, FWS filed a total of six recommendations under section 10(j).⁷⁹ Four recommendations were determined to be outside the scope of section 10(j) and are discussed in the next section. The license includes conditions consistent with the two remaining recommendations that are within the scope of section 10(j): (1) implement the Weiss Bypass Flow Adaptive Management Plan, including the plan’s flow regime (Article 404); and (2) require that all waters in each development’s tailrace comply with Alabama’s standard of no less than 4.0 mg/L at all times (Article 407).

106. Alabama DCNR did not submit any recommendations under FPA section 10(j).⁸⁰

Section 10(a)(1) Of The FPA

107. Section 10(a)(1) of the FPA⁸¹ requires that any project for which the Commission issues a license be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce; for the improvement and utilization of waterpower development; for the adequate protection, mitigation, and enhancement of fish and wildlife; and for other beneficial public uses, including irrigation, flood control, water supply, recreation, and other purposes.

⁷⁸ 16 U.S.C. §§ 661 *et seq.* (2006).

⁷⁹ *See* FWS’ filing of July 30, 2008. FWS included an additional recommendation under section 10(j) in which it encouraged the Commission to consider the cumulative downstream and upstream effects of the Coosa River Project operation on aquatic habitats and listed species. However, this is not a proper section 10(j) recommendation because it is not a request for measures to be included in the license. In any event, the EA includes a cumulative effects analysis which addresses this issue, and which was considered in developing the license conditions. *See* EA at 104, 135-36.

⁸⁰ *See* Alabama DCNR’s filing of July 31, 2008.

⁸¹ 16 U.S.C. § 803(a)(1) (2006).

A. FWS Recommendations

108. FWS made four recommendations under section 10(j) that are not specific measures to protect, mitigate damages to, or enhance fish and wildlife, or have no relationship to project effects. Consequently, these recommendations are not considered under section 10(j) of the FPA. Instead, these recommendations are considered under the broad public-interest standard of section 10(a)(1).⁸²

109. FWS recommends that Alabama Power re-evaluate the flow needs downstream from the Neely Henry, Logan Martin, Lay, and Mitchell developments (through adaptive management plans) following the installation of aeration enhancements. This recommendation is accommodated by the water quality certification requirements, and in Article 408, *Water Quality Monitoring Plan*. The plan requires Alabama Power to maintain DO levels of no less than 4.0 mg/L through additional structural and operational requirements (e.g., flow releases), if needed.⁸³

110. FWS recommends, and Alabama Power proposes, to provide funding, through a Culture Facility Fund managed by Alabama Power towards the establishment of the Aquatic Center.⁸⁴ The purpose of the Aquatic Center would be to propagate threatened and endangered species and other aquatic species of concern throughout Alabama.

111. As discussed in the EA,⁸⁵ the Aquatic Center may potentially produce valuable information, through research, that could aid in the enhancement and restoration of threatened and endangered mussels and snails in the Coosa River and elsewhere in Alabama. However, we find that the recommended measure is too general to effectively implement at the Coosa River Project. As the Commission has previously explained, we

⁸² 16 U.S.C. § 803 (a)(1) (2006).

⁸³ Flow releases from the developments may be one of the operational measures considered if the aeration systems do not prove sufficient for attaining state standards for DO.

⁸⁴ Alabama Power would contribute \$2.8 million to the Culture Facility Fund over a 16-year period, beginning after licenses are issued for the Coosa River and Warrior River projects. The funds would be used to reimburse the costs associated with material, labor, equipment, office supplies, matching funds for grants, and subcontracting services for planning, constructing, managing, operating, and maintaining the Aquatic Center.

⁸⁵ *See* EA at 103.

prefer to require a licensee to undertake specific measures to resolve project effects, especially in cases where it is not clear to what extent the funds will be used for activities related to the project, as is the case here.⁸⁶ Because there is no assurance that the resources affected by the project would benefit from the Culture Facility Fund and Aquatic Center, staff did not recommend, and we do not adopt, the measure.⁸⁷ However, Alabama Power may support the Aquatic Center through funding outside of its license.

112. The FWS recommends that Alabama Power consult with it regarding any proposed permitting under the Shoreline Management Plan, particularly with respect to lands designated as Sensitive Resources Lands, and that the plan be revised periodically to reflect new information on listed species. As discussed later in this order, Article 414, *Shoreline Management Plan*, requires such consultation and periodic revisions.

113. The FWS recommends that the Commission include the relevant portions of the ADROP in the license. As discussed elsewhere in this order, the ADROP, as it relates to the Coosa River Project, is included as a condition of this license (Article 403, *Drought Management*).

B. Project Operation and Reservoir Elevations

114. Alabama Power proposes to modify the operating curves for the Weiss and Logan Martin reservoirs by increasing the winter pool levels and extending the summer pool season up to 30 days. Although the modifications would enhance recreation access, extend the summer recreation season, and help ensure refilling of the reservoirs to summer levels, it would also reduce the dedicated flood storage for the reservoirs.⁸⁸ The Corps has flood control responsibilities on the Coosa River within the Alabama-Coosa-Tallapoosa (ACT) River Basin and has established the maximum elevations of the reservoirs through operating curves. Thus, before the Commission may authorize changing the operating curves and raising these elevations, Alabama Power must first

⁸⁶ See *Policy Statement on Hydropower Licensing Settlements*, 116 FERC ¶ 61,270 (2006) and *Portland General Electric Company and Confederated Tribes of the Warm Springs Reservation of Oregon*, 111 FERC ¶ 61,450 (2005).

⁸⁷ See EA at 249.

⁸⁸ See EA at 236.

obtain approval from the Corps.⁸⁹ Accordingly, staff recommended, and this license requires, that Alabama Power continue to operate the Weiss and Logan Martin developments under the existing operating curves and pool elevations, as defined in the Corps' 2004 Reservoir Regulation Manuals for the two developments.⁹⁰ Articles 401a, *Weiss Reservoir Water Level Management*, and 401c, *Logan Martin Reservoir Water Level Management*, require the operating curves established in the Corps' 2004 operating manuals. Should the Corps revise its operating manuals in the future to permit a change in winter pool levels, Alabama Power may, at that time, file a request to amend its license.

115. Alabama Power proposes to continue to operate the Neely Henry reservoir according to a modified operating curve under a variance approved by the Corps and the Commission in 2001 (i.e., a normal summer pool elevation of 508 feet and normal winter pool elevation of 507 feet). In the EA,⁹¹ staff concluded the modification to the operating curve would have a mostly beneficial effect on aquatic, wetland, and recreation resources. Nonetheless, staff did not recommend such changes because changes to the operating curve would require Corps approval.

116. In comments on the final EA, the Corps stated that it did not object to continued operation of the Neely Henry reservoir with the revised higher winter pool, deferring to the Commission whether to include the curve modifications in the new license, or to continue the operation under a variance.⁹² The Atlanta Commission, on the other hand, recommended that Alabama Power operate the Neely Henry development under the pre-

⁸⁹ 33 C.F.R. § 208.11 (Engineering Regulation 1110-2-241) (2012); and Pub.L. No. 83-436.

⁹⁰ *See* EA at 235-36.

⁹¹ *Id.*

⁹² *See* U.S. Army Corps of Engineers' filing of November 3, 2010 responding to staff's recommendation in the EA that the Neely Henry development operate under the pre-variance operating curve. Other comments on the draft EA also expressed support for continuing the higher reservoir elevations in the new license: Neely Henry Lake Association; Logan Martin Association; William J. Copeland; Rainbow City, Alabama; the City of Gadsden, Alabama; Alabama Power; the Honorable Blaine Galliher, State of Alabama House of Representatives; Congressman Robert B. Aderholt; and Senator Richard Shelby.

variance operating curve (i.e., winter pool elevation 505 feet) until the Corps updates its operating manual.⁹³

117. Given the Corps' approval of the operating curve modifications and the benefits to environmental resources, we are including in the license Article 401b, *Neely Henry Reservoir Water Level Management*, which requires Alabama Power to continue operating under the operating curve as modified and approved in 2001.

118. Alabama Power proposes to modify the regulation schedules for flood control for the Weiss, Neely Henry, and Logan Martin reservoirs to reflect its proposed changes in the operating curves for these developments. As discussed above, the Corps has flood control responsibilities on the Coosa River within the ACT River Basin. Thus, for these reservoirs the Corps, not the Commission, has authority to specify the flood regulation schedules and approve any changes in the flood regulation schedules. Article 402, *Flood Control Operations at Weiss, Neely Henry, and Logan Martin Developments*, directs the licensee to operate the Weiss, Neely Henry, and Logan Martin developments for flood control as specified in the Corps Reservoir Regulation Manual for each development. Since the Neely Henry Reservoir Regulation Manual has not been updated since 1979, Article 402 of the license also requires Alabama Power to consult with the Corps and file a plan with the Commission to update the flood control procedures for the Neely Henry development consistent with the operating curve required in Article 401(b), *Neely Henry Reservoir Water Level Management*.

119. Alabama Power proposes to continue to operate the Lay, Mitchell, Jordan, and Bouldin developments in a run-of-river mode. Water level fluctuations of less than 1 foot below the normal full pool for each lake would continue as they have under the prior licenses. We agree, and include Articles 401d-401g, *Lay, Mitchell, Jordan, and Bouldin Reservoirs Water Level Management*, in the license. These articles require Alabama Power to: (1) operate the Lay, Mitchell, Jordan, and Bouldin developments in run-of-river mode; and (2) maintain the water surface elevations within 1 foot below the normal full pool elevation for each reservoir, except during droughts or emergency situations. These operating requirements would continue to provide adequate protection (1) for water quality, aquatic biota, and aquatic habitat by minimizing fluctuations of water surface levels both upstream and downstream of the developments; and (2) for fish and other aquatic organisms that rely on near-shore habitat for feeding, spawning, and cover, as well as for aquatic vegetation near the shoreline.

⁹³ See Lewis B. Jones, King & Spalding LLP, on behalf of the Atlanta Regional Commission, filing of November 22, 2010.

C. Flow Releases from Project Developments

1. Weiss Development

a. Bypass Flow Adaptive Management Plan

120. The Weiss bypassed reach: (1) has no minimum flow requirement under the existing license; (2) is the only stretch of river in the project area upstream of the Jordan dam that has a significant reach not subject to a backwater effect;⁹⁴ (3) is federally designated as critical habitat for eight species of mussels; and (4) serves as habitat for 46 species of fish and 19 species of mussels, including one federally endangered and one threatened mussel species. Alabama Power proposes to implement an adaptive management plan for establishing a minimum flow regime to maintain aquatic habitat in the bypassed reach.

121. Alabama Power filed a *Draft Adaptive Management Plan for the Coosa River-Weiss Bypass* with the license application that defines goals and objectives, initial minimum flows for the bypassed reach, water quality and biological monitoring methods and collection sites, monitoring timelines, and an implementation schedule. Under the proposed adaptive management approach, which state and federal fish and wildlife agencies agreed to as part of a Weiss Bypass Working Group (Weiss Bypass Group), Alabama Power would release specific minimum flows then monitor the response of the aquatic biota, including reintroduced snails and mussels, to the minimum flows. The general goal, as established by the Weiss Bypass Group, is to meet Alabama water quality standards and provide flows to support the aquatic biota through all life stages. The goal for fish is to mimic an unregulated flow regime, as well as to improve habitat to support, including the recruitment, augmentation, and reintroduction of, native fauna. The goal for invertebrate fauna, including mussels, is the same, with the addition of protecting and enhancing federally protected species. Flows would be modified if the biotic response does not achieve resource goals.

⁹⁴ The Weiss bypassed reach is 20 miles long. The upper 5.5 miles receives only leakage from the dam; the lower 14.5 miles receives flow from Terrapin Creek. Between 9 (in winter months) and 12 (in summer months) miles of the lower bypassed reach is subject to backwater effects from the downstream Neely Henry reservoir and from the operational discharges from the Weiss powerhouse, depending on operating conditions and season.

122. Alabama Power proposes initially to release a continuous minimum flow, as identified by the Weiss Bypass Group, that ranges from 4 to 9 percent of the flows (135 to 1,053 cfs based on average monthly flows) occurring at the upstream Mayo's Bar USGS gage no. 02397000, depending on the month of the year. There would be an adjustment of the flow twice per week based on the actual flow occurring at the Mayo's Bar gage. Alabama Power would evaluate the water quality and biotic responses to the initial flow releases for 13 years, after which time it would, in consultation with the Weiss Bypass steering committee,⁹⁵ recommend any changes to the flows that may be needed to achieve resource goals. The draft plan, however, did not define the decision process for adjusting the flow releases, but rather only indicated that it would be developed in consultation with the Weiss Bypass steering committee.

123. Staff found that the proposed minimum flows would improve invertebrate and fish communities, and the aquatic habitats on which they rely, relative to existing conditions.⁹⁶ Staff also found that the goals and objectives, sampling methods, and collaborative approach to be a reasonable means to evaluate the effectiveness of the flows. However, before the plan can be approved, the decision process, as well as the criteria for determining whether the flows should be adjusted, still needs to be defined. Article 404 requires Alabama Power to file a final plan that contains these elements, as well as an updated implementation schedule.

124. Alabama Rivers asserts that it "repeatedly requested" the Commission require Alabama Power to provide additional information on flows, including water balance modeling and a flow study using the Instream Flow Incremental Methodology (IFIM). Alabama Rivers stated that without such data, there would be an inadequate basis for the environmental analysis and licensing decision.⁹⁷

⁹⁵ The steering committee would be comprised of representative from Alabama Power, Alabama DCNR, FWS, Alabama Rivers Alliance, and the Weiss Lake Improvement Association.

⁹⁶ *See* EA at 93-96.

⁹⁷ Alabama Rivers asserts (July 8, 2010 Comments at 10) that the statement in the EA that Alabama Power and the stakeholders generally agree to Alabama Power's adaptive management approach to establishing minimum flows in the Weiss bypassed reach is incorrect. The EA does not say that the stakeholders agreed to Alabama Power's plan, but rather that stakeholders generally agreed to "an" adaptive management approach. *See* EA at 93 and 225.

125. With regard to the methods used by Alabama Power to assess instream flow needs at the Coosa River Project, the EA addresses Alabama Rivers' concern.⁹⁸ The EA acknowledges that Alabama Power did not use quantitative habitat data, but explains that Alabama Power and resource agencies agreed, instead, to take an adaptive management approach to determine flows for the Weiss bypassed reach. The EA also discusses the fact that the flow in the Weiss bypassed reach can reverse direction at times.⁹⁹

Consequently, a conventional IFIM approach would be difficult to apply to the reach, because the models that are used to develop data for IFIM are not well suited for assessing habitat in river reaches with occasional reversal of flow. Regardless of the methodology used to assess flows in the Weiss bypassed reach, the EA analyzed the benefits of Alabama Power's proposed flows, as well as those recommended by the Conservation Groups¹⁰⁰ and found that the minimum flows proposed by Alabama Power, along with a monitoring provision, would adequately protect and enhance existing resources at a lower cost.¹⁰¹

126. Alabama Rivers disagrees with staff's recommendation that Alabama Power file an updated Weiss Bypass Flow Adaptive Management Plan for Commission approval, because this information should have been gathered and considered prior to finalizing the EA. As noted earlier, the FPA does not require that the Commission have perfect information before taking a licensing action. In this instance, staff reviewed Alabama Power's license application and required additional information where necessary to fill information gaps and clarify aspects of Alabama Power's proposal. Staff reviewed the information in the record and determined it to be of sufficient detail for purposes of preparing the EA.

⁹⁸ See EA at B-11.

⁹⁹ Flow reverses in the Weiss bypassed reach due to a backwatering effect from the operation of the Weiss powerhouse and the flow fluctuations associated with the operation of the Neely Henry development.

¹⁰⁰ The Conservation Groups recommended higher percentage target flows be provided: 30 percent of mean annual flow from July through November; 60 percent of mean annual flow from January through April; and 40 percent of the mean annual flow in May, June, and December.

¹⁰¹ See EA at 93-96, 206, and 225-28.

b. Fish Spawning

127. Since 1989, Alabama Power voluntarily has held lake levels constant or only slightly increased them at the Weiss development for a 14-day period during the spring to support favorable conditions for spawning for crappie as well as for other spring-spawning, warm water fish species, including largemouth bass. Alabama Power has implemented a similar strategy at Logan Martin reservoir.

128. In the EA,¹⁰² staff found that the success of the fishery at the Weiss and Logan Martin reservoirs is likely due to many factors, but the stabilization of lake levels during the crappie and largemouth bass spawning season contributes to successful year class production. Therefore, the EA recommended, and Article 410, *Crappie and Black Bass Spawning Enhancement at Weiss and Logan Martin Reservoirs*, requires that Alabama Power continue to hold lake levels constant for a 14-day period during the spring.¹⁰³ Article 410 gives Alabama Power the flexibility to, after consultations with Alabama DCNR and the Corps, forego the stabilization of the lake levels in a particular year, or halt the stabilization at any point during the 14-day period, due to adverse hydrological conditions (e.g., drought), maintenance activities, or other operational conditions.

2. Flow releases below Neely Henry, Logan Martin, Lay, and Mitchell developments

129. Conservation Groups assert that minimum flow schedules are needed downstream from each development to protect non-developmental uses of the river.¹⁰⁴ We disagree.

130. The tailwaters downstream of the Neely Henry, Logan Martin, Lay, and Mitchell developments each flow into the backwater of the reservoir or lake located immediately downstream from that development.¹⁰⁵ Releasing minimum flows, as recommended by Alabama Rivers, could result in higher velocities and provide short reaches of riverine type habitat, similar to what now occurs when the developments are generating, although on a continuous basis. However, these reaches currently experience little dewatering of

¹⁰² See EA at 67-68.

¹⁰³ See EA at 236 and 237.

¹⁰⁴ Conservation Groups July 8, 2010 Comments at 31.

¹⁰⁵ See EA at 225.

habitat and support excellent tailwater fisheries. Therefore, the need for minimum flows in these reaches has not been established at this time. Alabama Power proposes to implement, and the resource agencies concur, an adaptive management approach to assess the need for, and extent of, minimum flows in the Neely Henry, Logan Martin, Lay, and Mitchell development's tailraces. Alabama Power would consult with Alabama DCNR and FWS to develop final plans and schedules for studies following the implementation of aeration systems to improve DO levels at the project. Staff recommended Alabama Power file the final plans and schedules for Commission approval.¹⁰⁶

131. FWS' BO includes, as a condition, a requirement to revise and implement Alabama Power's Logan Martin adaptive management plan. Article 417, *Threatened and Endangered Species Protection Plan*, requires Alabama Power to develop a plan for implementing the terms and conditions of FWS' BO, including: (1) measures associated with the Logan Martin adaptive management plan; and (2) habitat and water quality monitoring in the Coosa River. The actions taken as part of the Threatened and Endangered Species Protection Plan are expected to identify factors affecting aquatic habitat for federally listed species, and any measures taken for such species are likely to benefit other aquatic species as well.

132. As for minimum flows for the remaining developments, staff found no basis for requiring continuous minimum flows downstream from the developments at this time,¹⁰⁷ and this order does not require such flows. Standard Article 15 provides the Commission the ability to reconsider the need for minimum flows downstream from these developments if conditions change or as new information becomes available.

3. Flow Release Plan below Jordan Development

133. Alabama Power operates the Jordan development in a run-of-river mode, with flow releases that protect the federally listed tultoma snail, enhance aquatic resources, and provide whitewater boating. Alabama Power proposes to continue these flow releases, which it has been implementing, with minor modification, since 1997.

¹⁰⁶ See EA at 217.

¹⁰⁷ See EA at 228-29.

134. As discussed in the EA,¹⁰⁸ since implementing the flows downstream from the Jordan dam, there has been a beneficial effect on the aquatic resources and recreational opportunities. The reach now supports a trophy fishery for spotted bass and a population of the federally listed tulotoma snail. In addition, the weekend releases, from June 16 through October 31, continue to provide for Class I through Class III whitewater boating¹⁰⁹ in a 7.5-mile-long reach between the Jordan dam and a takeout point downstream from the dam. Accordingly, Article 405, *Minimum Flow Releases at the Jordan Development*, requires Alabama Power to continue providing the existing minimum flow releases and scheduled recreational flow releases.

135. Upon completing the refurbishment of unit 4 at the Jordan development, Alabama Power proposes to evaluate whether such refurbishment alleviates a hydraulic constraint of the turbine unit so that Alabama Power would be able to provide recreational flows in the 4,000 cfs to 5,000 cfs range instead of the 4,000 cfs that it currently releases. If sustained flows in this range are feasible, Alabama Power proposes to negotiate an alternative release schedule with interested stakeholders.

136. The EA concludes¹¹⁰ that flows of about 4,475 cfs would provide safer boating opportunities than the existing 4,000-cfs release, and a more satisfying whitewater experience. In the event that flows in the requested range are feasible after the refurbishment of unit 4, the EA recommends that Alabama Power conduct a study to evaluate and determine the flows that would provide a better boating experience. We agree. Accordingly, Article 405, *Minimum Flow Releases at the Jordan Development*, requires the licensee, upon completion of the turbine unit upgrade, to evaluate whether refurbishment of unit 4 alleviates a hydraulic constraint so that the licensee shall be able to provide recreation flows in the range of 4,000 cfs to 5,000 cfs, instead of the current 4,000 cfs flow, and determine the appropriate recreation flow releases, including a schedule for such releases into the Coosa River downstream of the Jordan dam.

¹⁰⁸ See EA at 228.

¹⁰⁹ The International Scale of River Difficulty defines six classes of whitewater: Class I – easy; Class II – novice; Class III – intermediate; Class IV – advanced; Class V – expert; and Class VI – extreme.

¹¹⁰ See EA at 180-81.

4. Navigation Flows

137. The Corps has congressionally mandated authority to determine flows for navigation, and standard Articles 12 or 18 of the current licenses for the Coosa, Mitchell, and Jordan projects require Alabama Power to release water from the project developments, as the Corps may prescribe in the interest of navigation. The Corps' current navigation requirement for the Coosa River Project, per the 1972 agreement, specifies a minimum 7-day average target flow of 4,640 cfs be provided by the combined releases from developments on the Coosa and Tallapoosa rivers. The Corps has not specified a specific target flow requirement for the Coosa River Project. Therefore, the license does not require a specific navigation release for the Coosa River Project. Rather, standard Article 12 is used to ensure that flows for navigation, specific to the Coosa River Project, are implemented at such time the Corps identifies a target flow specifically for the Coosa River Project.

138. Alabama Power proposes to continue navigation flow releases from the Coosa River Project in accordance with the 1972 agreement with the Corps. In the EA,¹¹¹ staff concluded that, during wet and normal water years, adequate flows are available in the Coosa and Tallapoosa River basins to meet navigation needs. However, during moderate and extreme drought years, inflows to the project are inadequate to maintain navigation. As required in the BO and discussed below, Article 403 requires Alabama Power to implement the Coosa River Portion of the ADROP as a drought management plan for the Coosa River. The plan provides a means to manage water use in the Coosa River during severe droughts.

139. ADROP replaces staff's recommendation in the EA to require a drought management plan, which had provisions for releases up to 4,640 cfs during drought conditions. Therefore, Alabama Power's concern that staff's recommended interim measures during droughts would require it to release 4,640 cfs from the project during undefined "drought conditions," is moot.

140. With regard to a specific flow target of 4,640 cfs for navigation, Alabama Power asserts that the EA mischaracterizes the 4,640-cfs flow as a "requirement" for navigation.¹¹² Alabama Power adds that "the 4,640 cfs flow is not an enforceable requirement under our FERC licenses or any Corps-issued directive. Rather, it is a

¹¹¹ See EA at 230.

¹¹² *Id.* at 4.

qualified commitment to support downstream navigation, which Alabama Power has honored since 1972.”

141. We disagree. While Alabama Power entered into the 1972 agreement with the Corps to provide navigation flows on the Alabama River, as a requirement of the original license for the Martin Project, the agreement covers both the Tallapoosa (where the Martin Project is located) and Coosa rivers. Therefore, in conformance with standard Article 12 of the current license, the 4,640-cfs is a requirement of the Coosa River Project as well.

142. Alabama Power asserts that the EA’s recommendation to provide a flow of 4,640 cfs eliminates the qualification in the 1972 agreement that the 4,640-cfs flow will be provided so long as the upstream storage dams are above minimum operating curve elevations.¹¹³ Staff’s review of the 1972 agreement suggests that Alabama Power is required to release 4,640 cfs at all times, unless otherwise directed by the Corps. In any event, Alabama Power’s assertion here is moot, because standard Articles 12 or 18 of the current licenses for the Coosa, Mitchell, and Jordan projects, and standard Article 12 of this license, gives the Corps the authority to specify reasonable measures for navigation.

5. Drought Management

143. During wet and normal water years, inflows are generally adequate to meet existing downstream flow needs and maintain reservoir levels near the operating curves for the developments. During periods of low inflows at the Weiss, Neely Henry, and Logan Martin developments, water is released from the storage pools to help maintain downstream water quality, aquatic habitat, power generation, navigation, and recreational opportunities. However, during extreme drought years, as experienced in 2006 and 2007, inflows to the developments are inadequate to maintain downstream minimum flows and reservoir levels near the operating curves.¹¹⁴

144. In its January 24, 2011 filing, Alabama Power proposes to implement the ADROP, which was submitted as an attachment to its revised Coosa River Biological Assessment. ADROP includes a plan to manage Alabama Power reservoirs within the Alabama, Coosa, and Tallapoosa River Basin during drought conditions. ADROP requires monitoring rainfall and stream flow within the ACT River Basin. When drought

¹¹³ *Id.* at 4-5.

¹¹⁴ *See* EA at 230.

indicators reach specified levels, operations responses are triggered, resulting in pre-determined incremental reductions or increases in flow released from Alabama Power reservoirs.

145. ADROP is a basin-wide comprehensive plan for drought management which includes the Coosa River, Tallapoosa River, and part of the Alabama River. FWS' BO (see RPM Action (4)) specifies that Alabama Power is to implement the Coosa River Project portion of ADROP. The BO's terms and conditions include specific measures to implement this RPM. The BO requires Alabama Power to maintain flow reductions at 67 cfs per day¹¹⁵ and monitor water surface temperatures at multiple locations between the Jordan dam and Corn Creek Shoals during drought conditions. In addition, the BO requires that all excess water in Jordan Lake be used to maintain the wetted perimeter of the Coosa River downstream from the Jordan dam. Article 417, *Threatened and Endangered Species Protection Plan*, requires that Alabama Power develop a plan to implement the provisions of the BO. Upon license issuance, Article 403, *Drought Management*, requires Alabama Power to implement the Coosa River portion of ADROP.

146. Conservation Groups raised concerns about the EA's recommendations for flow releases from the project during drought conditions,¹¹⁶ and the Atlanta Commission argues that no license should be issued for the Coosa River Project until a drought management plan has been finalized and analyzed.¹¹⁷ Atlanta Commission further argues that any license issued should contain conditions that are consistent with the Corps plan.¹¹⁸ This license requires the implementation of the Coosa River portion of ADROP, which defines the flow releases from the Coosa River Project to protect navigation and other non-developmental resources during drought conditions. The flow releases outlined in the Coosa River portion were developed based on experiences in operating the

¹¹⁵ This is the rate at which Alabama Power would reduce flows in the Coosa River downstream from the Jordan dam when transitioning from one flow to another as provided by ADROP.

¹¹⁶ Conservation Groups July 8, 2010 Comments at 31.

¹¹⁷ Atlanta Commission November 22, 2010 Comments at 2.

¹¹⁸ *Id.*

project during drought conditions,¹¹⁹ and FWS's BO found these flow provisions to be protective of listed species.

6. Project Operation and Flow Monitoring Plan

147. Alabama Power proposes complex operations,¹²⁰ including flow releases in the Weiss bypassed reach and downstream of the Jordan dam, to meet a variety of needs (e.g., protecting environmental resources, recreation, navigation, and flood control). The EA recommended many of Alabama Power's operation proposals, as well as a means to monitor compliance with such operations.¹²¹ To enable the Commission to monitor compliance with the operational provisions of this license, as well as provide important data needed by Alabama Power and the resource agencies to evaluate what effects, if any, the required water levels and flow releases have on the environmental resources, Article 406, *Project Operation and Flow Monitoring Plan*, requires Alabama Power to develop and implement an operation and flow monitoring plan.

¹¹⁹ The Commission addressed the issue of flow releases during droughts at the Jordan development when it authorized a temporary reduction in the minimum flows from 2,000 cfs to 1,600 cfs in response to drought conditions. *See Alabama Power Co.*, 121 FERC ¶ 62,011 (2007) and *Alabama Power Co.*, 121 FERC ¶ 62,156.

¹²⁰ Conservation Groups assert that the EA did not address previously filed comments that rapid fluctuations in water levels due to peaking operations may impact fish during critical times (e.g., spawning). *See* Conservation Groups July 8, 2010 Comments at 28-29. Conservation Groups are incorrect. The EA assessed the impacts of flow fluctuations on aquatic organisms. *See* EA at 98-99 and 232-33. The EA explained that Alabama Power provides daily ramping of flows downstream from the Jordan development when flows are reduced from 4,000 to 2,000 cfs. The EA also explained that the remaining peaking developments (Weiss, Neely Henry, and Logan Martin) each discharge to the upper end of the downstream development's reservoir, and not to riverine habitats that typically benefit from ramping. Water velocities would range from 0 to around 6 feet per second during generation, but little habitat would be dewatered. Regardless of these operational conditions, each of the developments has excellent tailwater fisheries and there is a healthy population of tulotoma snails downstream from the Jordan development (*see* EA at 233 and B-12). This suggests that existing project operation is not affecting fish and other aquatic organisms.

¹²¹ *See* EA at 225-32, and 235-37.

D. DO and Water Temperatures

148. The project's intakes draw water from the deeper portions of their respective impoundments. As a consequence, the state standard of no less than 4.0 mg/L is not met all the time in the project's tailraces (i.e., it's not met between about 1 and 20 percent of the time, depending on development).¹²² Also, leakage from the Logan Martin dam results in low DO levels downstream from the dam. To improve DO in the project discharges, Alabama Power proposes to install or upgrade aeration systems at each development to meet the state standard of no less than 4.0 mg/L. As discussed previously in this order, we are requiring Alabama Power to install or upgrade aeration systems, monitor DO levels, and modify operations to enhance DO at each of the project's developments.

149. The Conservation Groups and Alabama Rivers recommend Alabama Power operate the project to maintain DO of no less than 5.0 mg/L. These entities filed comments on the final EA and on FWS' BO that they claim further support the need for a DO of 5.0 mg/L to protect aquatic life in the Coosa River.¹²³ Specifically, the Conservation Groups and Alabama Rivers cite to studies in other basins in the southeastern United States and depositions from biologists familiar with the Coosa River that they contend support the need for higher DO concentrations. In addition, Conservation Groups contend that the EA does not address Wildlife Fund's comments on the draft EA¹²⁴ that DO concentrations less than 5.0 mg/L may negatively affect balance in the aquatic community.

150. While not all of the studies cited by Alabama Rivers were considered by staff in the preparation of the EA, the cited studies are not new and provide information similar to what staff analyzed in preparing the EA. Commission staff considered Wildlife Fund's comments in the EA, noting that higher DO levels are generally more beneficial for aquatic biota.¹²⁵ In addition, staff recognizes that Alabama DEM considers its DO standard of no less than 4.0 mg/L in the discharge of an existing hydropower project to be

¹²² See EA at 85 and 86.

¹²³ Conservation Groups July 8, 2010 Comments at 24-26 and Alabama Rivers November 9, 2012 Comments at 6-7.

¹²⁴ Wildlife Fund's May 6, 2009 Comments at 8.

¹²⁵ See EA at B-13 and B-17.

sufficiently protective of aquatic biota, including threatened and endangered species.¹²⁶ Giving due weight to the state's water quality certification, staff concluded that maintaining the state standard of no less than 4.0 mg/L would provide adequate DO for downstream aquatic communities.

151. Notwithstanding the issue of what DO concentration should be required at the Coosa River Project, as staff noted in the EA, the measures proposed by Alabama Power may result in DO levels greater than 5.0 mg/L in the developments' discharges.¹²⁷ Turbine aeration devices are commonly employed at other hydropower projects licensed by the Commission, and have been shown to improve DO levels in the receiving waters. For example, Alabama Power maintains DO levels in the Jordan tailwater above the minimum state standard of 4.0 mg/L using turbine aeration measures.¹²⁸ In addition, as previously discussed, this license requires Alabama Power to monitor DO levels downstream from each development. If the monitoring shows that the turbine aeration systems do not bring DO levels up to the state standard, then the licensee will be required to develop structural or operational modifications to the project, which would have to be filed with the Commission for approval.

152. Conservation Groups assert that staff should have required Alabama Power to file detailed plans for the aeration systems and water quality monitoring in order to have reasonable assurance that Alabama Power's proposal would protect water quality. We find that sufficient information exists to determine that measures to improve DO levels should be implemented¹²⁹ and that the aeration systems and monitoring programs are reasonable steps to achieve the state's standard for DO. Regardless, the certification

¹²⁶ As noted by Alabama DEM in a letter to Wildlife Fund, EPA Region 4 has approved Alabama's water quality standards numerous times pursuant to consultations with FWS under section 7 of the ESA. *See* Conservation Groups July 8, 2010 Comments at P. 31 of Exhibit 2, which includes a June 22, 2010 letter from Lynn Sisk, Alabama DEM, to Judy Takats, Wildlife Fund.

¹²⁷ *See* EA at B-13.

¹²⁸ Alabama Power filed reports on February 4, 2008 and December 12, 2008 documenting the effects on DO of reducing flow downstream from the Jordan development. With the development's aeration system operating, Alabama Power maintained DO in the low-flow months at or above 5.0 mg/L.

¹²⁹ *See* EA at 222-24.

requires maintenance of state standards for DO at all times, via structural or operational measures at each development, if additional measures prove necessary.

153. Alabama Rivers recommends that DO and water temperature monitoring locations in the Weiss bypassed reach and each development's tailraces include locations in interstitial waters.¹³⁰ Monitoring DO and water temperature in interstitial waters is unnecessary to maintain consistency with state water quality standards. Nonetheless, these areas are particularly important to freshwater mussels, some of which are federally listed under ESA. Therefore, Article 408, *Water Quality Monitoring Plan*, requires Alabama Power to consult with FWS, Alabama DEM, and Alabama DCNR to establish monitoring locations that account for interstitial waters.

154. Conservation Groups assert that the EA omits specific discussion of the project's impacts on any water quality criteria other than DO.¹³¹ Conservation Groups argue that it is not clear whether the proposed new license will have significant impacts on attainment of such criteria. For example, Conservation Groups assert that staff does not recommend specific conditions to assure that temperature exceedances will be addressed.

155. The EA describes potential project-related effects on DO and water temperature,¹³² but does not include any discussion of potential project impacts on other water quality criteria (e.g., pH, chlorophyll A, phosphorus, nitrogen, and coliform bacteria). However, no entity, including Alabama DEM, expressed a concern regarding such other water quality criteria, nor did any entity recommend measures to address any water quality parameters other than DO and water temperature. Moreover, these other parameters are generally unaffected by hydropower project operation. Therefore, staff's decision to not analyze them in the EA was reasonable.

156. With respect to temperature exceedances, the certification requires Alabama Power to monitor and report DO and water temperature annually for the first 3 years of its license. Article 408, *Water Quality Monitoring Plan*, requires Alabama Power to develop a plan to implement the provisions of the certification, including filing requisite plans and reports with the Commission for review. Should the reports show water

¹³⁰ Interstitial refers to that portion of the surface water that infiltrates a streambed and moves through the gravel substrate.

¹³¹ Conservation Groups July 8, 2010 Comments at 19.

¹³² See EA at 86-88.

temperature exceedances that are detrimental to fish and other aquatic organisms at the project, the Commission may require Alabama Power to implement measures at the project to address an identified effect.

157. Conservation Groups assert that the EA does not consider alternative flow regimes as a means of increasing DO concentrations downstream from the project's developments.¹³³ Conservation Groups are mistaken. The EA recognizes that providing continuous instream flows to reaches of the Coosa River that currently receive little flow or to reaches that receive intermittent powerhouse releases, would improve aquatic habitat conditions.¹³⁴ However, staff found little basis for recommending continuous minimum flows at each of the developments at this time,¹³⁵ except in the Weiss bypassed reach and downstream from the Jordan development. However, this license provides several mechanisms to establish minimum flows at individual developments after license issuance, should flows be found necessary through the monitoring required by this license.¹³⁶ These requirements should address the concerns of the Conservation Groups.

E. Clean Water Partnership

158. Alabama Power proposes to continue participating with the Clean Water Partnership and to share technical data from the project's relicensing effort with the partnership. The partnership is a coordinated effort of public and private stakeholders to restore and protect the state's river basins, in accordance with the goals of the CWA. In the EA,¹³⁷ staff found that the specific goals and measures that would be implemented under the program are too general to determine the public benefit or serve a project

¹³³ *Id.* at 21.

¹³⁴ See EA at 92. Aquatic habitat is defined as a specific area with environmental (i.e., biological, chemical, or physical) characteristics needed and used by an aquatic organism, population, or community. Water quality, then, is part of what makes up aquatic habitat.

¹³⁵ There is little dewatering of habitat downstream from each development and the tailwater fisheries are considered excellent. See EA at 97.

¹³⁶ See Article 408, *Water Quality Monitoring Plan*; and Article 417, *Threatened and Endangered Species Protection Plan*.

¹³⁷ See EA at 247.

purpose. Therefore, although Alabama Power may continue its participation in the partnership, the license does not require this measure.

F. Funding to Alabama DCNR

159. Alabama Power proposes to provide \$4.23 million to Alabama DCNR to help the agency establish and maintain a Fish Habitat Enhancement Program for project waters. Alabama DCNR would use the funds to introduce natural woody debris and brush piles, add spawning gravels, and stabilize stream banks. In the EA,¹³⁸ staff found that such measures would enhance fish and invertebrate habitat, increase angling opportunities, and improve water quality and cover for organisms using near shore waters.

160. Staff determined that the estimated funding levels would likely be adequate to implement the measures. However, the Commission looks to its licensees to implement specific measures.¹³⁹ Therefore, Article 411 requires Alabama Power to file a *Fish Habitat Enhancement Plan* for project waters that includes: (1) the elements of the Fish Habitat Enhancement Program; (2) a schedule for implementing the habitat enhancements; (3) consultation with Alabama DCNR and FWS; and (4) a reporting provision to document the yearly efforts, as well as proposals, subject to Commission approval, for the next year.

G. Fish Passage

161. Three Corps locks and dams downstream on the Alabama River prevent the migration of anadromous or catadromous fish species in the Coosa River. Alabama Power does not propose fish passage at any of the Coosa River Project developments.

162. Conservation Groups state that, according to Alabama DCNR, the restriction of passage has ongoing effects on fish and the invertebrates that depend on them. Conservation Groups assert that the EA wrongly declines to study alternatives for fish passage.¹⁴⁰ Alabama Rivers provided similar comments on the draft EA, which staff addressed in the EA.¹⁴¹ Staff concluded that there are no diadromous fish that currently

¹³⁸ See EA at 235.

¹³⁹ See *Policy Statement on Hydropower Licensing Settlements*, 116 FERC ¶ 61,270.

¹⁴⁰ Conservation Groups July 8, 2010 Comments at 37.

¹⁴¹ See EA at B-10 and 11.

have access to or use the Coosa River. Staff also concluded that there is some benefit to downstream movement of resident fish through the Coosa River Project area, and that the lack of upstream passage did not seem to hinder resident fish populations. Conservation Groups provide no new information that challenges staff's conclusion regarding the need for fish passage at the project at this time.¹⁴² Moreover, as requested by Interior and discussed previously, this license reserves the Commission's authority to require fishways for the Coosa River Project that may be prescribed by the Secretary of the Interior in the future.

H. Wildlife Management Plan

163. Alabama Power proposes to implement its Coosa Wildlife Management Plan¹⁴³ to protect and enhance wetland and upland wildlife habitat within the Coosa River Project. The EA found that (with the exception of Section 11, discussed in the next paragraph) the specific objectives of the plan, which are described in the EA,¹⁴⁴ would protect and enhance wildlife and wildlife habitat on project lands.¹⁴⁵

164. Section 11 of the proposed plan includes a provision to fund a Wildlife Habitat Enhancement and Restoration Program. The purpose of the program is to provide a framework for Alabama Power and Alabama DCNR to work cooperatively to enhance and restore wildlife and their habitats in the Coosa and Warrior Project areas. Alabama Power identified three projects which "among others, will be considered" for funding,

¹⁴² Conservation Groups argue that "dams, in most cases, block the movement of catadromous, anadromous, and riverine fish species," resulting in, among other things, fragmentation of native fish ranges and long-term river fragmentation. *See* Conservation Groups July 8, 2010 Comments at 37. However, Conservation Groups do not explain why this general statement applies specifically to the Coosa River Project, given the findings set forth in the EA that diadromous fish do not have access to the Coosa River and the resident, riverine fisheries are excellent, or why the Commission's reserved authority does not ensure appropriate protections.

¹⁴³ The plan is included in Volume 4 of the license application filed on July 28, 2005. Although it was filed as a draft, Alabama Power did not file a final plan with the Commission.

¹⁴⁴ *See* EA at 112.

¹⁴⁵ *See* EA at 238.

including: development and management of a waterfowl area on the Weiss development; wildlife habitat enhancement on Coosa Wildlife Management Area lands within the Mitchell Project Boundary; and applications for matching grants for wildlife restoration and enhancement projects to be conducted on Warrior River and/or Coosa River Projects.¹⁴⁶ In the EA,¹⁴⁷ staff concluded that, while the program would benefit wildlife resources within the Coosa and Warrior basins, it could not analyze the specific benefits of the fund to the Coosa River Project because Alabama Power did not provide the dollar allocations for the Coosa River Project, or identify specific measures or locations which would be funded. Accordingly, staff recommended this funding measure not be included in the license.

165. We agree. The Commission's role in overseeing license compliance makes it important that license conditions be clear and enforceable.¹⁴⁸ Proposed conditions that do not clearly outline the licensee's responsibilities and establish the parameters governing required actions may be difficult or impossible to enforce.¹⁴⁹ Proposed measures should be as narrow as possible, with specific measures preferred over general measures.¹⁵⁰ Accordingly, because the Commission cannot analyze the specific benefits of the proposed fund on Coosa River Project lands, we will not include it as an Article 412, *Wildlife Management Plan* requirement. Alabama Power is free to work with Alabama DCNR outside of the license.

166. Article 412, *Wildlife Management Plan*, requires Alabama Power to implement Sections 1 through 10 of its Wildlife Management Plan. The article further requires Alabama Power, in consultation with FWS and Alabama DCNR, to develop and implement a schedule for conducting annual bald eagle surveys.

¹⁴⁶ See Appendix B to Alabama Power's proposed Coosa River Wildlife Management Plan, Volume 4 of July 28, 2011 license application.

¹⁴⁷ See EA at 238.

¹⁴⁸ See *Policy Statement on Hydropower Licensing Settlements*, 116 FERC ¶ 61,270 at P 2-3 (2006).

¹⁴⁹ *Id.* at P 4.

¹⁵⁰ *Id.* at P 6.

167. Conservation Groups state that the EA shows that continued project operation will have significant impacts that are not entirely beneficial, in that operation of the project may benefit some fish and wildlife resources, but may adversely affect others.¹⁵¹ Conservation Groups assert that further study and analysis of the effects must be conducted in the form of an environmental impact statement (EIS), and that the Commission must gather “specific” data on project impacts to wildlife habitat under existing, proposed, and alternative operations.¹⁵² Conservation Groups provide no substantive evidence to support their assertions.

168. As relevant here, an EIS is not necessary to assess how a project may affect wildlife and their habitats at a project. Moreover, staff need only assess those measures recommended by other entities or that it identifies as reasonable.¹⁵³ The EA for the Coosa River Project describes Alabama Power’s proposed action, as well as measures recommended by other entities to address potential effects on wildlife and wildlife habitat. Staff assessed the effects of the measures in the EA, concluding that the consequences could be either positive or negative. To address such potential effects, staff recommended Alabama Power develop and implement a Wildlife Management Plan, finding that such a measure would benefit wildlife and its habitats at the Coosa River Project,¹⁵⁴ which Conservation Groups do not challenge.

I. Toxins Report

169. Fish consumption advisories have been issued for portions of the Coosa River within the Weiss, Neely Henry, Logan Martin, and Lay developments, due to polychlorinated biphenyl (PCB) contamination.¹⁵⁵ Alabama Power proposes to make the

¹⁵¹ Conservation Groups July 8, 2010 Comments at 39 (citing EA at 108-13).

¹⁵² *Id.*

¹⁵³ Conservation Groups and American Rivers did not provide any recommendations pertaining to wildlife and wildlife habitats in response to the Commission’s June 6, 2008 public notice that the application was ready for environmental analysis.

¹⁵⁴ *See* EA at 238

¹⁵⁵ *See* EA at 66.

Toxins Issue Report,¹⁵⁶ which it prepared and filed with its relicense application, available for public education purposes. In addition, the Logan Martin Association recommends that any activity in areas with contaminated sediments at the Logan Martin development receive heightened scrutiny by Alabama Power and the Corps before such activity is permitted.

170. As noted by staff in the EA,¹⁵⁷ while staff does not object to Alabama Power providing this information to the public, a specific license requirement to do so is not warranted. Any PCB contamination in the Coosa River is unrelated to the Alabama Power developments and not the result of project construction or operation. The report is in any event available to the public through the public record of this proceeding. As to Logan Martin Association's recommendation, any proposed activity that would require dredging (and thus could disturb contaminated sediments) will require a CWA section 404 permit from the Corps before an entity would be authorized to undertake such activity.

J. Recreation Plan

1. Recreation Sites

171. To enhance recreation resources at the project, Alabama Power proposes to improve recreation facilities as described in its Coosa River Project Recreation Plan.¹⁵⁸ The plan includes measures at a total of 65 developed and undeveloped recreation sites, which are owned and operated by various entities, including Alabama Power; all are located within, or adjacent to, the project boundary. Alabama Power owns and operates 42 of the 65 recreation sites, which provide boat launches, parking areas, campsites, fishing piers, docks, bank fishing access, and trails.¹⁵⁹ The plan also includes funds to the Alabama Marine Police to perform public safety at the project reservoirs and lakes.

¹⁵⁶ See Volume 4, E5 – Toxins Issue Report, of Alabama Power's license application, filed July 28, 2005.

¹⁵⁷ See EA at 88.

¹⁵⁸ See Volume 5 of Alabama Power's license application, filed July 28, 2005.

¹⁵⁹ See EA at 158-59.

172. In the EA,¹⁶⁰ staff recommended measures for 40 of the recreation sites owned and operated by Alabama Power that would result in a significant improvement to recreational opportunities. The most significant measures include provisions for: (1) installing a fishing pier at the Weiss, Neely Henry, Lay, and Jordan developments; (2) developing a trail at Lay, Mitchell, Jordan and Bouldin developments; (3) repairing an existing, or installing a new, boat launch at Weiss, Mitchell, and Jordan and Bouldin developments; (4) improving five primitive campsites with toilets, defined fire rings, and stabilizing the shoreline at Mitchell development; (5) reconfiguring the parking areas to define vehicles and vehicles with trailer-boat parking at each development; and (6) reserving five sites for future recreation development.¹⁶¹

173. Overall, the recreation measures would enhance recreational opportunities at the project and contribute to a cumulative beneficial effect on recreation resources within the Coosa River Basin.¹⁶² However, the Recreation Plan filed with the license application encompasses both project and non-project recreation sites, includes a schedule with dates that have passed and dates for improving non-project recreation sites, and does not take into account the Commission-approved tailrace fishing access facilities at the Mitchell development and the Jordan development.¹⁶³ Therefore, Article 413, *Recreation Plan*, requires Alabama Power to revise and file a Recreation Plan.

174. In the EA,¹⁶⁴ staff did not recommend, and this license does not require, that Alabama Power implement its proposed improvements at non-project recreation sites

¹⁶⁰ See EA at 174-75.

¹⁶¹ The five sites are: at Neely Henry development, Future Land Site (Site 45); at Lay development, Kelly Creek Boat Launch (Site 14) and Glover's Point Landing (Site 15); and at Jordan and Bouldin developments, Future Land Site (Site 47) and Potential Swimming Access between Site No. 19 and Site No. 20.

¹⁶² See EA at 182.

¹⁶³ As discussed earlier, the Mitchell Project Comprehensive Recreation Master Plan was amended in 1985 to add a tailrace fishing access facility, and the Jordan Dam Project Recreation Use Plan was amended in 2001 to add a tailrace fishing access facility. See *supra* notes 19 & 20. Staff did not count these two tailrace fishing access facilities in its 40 recommended measures for recreation sites. This order requires all 42 sites for project recreation.

¹⁶⁴ See EA at 249-50.

(i.e., at a state or county recreation site) because: (1) the proposed measures at project recreation sites are sufficient to meet recreation needs at the project; and (2) the proposed measures at non-project recreation sites are not needed to satisfy project purposes. Staff also did not recommend, and this license does not require, Alabama Power's proposed funding of the Alabama Marine Police. Such funding is not the responsibility of a licensee in the context of a Commission license and is not required to fulfill the project's purposes.¹⁶⁵ In general, the Commission is concerned with protecting resources and having specific enforceable provisions towards that end rather than requiring a licensee to provide funding for agency personnel.¹⁶⁶

175. Conservation Groups assert that staff's recommended modifications, now authorized here, to Alabama Power's Recreation Plan, do not demonstrate that the recreational enhancements "will adequately mitigate the project's impacts on recreation if Staff does not even know what specific enhancements APC [Alabama Power] is proposing or whether the enhancements are within or outside the project boundary." The Conservation Groups argue further that "Staff does not even know when APC would implement the enhancement measures," and that "the final EA does not cite to any specific data or analysis which show that the proposed license would not cause or continue any significant impacts on recreational resources."¹⁶⁷

176. We disagree. Staff identified the recreation enhancements and whether the enhancements were located within, or adjacent to, the project boundary, and considered the existing and projected recreational use and capacity at the recreation sites and whether Alabama Power's proposed enhancements would meet existing and future needs.¹⁶⁸ As to an implementation schedule, we are requiring Alabama Power to file a revised implementation schedule for Commission approval. Further, under the staff

¹⁶⁵ See *Policy Statement on Hydropower Licensing Settlements*, 116 FERC ¶ 61,270 (2006).

¹⁶⁶ See *Portland General Electric Company and Confederated Tribes of the Warm Springs Reservation of Oregon*, 117 FERC ¶ 61,112, at P 83 (2006).

¹⁶⁷ Conservation Groups July 8, 2010 Comments at 40.

¹⁶⁸ See EA at 137-55.

alternative, staff found the proposed recreation measures would contribute to a cumulative beneficial effect on recreation resources within the Coosa River Basin.¹⁶⁹

2. Monitoring Recreational Use

177. Alabama Power proposes to continue monitoring recreational use levels at the project recreation sites and report recreation use levels on the project's Licensed Hydropower Development Recreation Report (Form 80) every six years, as required by Part 8 of the Commission's regulations.¹⁷⁰ Alabama Power proposes to hold a recreation group meeting prior to filing Form 80 data with the Commission to discuss recreational use and demand, and project-related resource effects, etc., based on Form 80 data. In the EA,¹⁷¹ staff found that monitoring of recreational use and demand at the project would assist Alabama Power to identify when recreation needs are no longer being met. Therefore, Article 413, *Recreation Plan*, requires Alabama Power to file a Recreation Monitoring Report with the Form 80 every six years.

K. Project Boundary

1. Recreation Sites

178. Alabama Power proposes, and staff recommended, the project boundary be modified to include a total of 13 developed and undeveloped recreation sites that are located partially within, or adjacent to, the project boundary and are needed to support water-based, project-related recreation and public access to project lands and waters.¹⁷² We agree. Because these facilities are necessary for project purposes, they must be brought into the project boundary, and Article 203, *Exhibit G Drawings*, so requires.

179. Nine of the 13 recreation sites are located entirely on Alabama Power-owned land: (1) at the Lay development, Beeswax Creek Boat Launch and Park (Site 13A & Site 13B), Lay Dam Boat Launch (Site 3), Shelby County 400 Boat Launch (Site 7), Kelly Creek Boat Launch (Site 14), and Glover's Point Landing (Site 15); (2) at the Mitchell

¹⁶⁹ See EA at 182.

¹⁷⁰ 18 C.F.R. § 8.11 (2012).

¹⁷¹ See EA at 157.

¹⁷² See EA at 242.

Development, Big Foot Boat Launch (Site 8) and Double Bridges Company (Site 12); and (3) at the Jordan and Bouldin developments, Future Land Site (Site 47).

180. At the remaining four sites, only the shorelines are owned by Alabama Power and within the project boundary: (1) State Route 9 Informal Fishing Area (Site 58), at the Weiss development; (2) Route 145 Bridge Bank Fishing (Site 33), at the Lay development; (3) Bouldin Canal Bank Fishing (Site 25C), at the Jordan development; and (4) Croft's Ferry boat launch (Site 40), at the Neely Henry development. Adjacent lands, which are informal recreation sites on state or county rights of way, are outside of the project boundary. We assume that the state or county will continue to operate and maintain these recreation lands, and we thus will not require that they be brought into the project boundary.¹⁷³ Article 413, *Recreation Plan*, requires Alabama Power to continue to operate and maintain only those portions of Site 58, Site 33, Site 25C, and Site 40 located on Alabama Power lands and within the project boundary.

2. Land Parcels

181. Alabama Power proposes to add 364 acres to the project boundary. These lands consist of: (1) 235 acres downstream from the Logan Martin dam (Lay Lake) that may be inundated during high flow events; (2) 120 acres about 0.5 mile downstream from the Jordan dam for two barrier-free hunting facilities (Section 10.0, Wildlife Management Plan); and (3) 9 acres downstream from the Jordan dam for recreational use. Alabama Power also proposes to remove 285.5 acres from the project boundary to either correct a mapping error or to remove lands that originally were used during project construction and are no longer needed for project purposes. These lands consist of: (1) 216 acres near the Weiss development power canal (the lands have been leased to a landscape nursery); (2) 61 acres downstream from the Jordan dam; (3) 3.5 acres at the Weiss development; (4) 3 acres at the Mitchell development; and (5) 2 acres at the Bouldin development.¹⁷⁴

182. In the EA,¹⁷⁵ staff recommended approving Alabama Power's proposed project boundary modifications. Article 203, *Exhibit G Drawings*, therefore, requires Alabama Power to file revised Exhibit G drawings that clearly identify the project boundary and project facilities within the project boundary.

¹⁷³ See *Consumers Energy Company*, 130 FERC ¶ 62,052, at P 51 (2010).

¹⁷⁴ See Alabama Power Company's filing of May 6, 2009.

¹⁷⁵ See EA at 243-44.

L. Shoreline Management Plan

183. Alabama Power proposes to implement its Shoreline Management Plan.¹⁷⁶ The plan would guide shoreline management and permitting activities at each of the developments and consists of the following components, which are explained below: (1) shoreline classification system maps; (2) shoreline compliance; (3) public education and outreach; and (4) exotic species and aquatic plant management.

184. Interior recommends that the Shoreline Management Plan include a provision that allows Interior to evaluate any proposed permitting that may affect lands classified by Alabama Power as Sensitive Resources Lands,¹⁷⁷ particularly lands that support federally listed species. Interior also recommends the Shoreline Management Plan be revised periodically to take into account the listing of new federal species and/or designation of critical habitat.

185. In the EA,¹⁷⁸ staff recommended modifying the Shoreline Management Plan to allow Interior to review permitting activities on lands supporting federally listed species to ensure that the species are protected. Interior's review of permitting activities on the Sensitive Resources Lands Classification would ensure that current federal listing of species and/or critical habitat is considered. Article 414, *Shoreline Management Plan*, modifies the Shoreline Management Plan accordingly.

186. Upon review of the FWS' final BO, the Shoreline Management Plan should be revised to: (1) incorporate the FWS' Term and Condition (Action 2), which requires Alabama Power to implement its Shoreline Management Plan with certain modifications; (2) include the FWS' Conservation Recommendation, which provides for an evaluation matrix for Sensitive Resources Lands Classification; and (3) include individual maps that identify the modified Coosa River Project boundary, as discussed *infra*. Accordingly, Article 414, *Shoreline Management Plan*, requires Alabama Power to revise and file a Shoreline Management Plan to include the requisite measures of FWS' BO.

¹⁷⁶ See Volume 6 of Alabama Power's license application, filed July 28, 2005.

¹⁷⁷ In the Shoreline Management Plan, Sensitive Resources Lands are identified as project lands managed for the protection and enhancement of threatened and endangered species, historic properties, wetlands, and significant scenic areas.

¹⁷⁸ See EA at 245 and 253.

187. Furthermore, in the EA,¹⁷⁹ staff determined, and we agree, that a review and update of the Shoreline Management Plan every six years would be reasonable. The review is intended to examine whether or not implementation of the approved Shoreline Management Plan is effectively meeting the goals and objectives of the plan and whether or not any changes are needed. Article 414, *Shoreline Management Plan*, requires this measure.

1. Shoreline Classification System Maps

188. Alabama Power's Shoreline Management Plan includes shoreline classification system maps for each of the seven developments at the project. However, the maps are outdated (2005) and do not account for changes in the project boundary. Therefore, Article 414, *Shoreline Management Plan*, requires Alabama Power to file updated shoreline classification system maps as part of its Shoreline Management Plan.

2. Shoreline Compliance Program

189. Alabama Power proposes to continue implementing its Shoreline Compliance Program to manage development of non-project use of project lands, and thereby protect the scenic, recreational, and environmental resources at the project. Under this program, it will continue to monitor project property to ensure that no unauthorized uses occur within the project boundary and to resolve any issues that may arise with respect to unauthorized structures. Article 414, *Shoreline Management Plan*, accordingly requires Alabama Power to develop a permitting program for allowable facilities and/or uses of the project shorelines and measures to address unpermitted structures.

3. Public Education and Outreach Program

190. Alabama Power proposes to continue implementing its public education and outreach program.¹⁸⁰ In the EA,¹⁸¹ staff concluded such a program would inform the public about the project, and the purposes and requirements of the Shoreline Management Plan, as well as BMPs for protecting the shoreline. However, some elements of the program lack specificity. Article 414, *Shoreline Management Plan*, requires Alabama

¹⁷⁹ See EA at 245.

¹⁸⁰ See Section 5.1 of the Shoreline Management Plan included in Alabama Power's July 28, 2005 license application.

¹⁸¹ See EA at 190-92.

Power to describe in detail its public education and outreach program, as part of the revised Shoreline Management Plan.

M. Invasive Species Management Plan

191. Alabama Power proposes to implement its Exotic Species and Aquatic Plant Management Program.¹⁸² In the EA,¹⁸³ staff found such a program would be beneficial. However, the program includes measures that would be implemented at both the Coosa River Project and the Warrior River Project No. 2165,¹⁸⁴ and is based on outdated data (from 1998 to 2002). To facilitate the Commission's administration of the license, Article 416, *Invasive Species Management Plan*, requires Alabama Power to develop and implement an Invasive Species Management Plan that uses updated information and specifically pertains to the Coosa River Project.

N. Erosion Repair and Monitoring Plan

192. Alabama Power proposes to implement its Coosa-Warrior Projects Erosion Repair and Monitoring Plan.¹⁸⁵ The plan includes: (1) the repair and monitoring of 12 active erosion sites at the Neely Henry, Logan Martin, Lay, and Bouldin developments; and (2) a report that summarizes the results of the first 3-year monitoring period. Alabama Rivers recommends that Alabama Power file a plan that includes provisions for: (1) identifying erosion sites; (2) monitoring and repairing erosion sites, including outlining the monitoring cycle and decision-making process for determining appropriate remedial measures; and (3) reporting on the success of any implemented remedial measures. Alabama Rivers' recommendations also include the specific criteria for determining success of the measures implemented and an implementation schedule.

193. As discussed in the EA,¹⁸⁶ shoreline erosion occurs at various sites at the project developments. In the EA,¹⁸⁷ staff found that Alabama Power's proposed plan would

¹⁸² See Appendix E to the Shoreline Management Plan filed by Alabama Power with its license application on July 28, 2005.

¹⁸³ See EA at 238-39.

¹⁸⁴ *Alabama Power Co.*, 130 FERC ¶ 62,271 (2010).

¹⁸⁵ See Volume 4 of Alabama Power's license application, filed July 28, 2005.

¹⁸⁶ See EA at 88-90.

ensure that erosion resulting from project operation would be adequately monitored and remediated, and, therefore, recommended adopting the plan. The plan is enforceable because it includes specific measures. However, the plan includes measures that would be implemented at both the Coosa River Project and the Warrior River Project No. 2165. To facilitate the Commission's administration of the license, Article 415, *Erosion Repair and Monitoring Plan*, requires Alabama Power to file, with updates, an erosion plan that includes only measures to be implemented at the Coosa River Project.

194. With regard to Alabama Rivers' recommendations, many of the measures are already incorporated in Alabama Power's plan. However, Alabama Power's plan does not clearly explain how it will decide what measures will be implemented, or where or how it will determine if the measures are successful. Including these elements would improve the effectiveness of the plan and help ensure successful implementation. Therefore, Article 415, *Erosion Repair and Monitoring Plan*, requires Alabama Power to file an erosion plan with these additions.

195. Conservation Groups assert that the EA does not provide specific analysis of how existing project operation is contributing to erosion at project sites.¹⁸⁸ Accordingly, Conservation Groups argue that there is no basis for finding that the proposed Erosion Repair and Monitoring Plan will mitigate project impacts on erosion. We disagree. The recommended monitoring program for the existing erosion sites would provide a mechanism for identifying which sites should be repaired now versus those that can be remediated at a later date.¹⁸⁹ As part of the effort, Alabama Power would identify the type of erosion occurring and design measures accordingly. Moreover, Article 415, *Erosion Repair and Monitoring Plan*, requires Alabama Power to develop and implement an erosion plan that includes provisions to: (1) identify, remediate, and monitor erosion sites; (2) develop a decision-making process; and (3) outline criteria for determining the success of implemented measures.

¹⁸⁷ See EA at 224 and 225.

¹⁸⁸ Conservation Groups July 8, 2010 Comments at 27. Conservation Groups also assert that the EA does not address recommendations that the plan be prepared in consultation with resource agencies. Article 415, *Erosion Repair and Monitoring Plan*, requires Alabama Power to consult with Alabama DEM, Alabama DCNR, and FWS, among others.

¹⁸⁹ See EA at B-7.

Compliance With The National Environmental Policy Act (NEPA)

196. The draft and final EAs for the proposed Coosa River Project analyzed the potential impacts to aquatic resources, terrestrial resources, threatened and endangered species, recreation, land use and aesthetics, cultural resources, and cumulative impacts. In addition to Alabama Power's proposal, staff considered two alternatives: (1) Alabama Power's proposal with staff modifications; and (2) the no-action alternative, meaning the project would continue to operate under the terms and conditions of the current license, and no new environmental measures would be implemented.¹⁹⁰ The EA considered other alternatives, including issuing a non-power license, federal government takeover of the project, and retiring the project, but eliminated them from further analysis because they did not meet the purpose and need of the proposed action.¹⁹¹

197. As described in the EA, continued operation of the Coosa River Project, with its recommended measures, would involve no land-disturbing or land clearing activities other than minor disturbances associated with recreational enhancements. As relevant here, the EA found that the recommended measures would: (1) ensure adequate water quality; (2) increase riverine habitat in the Weiss bypassed reach; (3) improve recreational opportunities at the project; and (4) maintain riparian conditions and recreational opportunities downstream of the project.

198. Staff also found that project operation and the associated fish entrained through the project's turbines would result in some minor, long-term effects on resident fish in the Coosa River. Staff determined that, although project operation would also result in some occasional times of low DO in various parts of the Coosa River, implementation of DO enhancement measures would minimize this impact.¹⁹² Based on these findings, staff found that issuance of a license for the Coosa River Project, with staff's recommended environmental measures, would not constitute a major federal action significantly affecting the quality of the human environment.¹⁹³

199. On July 8, 2010, Conservation Groups filed comments challenging the adequacy of the EA, and asserting that an EIS should have been prepared. On November 5, 2012,

¹⁹⁰ See EA at 15-49.

¹⁹¹ See EA at 49-50.

¹⁹² See EA at 256.

¹⁹³ *Id.*

Alabama Rivers filed comments on the EA, based on what it deems deficiencies in FWS' June 10, 2012 final Biological Opinion.

A. Adequacy of the EA

200. Conservation Groups claim that the EA failed “to provide a convincing reason why an EIS was not prepared,” and that its finding of no significant impacts (FONSI) is based on a “conclusory statement” that “the issuance of a license would not constitute a major federal action significantly affecting the quality of the human environment.”¹⁹⁴

201. The statement to which Conservation Groups cites sets forth a finding based on the extensive analysis set forth in the EA. As the Commission recently noted, an EA’s FONSI “need not repeat any of the discussion in the assessment, but may incorporate it by reference.”¹⁹⁵

202. Conservation Groups also assert that the FONSI is not supported by substantial evidence. They first assert that the EA’s findings are based on what they deem an inappropriate reliance on documents submitted by the licensee and others. As an example, Conservation Groups cite to Table 4-1 in the EA, which summarizes the assumptions and economic information Alabama Power submitted in its license application for considering the economic parameters of the project. Conservation Groups argue that the EA does not explain why such economic “evidence cited is reliable or probative.”¹⁹⁶

203. Although it is unclear precisely what Conservation Groups concerns are, to the extent they suggest that staff did not sufficiently vet or review the reliability of the licensee’s information, this is not correct. As it does for all components of a license

¹⁹⁴ Conservation Groups July 8, 2010 Comments at 5 (citing to EA at 256).

¹⁹⁵ *Alabama Power Company*, 141 FERC ¶ 61,127, at n.106 (2012) (citing Council on Environmental Quality’s regulations at 40 C.F.R. § 1508.13 (2012)).

¹⁹⁶ Conservation Groups July 8, 2010 Comments at 8. They also appear to use Table 4-1 as an example of what they deem staff’s reliance on “whole documents in support of its findings” without providing “specific citations.” Conservation Groups argue that this “obliges an objecting party to infer which part was relied on....” However, Table 4-1 contains footnotes, which set forth the precise page number in the licensee’s July 5, 2005 license application where the cited information can be found.

application, staff independently reviewed the information provided. As explained in detail in the EA,¹⁹⁷ pursuant to an April 21, 2006 staff request for additional information, Alabama Power provided an explanation of how it evaluated the power value of its proposal, the no action alternative, and costs of flow release alternatives submitted by Conservation Groups. The EA notes that staff reviewed Alabama Power's explanation, accepted it as reasonable, and applied a comparable value to the power values associated with the Conservation Groups' minimum flow/ramping proposal.

204. Moreover, section 4-1 of the EA clearly explains that the information in Table 4-1 provides the parameters for the economic analysis of the Coosa River Project, and why such information is important.¹⁹⁸

205. Conservation Groups next claim that the EA cites to "disputed evidence without explanation." As an example, they assert that the EA disregarded Conservation Groups' expert evidence that shows that existing minimum flows downstream from the Jordan dam are very low and not adequately protective of the aquatic community, and that higher flows would better mitigate project impacts in that area.¹⁹⁹

206. Staff explained in the EA that, although it is unclear in Conservation Groups' alternative minimum flow recommendations at what point in the basin the percent of annual flow would be measured, assuming it is at the Mayo's Bar gage, Conservation Groups' approximate recommended flows would be in the same range as shown in Table 3-9 of the EA, that is, from 1,969 to 3,922 cfs, which is a similar range of flows to the current and proposed releases from the Jordan dam.²⁰⁰ Thus, the higher minimum flows recommended by Conservation Groups appear to be in the same range as, and not

¹⁹⁷ See EA at B-8.

¹⁹⁸ See EA at 200-01. Conservation Groups also argue that the EA "repeatedly cites to the [license application] exhibits without acknowledging that, as applicant, Alabama Power has the burden of proof on disputed factual issues." Conservation Groups do not explain to which "disputed factual issues" it refers, or why the burden of proof would fall on Alabama Power. Conservation Groups only cite for support, with no explanation, 5 U.S.C. § 556(d), which is the provision in the Administrative Procedure Act pertaining to the burden of proof for the proponent of a rule or order.

¹⁹⁹ Conservation Groups July 8, 2010 Comments at 9.

²⁰⁰ See EA at 96-97.

significantly different from, the flows proposed by Alabama Power and required by the license.

207. Conservation Groups allege there are information gaps in the record which cannot be filled with staff assumptions. They cite, as an example, the EA's references to the lack of habitat data as a basis for not evaluating alternative minimum flow schedules, and relying instead on a recommendation that Alabama Power implement an adaptive management approach for variable continuous minimum flows. Conservation Groups state that it submitted expert opinion that obtaining qualitative analyses of alternative flow regimes would not pose an unreasonable burden for Alabama Power or staff, and questions why the EA fails to explain why there was no recommendation that the licensee gather this data.²⁰¹

208. As staff explained in the EA,²⁰² Alabama Power and the state and federal resource agencies agreed, during pre-application consultations, that an adaptive management approach was appropriate in determining flows to be released from the Weiss dam. Under this approach, Alabama Power will provide an initial minimum flow in the Weiss bypassed reach and then study the effects of that flow, with the potential for adjustment of that flow, depending on the study results. This method would use actual empirical data to determine an appropriate minimum flow, while instream flow methods that generate quantitative habitat data, such as the IFIM requested by Alabama Rivers, use modeling to generate predictions of potential habitat under a range of flows. Both approaches are acceptable, so use of an adaptive management approach that generates empirical data is reasonable .

209. In a similar vein, Conservation Groups challenge the EA's reliance on post-licensing studies and plans to resolve issues such as instream flow for aquatic life under the new license. Citing *Confederated Tribes and Bands of Yakima Indian Nations v. FERC*²⁰³ in support of its position, it contends that the Commission must consider all issues relevant to the public interest prior to relicensing.

²⁰¹ Conservation Groups July 8, 2010 Comments at 10.

²⁰² See EA at B-11.

²⁰³ 746 F.2d 466 (9th Cir. 1984) (*Yakima*).

210. The Commission addressed the identical argument recently in *Alabama Power Company*.²⁰⁴ There, it explained that *Yakima* does not require the Commission to have perfect information before it acts.²⁰⁵ The test is whether, given uncertainty, the Commission's action meets the standard for judicial review, which requires that the Commission's decision be supported by substantial evidence.²⁰⁶ As the court found in *United States Department of the Interior v. FERC*:²⁰⁷

Yakima at most imposes on the Commission the duty to consider and study the environmental issue before granting a license. *Yakima* does not require any heightened degree of certainty for environmental facts, nor does it imply that all environmental concerns must be definitively resolved before a license is issued. Read this way, *Yakima* simply endorses the unstartling principles that an agency must establish a record to support its decisions and that a reviewing court, without substituting its own judgment, must be certain that the agency has considered all factors required by the statute.

211. It is not possible, as Conservation Groups contend staff must do, to precisely identify and quantify how the new license will impact specific project resources over the next several decades. Nevertheless, the consultation procedures included in the management plans required by this license allow for adjustments to adapt to unforeseen conditions or new technology. Moreover, the Commission reserves in this license, as it does for all licenses, the authority to reopen the license to address resource issues that may arise through the term of the license.²⁰⁸

212. Finally, Conservation Groups assert that the EA did not consider a reasonable range of "alternatives" that they and other entities proposed, such as: alternative minimum flow schedules for the project developments; alternatives to the proposed water quality monitoring protocols; and alternatives for biological monitoring, fish passage,

²⁰⁴ *Alabama Power Company*, 141 FERC ¶ 61,127 at P 23.

²⁰⁵ See, e.g., *Idaho Power Co.*, 108 FERC ¶ 61,129, at P 41 (2004), *reh'g denied*, 110 FERC ¶ 61,242 (2005), *aff'd Idaho Rivers United v. FERC*, 189 Fed. Appx. 629, 2006 U.S. App. Lexis 17566 (9th Cir. 2006).

²⁰⁶ *Id.*

²⁰⁷ 952 F.2d 538, 546 (D.C. Cir. 1992).

²⁰⁸ See *California v. FPC*, 345 F.2d 917, 925 (9th Cir. 1965).

erosion and sedimentation monitoring and erosion repair, and recreation management. Conservation Groups contend that, in declining to consider these alternatives, staff erroneously concluded that the obligation to consider a reasonable range of alternatives is limited to alternatives that correspond to all elements of the license applicant's proposal.²⁰⁹

213. As the Commission recently explained in *Alabama Power Company*, section 102(2)(E) of NEPA requires agencies to take a "hard look" at the potential environmental consequences of their proposed actions.²¹⁰ However, in carrying out their NEPA responsibilities, agencies are governed by a rule of reason.²¹¹ The range of alternatives that must be considered is a matter within an agency's discretion.²¹² The discussion of alternatives need not be exhaustive and need only provide sufficient information to permit a reasoned choice of alternatives, i.e., "reasonable" alternatives.²¹³ There is no requirement to examine each proposed mitigation or enhancement measure (or groups of such measures submitted by an entity) as a separate alternative or alternatives.²¹⁴

214. The EA discussed Conservation Groups' recommendations, comments, and proposed alternative measures as they applied to the particular resources at issue. To the extent the EA did not specifically include in the staff alternative certain measures that Conservation Groups and others recommended, it discussed the reasons for not adopting

²⁰⁹ Conservation Groups July 8, 2010 Comments at 70.

²¹⁰ *Alabama Power Company*, 141 FERC ¶ 61,127 at P 80 (citing *Committee for Auto Responsibility v. Solomon*, 603 F.2d 992, 1002 (D.C. Cir. 1979), *cert. denied*, 445 U.S.915 (1980)).

²¹¹ *Natural Resources Defense Council v. Morton*, 458 F.2d 827, 837 (D.C. Cir. 1972).

²¹² *Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 551-52 (1976).

²¹³ See section 102(2)(C)(iii) of NEPA, 42 U.S.C. § 4332(2)(C)(iii) (2006); and *North Carolina v. FPC*, 533 F.2d 702, 707 (D.C. Cir. 1976) (citing *NRDC v. Morton*, 485 F.2d 827 (D.C. Cir. 1972)).

²¹⁴ *Idaho Power Co.*, 110 FERC ¶ 61,242 at PP 80-85.

those recommendations.²¹⁵ Accordingly, the analytical approach taken in the EA, which is the same approach that the Commission has employed for decades, considered a reasonable range of alternatives and enabled staff to make informed recommendations concerning the relicensing of the Coosa River Project.²¹⁶

B. Need for an EIS

215. Conservation Groups assert that relicensing the Coosa River Project will significantly affect the quality of the human environment and that, therefore, under NEPA's²¹⁷ requirements, an EIS rather than an EA was required.²¹⁸ Conservation Groups contend that pursuant to the Council on Environmental Quality's (CEQ)

²¹⁵ *See, e.g.*, discussion of why EA did not recommend adopting Conservation Groups' proposed plans for: monitoring erosion and sedimentation within the project boundary for the term of the license (*see* EA at 89-90); fish passage feasibility (*see* EA at 102); monitoring water quality beyond three years required by water quality certificate (*see* EA at 87); and monitoring measures associated with their recommended recreation management plan, including performance standards for the conditions of the facilities, and monitoring use over the term of the new license (*See* EA at 156-57).

²¹⁶ As noted above, on November 5, 2012, Alabama Rivers filed comments on the final BO, which included additional comments on the EA. They assert that an EIS is required based on what they argue are deficiencies in the BO. Specifically, they assert that the BO "shows that the proposed action will likely result in take and adverse habitat modification." As discussed above, reliance on FWS' BO is appropriate, and Conservation Groups did not provide new information to warrant reconsideration of the validity of the BO's conclusions. Moreover, a number of issues Alabama Rivers raises in its November 5, 2012 comments were also raised in Conservation Groups July 8, 2010 comments, and are addressed elsewhere in this order.

²¹⁷ 42 U.S.C. §§ 4321-4370(f) (2006).

²¹⁸ Conservation Groups assert that they have twice moved that the Commission prepare an EIS and provide other specific relief: first, as part of their May 6, 2009 comments on the draft EA; and second, in their July 8, 2010 comments. Alabama Rivers' November 9, 2012 comments assert that the "Commission has not ruled on our motion or otherwise responded to our request to date." The EA at B-5 explains why an EIS was not prepared; this order addresses Conservation Groups' July 8, 2010 comments.

regulations implementing NEPA, staff failed to consider the intensity of the proposed relicensing when deciding to prepare an EA.

216. The test for determining the need for an EIS is whether an action will have a significant impact on the quality of the human environment.²¹⁹ To that end, staff prepared an EA to assist in determining whether to prepare an EIS.²²⁰ In relicensing proceedings, the Commission uses existing environmental conditions (i.e., continued project operation under the existing license) as a baseline against which to evaluate the potential environmental impacts of an applicant's proposal and other reasonable alternatives.²²¹

217. As explained in more detail above, in the EA, staff thoroughly considered the potential impacts of relicensing the project on all of the resources cited by Conservation Groups, including impacts to water quality, erosion and sedimentation, aquatic species, threatened and endangered species, wildlife, and recreation. Although staff identified potential ongoing impacts to some resources, it identified no impacts as significant.

218. The Conservation Groups are mistaken that, under the CEQ regulations, an EIS was required. The CEQ regulations state that determinations of whether a project will have significant impacts on the environment depend on both "context" and "intensity of the impacts."²²² With respect to intensity, the regulations set forth 10 factors agencies should consider, including nine cited by Conservation Groups: (1) impacts that may be both beneficial and adverse; (2) unique characteristics of the geographic area; (3) the degree to which the proposed action's effects on the environment are highly controversial; (4) the degree to which the potential effects are highly uncertain or involve unique or unknown risks; (5) the degree to which the action may establish a precedent for future actions with significant effects; (6) whether the action is related to other actions with individually insignificant but cumulatively significant impacts on the environment, such as other activities in the Alabama-Coosa-Tallapoosa Basin; (7) impacts to significant scientific, cultural or historical resources; (8) impacts to listed species and their critical habitats; and (9) whether the proposed action threatens a violation of federal

²¹⁹ 42 U.S.C. § 4332(2)(c) (2006).

²²⁰ 40 C.F.R. § 1501.4(c) (2012).

²²¹ *See Alabama Power Company*, 141 FERC ¶ 61,127.

²²² 40 C.F.R. § 1508.27(b) (2011).

and state law requirements for protection of the environment.²²³ As discussed in more detail below, we have reviewed these factors and find that, contrary to Conservation Groups assertions, none of these factors require preparation of an EIS in this case.

a. Minor Impacts both beneficial and adverse

219. Conservation Groups argue that impacts to water quality, soils, aquatic species, wildlife, and recreation may have a number of adverse impacts, however “the true extent ... is difficult to determine due to the incomplete information provided in the final EA.”²²⁴ As explained above, staff sufficiently examined the potential impacts of relicensing the project on each of the targeted resources in the EA. Although staff identified potential ongoing impacts to some resources, it identified no impacts as significant.²²⁵ Moreover, to the extent Conservation Groups assert that there is incomplete information, as also explained above, the Commission is not required to have perfect information before it acts, nor is it required or expected to resolve all inconsistencies between information that is submitted.

b. Geographic Area

220. Conservation Groups state that the extraordinary biodiversity of the Coosa River Basin demonstrates that the project is located in a unique geographic area that warrants preparation of an EIS. We disagree. The EA appropriately considered the geographic area, stating that the

²²³ *Id.* at 40 C.F.R. §§ 1508.27(b)(1) and (b)(3)-(9).

²²⁴ Conservation Groups July 8, 2010 Comments at 19-41.

²²⁵ For example, Conservation Groups argue that the EA does not explain why project-specific entrainment studies were not performed, given that the EA states that Alabama Power estimated the annual mortality to be about 1.3 million fish at the project’s developments. However, the EA explains that this loss is consistent with published literature where field studies have been conducted showing that most of the fish entrained were juvenile life stages and smaller species such as minnows. These life stages and species often experience high natural mortality in populations unaffected by hydropower operation. As relevant here, the Coosa River Project supports sport and/or commercial fisheries, and do not appear substantially affected by turbine mortality under its current license or as proposed for relicensing. *See* EA at 67-70 and 101-02.

Coosa River Basin supports rich and diverse assemblages of aquatic species, with 147 species of fish. Additionally, it supports the most diverse collection of freshwater mollusks in the world.²²⁶

As explained in the EA and this order, however, relicensing the Coosa River Project will not have significant impacts to the biodiversity of the Coosa River Basin. Indeed, the relevant CEQ regulation provides that, in the context of determining whether an EIS is required, “intensity...refers to the *severity*” of the impact.²²⁷ Thus, the regulation requires an agency to consider whether adverse effects are sufficiently severe to require preparation of an EIS. Staff appropriately considered the geographic area, and rightly concluded that there would be no significant impacts to the Coosa River Basin from relicensing the project.

c. **Potential Effects on the Environment are Not Highly Controversial**

221. Conservation Groups assert that the Coosa River Project is highly controversial, in part because of issues related to interstate water allocation and inter-basin allocation of flows between the Tallapoosa and Coosa river system. Conservation Groups cite to Georgia DNR’s objection to Alabama Power’s operation of the project during drought conditions.²²⁸

222. For an action to qualify as “highly controversial” for NEPA purposes, there must be a “dispute over the size, nature, or effect of the action, rather than the existence of opposition to it.”²²⁹ Accordingly, a “controversy” does not exist merely because individuals or groups oppose, or have raised questions about, an action. While legitimate concerns have been raised in this proceeding, they have been addressed and resolved through pre-filing consultation, scoping meetings, and extensive comments and other filings from all parties.

²²⁶ See EA at 51.

²²⁷ See 40 C.F.R. § 1508.27(b) (‘Significantly’ as used in NEPA requires considerations of both context and intensity: (b) *Intensity*. This refers to the severity of impact...).

²²⁸ See EA at 43.

²²⁹ See, e.g., *Central New York Oil and Gas Company, LLC*, 137 FERC ¶ 61,121, at P 115 (2011).

d. Project Establishes No Precedent for Future Actions

223. Conservation Groups state that this relicensing proceeding may establish a precedent for future actions, including future proposed relicensing proceedings involving Alabama Power. However, an EA is a non-binding document and creates no precedent to which the Commission is bound. Moreover, every relicensing proceeding is unique and has different impacts on different resources. In determining whether to prepare an EIS or an EA, staff relies upon the Commission's regulations and makes an individual determination for each proposal.

e. Project is Not Related to Other Actions with Cumulatively Significant Impacts

224. Conservation Groups assert that the EA's cumulative impact analysis is deficient primarily because it does not forecast potential changes in operations at other facilities or provide findings regarding the conditions of flow and biological resources 30 to 50 years after issuance of a new license.²³⁰ Conservation Groups also disagree with the cumulative impact analysis for failing to consider the effects of climate change on project operations.

225. As the Commission recently explained, NEPA does not require the precision Conservation Groups seek in our NEPA analyses. The adequacy of an EA (or an EIS) is determined by a "rule of reason," which requires only a "reasonably thorough discussion of the significant aspects of the probable environmental consequences."²³¹ Attempting to predict future flow scenarios that may occur due to climate change or other conditions would be too speculative given the state of the science at this time.

226. Moreover, the Commission's obligation under FPA section 10(a)(1) continues throughout the term of the license.²³² To this end, we include in licenses a number of conditions that reserve the Commission's authority to order changes to project facilities or operations in the future, as circumstances may warrant.

²³⁰ Conservation Groups July 8, 2010 Comments at 44.

²³¹ *Alabama Power Company*, 141 FERC ¶ 61,127 at P 84.

²³² *See, e.g., S.D. Warren Co.*, 68 FERC ¶ 61,213, at 62,022 (1994).

f. **Insignificant Impact to Scientific, Cultural, or Historical Resources**

227. The EA acknowledges that the project may affect cultural resources, but finds that implementation of Alabama Power's HPMP would sufficiently protect historic properties, as well as undiscovered archaeological sites should any be identified during the new license term.²³³ Conservation Groups argue that the EA does not explain how the HPMP will be adequate to mitigate any such potential impacts to the point of insignificance.

228. As discussed in this order, staff executed a PA with the Alabama SHPO and the Georgia SHPO to facilitate compliance with section 106 of the NHPA. The PA requires Alabama Power to implement the HPMP for the term of the new license. As explained in the EA,²³⁴ in the event that a project-related activity cannot be modified to avoid an adverse effect on an historic property within the project's area of potential effects, Alabama Power will consult with the Alabama SHPO, the Georgia SHPO, and other interested parties, as provided for under the HPMP, to define appropriate mitigation measures.²³⁵

g. **Listed Species and Their Critical Habitat are Adequately Protected**

229. Conservation Groups take issue with the EA's conclusion that formal consultation is not necessary for some species. They add that the EA's use of the existing conditions for establishing baseline conditions is improper for purposes of the analysis on threatened and endangered species. Rather, Conservation Groups assert that the EA should have analyzed impacts to threatened and endangered species using the baseline as set forth in the ESA and its implementing regulations, and that the BA's use of a "marginal benefit analysis," is inconsistent with the ESA's recovery standard.²³⁶

²³³ Conservation Groups July 8, 2010 Comments at 52 (citing to EA at 199).

²³⁴ *See* EA at 246.

²³⁵ *Id.*

²³⁶ Conservation Groups July 8, 2010 Comments at 64-67. They cite in part to the ESA regulations which define baseline for ESA purposes as "the past and present impacts of all Federal, State or private actions, and other human activities in the action area, the

230. The revised BA was issued more than a year after Conservation Groups filed their July 8, 2010 comments on the EA. Accordingly, the BA, which provided additional information and resulted in a request for formal consultation for additional species, may resolve or address many of Conservation Groups' concerns with respect to the EA's consideration of threatened and endangered species issues.²³⁷ Nonetheless, the Conservation Groups are mistaken. Contrary to their assertions, the EA properly relied on a baseline that includes existing environmental conditions.

231. In relicensing proceedings, the Commission uses existing environmental conditions (i.e., continued project operation under the existing license) as a baseline against which to evaluate the environmental impacts of an applicant's proposal and other reasonable alternatives. This longstanding practice has been upheld by the courts, and Conservation Groups provide no persuasive arguments for changing this practice.²³⁸

anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process." 50 C.F.R. § 402.02.

²³⁷ Alabama Rivers November 9, 2012 Comments at 22-23 assert that because staff's BA, which was issued after the final EA, changed the EA's "not likely to adversely affect" findings for several species to "likely to adversely affect," the EA should be supplemented "to evaluate the adverse effects it now considers to be likely or consider alternatives to mitigate those impacts." However, the BA was a comprehensive analysis considered as part of formal consultation under ESA. Because the BO's conclusions do not alter a finding of no significant impact, supplementing the EA would result in a meaningless exercise of form over substance.

²³⁸ See *American Rivers v. FERC*, 201 F.3d 1186, 1195-96 (9th Cir. 2000) (affirmed Commission's existing environmental conditions baseline as consistent with "the substantive and procedural requirements of both the FPA and NEPA"); see also *Conservation Law Foundation v. FERC*, 216 F.3d 41, 46-47 (D.C. Cir. 2000) (court denied petitioners' argument that including existing conditions in the baseline caused the Commission to ignore continuing impacts directly attributable to the new license, and held that use of an existing condition baseline was a reasonable construction of the FPA's 10(j) requirements for protection of fish and wildlife).

h. Project Does Not Threaten Violation of Federal and State Law

232. Conservation Groups assert that the EA does not demonstrate that the relicensing of the Coosa River Project will comply with all of the state of Alabama's water quality standards, and that Alabama Power did not provide sufficient water quality data and analysis to Alabama DEM. We disagree. As discussed above, Alabama DEM requires that Alabama Power implement measures to assure compliance with Alabama's DO standards. There is no evidence to suggest that other water quality parameters are not being met. More to the point, Alabama DEM, the agency responsible for administering the state's water quality program and issuing the water quality certification, found no reason to require compliance with other water quality parameters.

Administrative Provisions

A. Annual Charges

233. The Commission collects annual charges from licensees for administration of the FPA. Article 201, *Administrative Annual Charges*, provides for the collection of funds for administration of the FPA and use and occupancy of United States lands.

B. Exhibit F and G Drawings

234. The Commission requires licensees to file sets of approved project drawings on microfilm and in electronic file format. Article 202, *Exhibit F Drawings*, requires the filing of these drawings.

235. The Exhibit G drawings filed with the license application do not enclose and show all the project recreation facilities required in the license within the project boundary. The Exhibit G drawings must show all approved project features; therefore, the project boundary drawings are not approved. Article 203, *Exhibit G Drawings*, requires Alabama Power to file revised Exhibit G drawings pursuant to §§ 4.39 and 4.41 of the Commission's regulations.

C. Amortization Reserve

236. The Commission requires licensees for new major licenses to set up and maintain an amortization reserve account upon license issuance. Article 204, *Amortization Reserve*, requires the establishment of the account.

D. Headwater Benefits

237. Some projects directly benefit from headwater improvements that were constructed by other licensees, the United States, or permittees. Article 205, *Headwater Benefits*, requires the licensee to reimburse such entities for these benefits if they were not previously assessed and reimbursed.

E. Review of Final Plans and Specifications

238. Article 301 requires the licensee to provide the Commission's Division of Dam Safety and Inspections (D2SI) Atlanta Regional Office with final contract drawings and specifications, together with a supporting design report, consistent with the Commission's engineering guidelines. The submittal shall include a temporary construction emergency action plan, a quality control and inspection program, and a soil erosion and sediment control plan.

239. Where new construction or modifications to the project are involved, the Commission requires the licensee to file revised drawings of project features as built. Article 302 provides for the filing of these drawings.

240. Where project modifications are proposed, as a result of environmental requirements, the Commission requires licensees to file a plan and schedule of any proposed modification to project operation or to the water retaining and/or conveyance features of the project. Article 303 provides for the filing of this plan and schedule.

F. Use and Occupancy of Project Lands and Waters

241. Requiring a licensee to obtain prior Commission approval for every use or occupancy of project land would be unduly burdensome. Therefore, Article 419, *Use and Occupancy*, allows the licensee to grant permission, without prior Commission approval, for the use and occupancy of project lands for such minor activities as landscape planting. Such uses must be consistent with the purposes of protecting and enhancing the scenic, recreational, and environmental values of the project.

State and Federal Comprehensive Plans

242. Section 10(a)(2)(A) of the FPA²³⁹ requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving,

²³⁹ 16 U.S.C. § 803(a)(2)(A) (2006).

developing, or conserving a waterway or waterways affected by the project.²⁴⁰ Under section 10(a)(2)(A), federal and state agencies filed 42 comprehensive plans that address various resources in Alabama and Georgia. Of these, the staff identified and reviewed 14 comprehensive plans that are relevant to this project.²⁴¹ No conflicts were found.

Applicant's Plans and Capabilities

243. In accordance with sections 10(a)(2)(C) and 15(a) of the FPA,²⁴² Commission staff evaluated Alabama Power's record as a licensee for these areas: (A) conservation efforts; (B) compliance history and ability to comply with the new license; (C) safe management, operation, and maintenance of the project; (D) ability to provide efficient and reliable electric service; (E) need for power; (F) transmission services; (G) cost effectiveness of plans; and (H) actions affecting the public. We accept the staff's findings in each of the following areas.

A. Conservation Efforts

244. Section 10(a)(2)(C) of the FPA requires the Commission to consider the extent of any electricity consumption efficiency improvement programs for license applicants primarily engaged in the generation or sale of electric power, like Alabama Power.

²⁴⁰ Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (2012).

²⁴¹ The list of applicable plans can be found in section 5.4 of the EA for the project. In its July 8, 2010 comments, Conservation Groups assert that the Commission did not respond to requests to include: (1) *Recovery Plan for Six Mobile River Basin Aquatic Snails*; (2) *Alabama Statewide Comprehensive Outdoor Recreation Plan* (SCORP); (3) *Conserving Alabama's Wildlife: A comprehensive Strategy*; and (4) *State of Alabama Water Improvement Advisory commission, Studies of Pollution in Streams of Alabama*. Staff responded to these requests in footnote 58, in section 5.4 of the EA, as well as staff letters issued June 15, 2009 and November 17, 2010. In the letters, staff stated that the Alabama SCORP was listed as a Commission-approved comprehensive plan and the other three documents were not accepted as comprehensive plans because they were not filed by a qualifying agency, as required by section 10(a)(2)(A) of the FPA. See <http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=12488731> and <http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=12488780>.

²⁴² 16 U.S.C. §§ 803(a)(2)(C) and 808(a) (2006).

245. Alabama Power has provided conservation services for its electricity customers since 1979. Alabama Power has several programs to promote conservation and energy efficiency for residential, commercial, industrial, and agricultural customers. Alabama Power: (a) provides the public with seasonal energy saving tips through multi-news media including print, television, and radio; (b) sponsors conservation oriented events including conservation/recreation-themed programs, workshops and conferences; and (c) maintains the Energy Tips website, which is a comprehensive online resource designed to provide customers with home energy information using easy to understand terms and illustrations. These programs show that Alabama Power is making an effort to conserve electricity and has made a satisfactory good faith effort to comply with section 10(a)(2)(C) of the FPA.

B. Compliance History and Ability to Comply with the New License

246. Based on a review of Alabama Power's compliance with the terms and conditions of the current license, staff finds that Alabama Power's overall record of making timely filings and compliance with its license is satisfactory. Therefore, staff believes that Alabama Power can satisfy the conditions of a new license.

C. Safe Management, Operation, and Maintenance of the Project

247. Staff has reviewed Alabama Power's management, operation, and maintenance of the Coosa River Project pursuant to the requirements of 18 C.F.R. Part 12 and the Commission's Engineering Guidelines. Staff concludes that the dams and other project works meet the Commission's Engineering Guidelines and criteria, and that there is no reason to believe that Alabama Power cannot continue to safely manage, operate, and maintain these facilities under a new license.

D. Ability to Provide Efficient and Reliable Electric Service

248. Staff has reviewed Alabama Power's plans and its ability to operate and maintain the project in a manner most likely to provide efficient and reliable electric service. Alabama Power regularly inspects the project's turbine generator units to ensure they continue to perform in an optimal manner, schedules maintenance to minimize effects on energy production, and since the project has been in operation, has undertaken several initiatives to ensure the project is able to operate reliably into the future. Staff concludes that Alabama Power is capable of operating the project to provide efficient and reliable electric service in the future.

E. Need for Power

249. To assess the need for power, staff looked at the needs in the operating region in which the project is located. The seven developments of the Coosa River Project have a combined installed capacity of 960.9 MW that generates about 3,050,000 MWh per year, and is located in the southern sub-region of Southeastern Electric Reliability Council (SERC), which is one of eight regional reliability councils of the North American Electric Reliability Council. SERC is a summer peaking region, and the peak summer energy demand for the SERC region is projected to grow at an average annual rate of 1.7 percent over the planning period from 2007 through 2016. About 39 percent of the energy utilized in the SERC region is generated from coal, 26 percent generated from nuclear power, and 5 percent generated from hydropower.

250. The southern sub-region is serviced by Southern Company, the largest generator of electricity in the United States. Alabama Power is the second largest subsidiary of Southern Company, providing 30 percent of the power needs for the Southern Company's residential, commercial, and industrial customers. Of this 30 percent, 7.2 percent of the power is derived from Alabama Power's 14 hydroelectric facilities. These facilities provide a significant source of reliable, dependable, and reasonably priced electricity for Alabama Power's customers.

251. Power from the Coosa River Project will continue to meet Alabama Power customers' growing needs as well as meeting part of the regional need for power.

F. Transmission Services

252. Each of the seven Coosa River developments delivers power to a substation located at the base of, or near, the respective project dam. The substations are connected to Alabama Power's transmission system through high voltage lines, which are not part of this license. Alabama Power proposes no changes that would affect its own or other transmission services in the region.

G. Cost Effectiveness of Plans

253. Alabama Power proposes to make a number of facility and operational modifications to both improve project generating capacity and enhance environmental resources affected by the project. Based on Alabama Power's record as an existing licensee, staff concludes that these proposals are likely to be carried out in a cost-effective manner.

H. Actions Affecting the Public

254. During the current license term, Alabama Power provided facilities to enhance the public use of project lands and waters, and operated the project with consideration to protecting public use of the project reservoirs and lakes, as well as protecting downstream communities by providing flood control storage. During this relicensing process, the public was invited to participate in meetings and provide comments at each phase of the process. In addition to being responsive to public input that benefits the community, Alabama Power uses the project to help meet the power needs of the region.

Project Economics

255. In determining whether to issue a new license for an existing hydroelectric project, the Commission considers a number of public interest factors, including the economic benefits of project power. Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in *Mead Corp.*,²⁴³ the Commission uses current costs to compare the costs of the project and likely alternative power with no forecasts concerning potential future inflation, escalation, or deflation beyond the license issuance date. The basic purpose of the Commission's economic analysis is to provide a general estimate of the potential power benefits and the costs of a project, and of reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license.

256. In applying this analysis to the Coosa River Project, staff considered three options: No Action alternative, Alabama Power's proposal, and the project as licensed herein. Under the no action alternative, the project would continue to operate as it does now. The project has an installed capacity of 960.9 MW, and generates an average of 3,050,000 MWh of electricity annually. The average annual project cost is about \$65.9 million, or \$21.6/MWh. When we multiply our estimate of average generation by the alternative power cost of \$98.07/MWh, staff gets a total value of the project's power of \$299.1 million in 2013 dollars.²⁴⁴ To determine whether the proposed project

²⁴³ 72 FERC ¶ 61,027 (1995).

²⁴⁴ For the Coosa River Project, staff used Alabama Power's estimate for the cost of alternative power (\$95.08/MWh in 2009 dollars) adjusted to 2013 dollars. This includes a power value, as well as value for dependable capacity. Alabama Power's estimate for alternative power is higher than the average retail cost of power in the Southeastern Region. However the Coosa River Project is unique in that it provides a high level of dependable capacity which justifies a higher replacement cost for energy.

is currently economically beneficial, staff subtracts the project's cost from the value of the project's power.²⁴⁵ Therefore, the project would produce power at a cost of \$233.2 million, or \$76.4/MWh, less than the likely alternative cost of power.

257. As proposed by Alabama Power, the levelized annual cost of operating the Coosa River Project is \$80.1 million, or \$26.2/MWh. Based on generation of 3,058,697 MWh of electricity annually and an alternative power cost of \$97.99/MWh, staff gets a total value of the project's power of \$299.7 million in 2013 dollars. Therefore, in the first year of operation, the project would produce power at a cost of \$219.6 million, or \$71.8/MWh, less than the likely alternative cost of power.

258. As licensed herein with the mandatory conditions and staff measures, the levelized annual cost of operating the project would be about \$79.8 million, or \$26.2/MWh. Based on generation of 3,050,000 MWh of electricity annually as licensed, the project would produce power valued at \$299.1 million in 2013 dollars when multiplied by the \$98.07/MWh value of the project's power. Therefore, in the first year of operation, the project would produce power at a cost of \$219.3 million, or \$71.9/MWh, less than the likely alternative cost of power.

259. In considering public interest factors, the Commission takes into account that hydroelectric projects offer unique operational benefits to the electric utility system (ancillary service benefits). These benefits include the ability to help maintain the stability of a power system, such as by quickly adjusting power output to respond to rapid changes in system load; and to respond rapidly to a major utility system or regional blackout by providing a source of power to help restart fossil-fuel based generating stations and put them back on line.

Comprehensive Development

260. Sections 4(e) and 10(a)(1) of the FPA²⁴⁶ require the Commission to give equal consideration to the power development purposes and to the purposes of energy

²⁴⁵ Details of staff's economic analysis for the project as licensed herein and for various alternatives are included in the EA issued on December 31, 2009, at 200-02. The project costs and value for energy described in this order were adjusted from 2009 to 2013 dollars. The project costs were adjusted based on the CPI-U index for years 2009-2012. The value of alternative power, which is a combined energy and capacity value, was increased by 3.14 percent to reflect a similar increase in costs as reported in the Energy Information Administration Annual Outlook for 2012.

conservation; the protection, mitigation of damage to, and enhancement of fish and wildlife; the protection of recreational opportunities; and the preservation of other aspects of environmental quality. Any license issued shall be such as in the Commission's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to relicense this project, and the terms and conditions included herein, reflect such consideration.

261. The EA for the project contains background information, analysis of effects, and support for related license articles. Based on the record of this proceeding, including the EA and the comments thereon, licensing the Coosa River Project as described in this order would not constitute a major federal action significantly affecting the quality of the human environment. The project will be safe if operated and maintained in accordance with the requirements of the license.

262. Based on staff's independent review and evaluation of the Coosa River Project, recommendations from the resource agencies and other stakeholders, and the no-action alternative, as documented in the EA, we have selected the proposed Coosa River Project, with the staff-recommended measures and agency mandatory conditions, and find that it is best adapted to a comprehensive plan for improving or developing the Coosa River.

263. We selected this alternative because: (1) issuance of a new license will serve to maintain a beneficial, dependable, and an inexpensive source of electric energy; (2) the required environmental measures will protect and enhance fish and wildlife resources, water quality, recreational resources, and historic properties; and (3) the combined 960.9 MW of electric capacity comes from a renewable resource that does not contribute to atmospheric pollution.

License Term

264. Section 15(e) of the FPA²⁴⁷ provides that any new license issued shall be for a term that the Commission determines to be in the public interest, but not less than 30 years or more than 50 years. The Commission's general policy is to establish 30-year terms for projects with little or no redevelopment, new construction, new capacity, or environmental mitigation and enhancement measures; 40-year terms for projects with a moderate amount of such activities; and 50-year terms for projects with

²⁴⁶ 16 U.S.C. §§ 797(e) and 803(a)(1) (2006).

²⁴⁷ 16 U.S.C. § 808(e) (2006).

extensive measures.²⁴⁸ The license authorizes a minor amount of construction, no new capacity, and only a minor amount of new environmental mitigation and enhancement measures. Consequently, a 30-year license term for the Coosa River Project is appropriate.

The Commission orders:

(A) This license is issued to Alabama Power Company (licensee), for a period of 30 years, effective the first day of the month in which this order is issued, to operate and maintain the Coosa River Project. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in these lands, described in the project description and the project boundary discussion of this order.

(2) Project works which include:

The Weiss Development consisting of: (1) a diversion dam with (a) a 1.35-mile-long earthen east embankment, (b) an approximately 280-foot-long concrete spillway equipped with five 40-foot-wide by 38-foot-high Tainter gates and one 16-foot-wide by 22-foot-high Taintor trash gate, (c) an approximately 100-foot-long concrete non-overflow section, and (d) a 1.0-mile-long earthen west embankment; (2) a secondary dam with (a) a 1.7-mile-long east embankment, (b) a 120-foot-long east concrete non-overflow section, (c) a 256-foot-wide powerhouse intake with trashracks with a 6-inch clear spacing, and an adjacent 16-foot-wide by 22-foot-high trash gate, (d) a 140-foot-long concrete west non-overflow section, and (e) a 1.8-mile-long earthen west embankment; (3) earthen saddle dikes designated as saddle dikes "A", "B", and "C", 3,692 feet, 2,473 feet, and 3,692 feet long, respectively; (4) a 52-mile-long reservoir with a surface area of 30,200 acres and storage of 306,651 acre-feet at a normal pool elevation of 564 feet mean sea level (msl), gross storage of 704,404 acre-feet at elevation 574 feet msl, and generation storage of 148,400 acre-feet at elevations 558-564 feet msl; (5) a 7,000-foot-long power canal from the main reservoir to a forebay lake; (6) a 256-foot-long by 67-foot-wide concrete powerhouse containing three generating

²⁴⁸ See *Consumers Power Co.*, 68 FERC ¶ 61,077, at 61,383-84 (1994).

units, each unit with (a) a vertical fixed-blade turbine with a 39,100 horsepower rating (29,325 kilowatts [kW]) and a maximum discharge of 8,400 cubic feet per second (cfs), and (b) a generator rated at 29,250 kW. The total rated capacity is 87.75 megawatts (MW); (7) a 1,300-foot-long, 50-foot-wide earthen tailrace channel; (8) a substation; and (9) appurtenant equipment.

The Neely Henry Development consisting of: (1) a dam with (a) an 850-foot-long earthen east embankment, (b) a 120-foot-long east concrete non-overflow section, (c) a 300-foot-long powerhouse intake section that includes trashracks with a 6-inch clear spacing, (d) a 305-foot-long concrete spillway with six 40-foot-wide by 29-foot-high Tainter gates, (e) a 133-foot-long west concrete non-overflow section, and (f) a 3,200-foot-long earthen west embankment; (2) a 78-mile-long reservoir with a surface area of 11,235 acres and storage of 121,235 acres at normal pool elevation 508 feet msl, and generation storage of 30,640 acre-feet at elevations 505-508 feet msl; (3) a 300-foot-long by 170-foot-wide concrete powerhouse containing three generating units, each unit with (a) a vertical propeller turbine with a 33,500 horsepower rating (25,125 kW) and a maximum discharge of 8,900 cfs, and (b) a generator rated at 24,300 kW. The total rated capacity is 72.9 MW; (4) a substation; and (5) appurtenant equipment.

The Logan Martin Development consisting of: (1) a dam with (a) a 4,650-foot-long earthen east dike, (b) a 327-foot-long concrete spillway with six 40-foot-wide by 38-foot-high Tainter gates and one 17.5-foot-wide by 21-foot-high vertical trash gate, (c) a 295-foot-long powerhouse intake section that includes trashracks with a 6-inch clear spacing, (d) an 850-foot-long earthen dike with a concrete non-overflow section next to the powerhouse; (2) a 48.5-mile long reservoir with a surface area of 15,263 acres and storage of 273,500 acre-feet at normal pool elevation 465 feet msl, flood storage of 518,600 acre-feet at elevation 477 feet msl, flood storage of 245,300 acre-feet at elevations 465-477 feet msl, and generation storage of 67,700 acre-feet at elevations 460-465 feet msl; (3) a 295-foot-long by 168.5-foot-wide concrete powerhouse containing three generating units, each unit with (a) a vertical propeller turbine with a 59,000 horsepower rating (44,250 kW) and a maximum discharge of 11,000 cfs, and (b) a generator rated at 42,750 kW. The total rated capacity of the generating units is 128.25 MW; (4) a substation; and (5) appurtenant equipment.

The Lay Development consisting of: (1) a dam with (a) a 512-foot-long earthen east embankment, (b) a 180-foot-long east concrete bulkhead section, (c) a 930-foot-long concrete spillway with twenty-six 30-foot-wide by 17-foot-high radial lift gates, (d) a 304-foot-long powerhouse intake section that includes trashracks with a 6-inch clear spacing, and (e) a 194-foot-long west concrete bulkhead section; (2) a 48.2-mile-long lake with a surface area of 12,000 acres at normal pool elevation 396 feet msl;

(3) a 376-foot-long by 74-foot-wide concrete powerhouse containing six generating units, four units with (a) a vertical propeller turbine with a 40,000 horsepower rating (30,000 kW) and a maximum discharge of 5,700 cfs, and (b) a generator rated at 29,500 kW; and two units with (a) a vertical, fixed-blade, “diagonal flow” turbine with a 45,500 horsepower rating (34,000 kW) and a maximum discharge of 5,700 cfs, and (b) a generator rated at 29,500 kW. The total rated capacity is 177 MW; (4) a substation; and (5) appurtenant equipment.

The Mitchell Development consisting of: (1) a dam with (a) a 964-foot-long concrete spillway with twenty-three 30-foot-wide by 15-foot-high timber-faced radial gates and three 30-foot-wide by 25-foot-high steel-faced radial gates, (b) a 449-foot-long original powerhouse intake section that includes trashracks with a 6-inch clear spacing, and (c) a 300-foot-long newer powerhouse intake section that includes trashracks with a 6-inch clear spacing; (2) a 14-mile-long lake with a surface area of 5,850 acres at normal pool elevation 312 feet msl; (3) a 449-foot-long by 83-foot-wide original concrete powerhouse at the center of the dam containing one operating generating unit with (a) a vertical propeller turbine with a 29,000 horsepower rating (21,750 kW) and a maximum discharge of 4,788 cfs, and a generator rated at 20,000 kW; (4) a 295-foot-long by 90-foot-wide newer concrete powerhouse at the west abutment of the dam wide containing three generating units, each with (a) a vertical propeller turbine with a 69,000 horsepower rating (51,750 kW) and a maximum discharge of 10,454 cfs, and (b) a generator rated at 42,750 kW. The total rated capacity is 170 MW; (5) a substation; and (6) appurtenant equipment.

The Jordan Development consisting of: (1) a dam with (a) a 177-foot-long concrete east non-overflow section, (b) a 246-foot-long powerhouse intake section that includes trashracks with a 4-1/8-inch clear spacing, (c) a 1,330-foot-long concrete spillway with eighteen 34-foot-wide by 8-foot-high radial lift gates and seventeen 30-foot-wide by 18-foot-high vertical lift gates, and (d) a 75-foot-long concrete west non-overflow section; (2) an 18-mile-long lake with a surface area of 5,880 acres at normal pool elevation 252 feet msl; (3) a 300-foot-long by 62-foot-wide concrete powerhouse containing four generating units, three units with (a) a vertical propeller turbine with a 36,000 horsepower rating (27,000 kW) and a maximum discharge of 4,960 cfs, and (b) a generator rated at 25,000 kW; and one unit with (a) a vertical propeller turbine with a 40,000 horsepower rating (30,000 kW) and maximum discharge of 5,200 cfs, and (b) a generator rated at 25,000 kW. The total rated capacity is 100 MW; (4) a substation; and (5) appurtenant equipment.

The Bouldin Development consisting of: (1) a 3-mile long, 210-foot-wide power canal leading from Jordan Lake to the Bouldin powerhouse and forebay lake. The power canal and forebay lake have a surface area of 920 acres at a normal pool elevation of

252 feet msl; (2) a forebay dam with (a) a 7,000-foot-long earthen east embankment, (b) a 228-foot-long powerhouse intake section that includes trashracks with a 6-inch clear spacing, and (c) a 2,200-foot-long earthen west embankment; (3) a 228-foot-long by 112-foot-wide concrete powerhouse containing three generating units, two units with (a) a vertical propeller turbine with a 103,600-horsepower rating (77,700kW) and a maximum discharge of 9,600 cfs, and (b) a generator rated at 75,000 kW; and a third generating unit with (a) a vertical fixed-blade, “diagonal flow” turbine with a 109,500-horsepower rating (81,700 kW) and a maximum discharge of 9,600 cfs, and (b) a generator rated at 75,000 kW. The total rated capacity is 225 MW; (4) a 5-mile-long, 250-foot-wide tailrace channel originating at the base of the powerhouse and terminating at the Coosa River; (5) a substation; and (6) appurtenant equipment.

The project works generally described above are more specifically shown and described by those approved portions of exhibits A and F shown below:

Exhibit A: The following sections of exhibit A filed on July 28, 2005:

Pages A-1 through A-42 of Exhibit A, entitled “Project Description,” describing the structural, mechanical, electrical, and transmission equipment for each of the seven developments.

Exhibit F: The following exhibit F drawings filed on July 28, 2005:

Exhibit F Drawing	FERC No. 2146-	Description
<i>Weiss Development</i>		
F-1	1001	Weiss Dam – General Layout
F-2	1002	Weiss Dam – Spillway Plan and Sections
F-3	1003	Weiss Dam – Powerhouse Location Plan
F-4	1004	Weiss Dam – Powerhouse Transverse Sections
F-5	1005	Weiss Dam – Powerhouse Longitudinal Section
F-6	1006	Weiss Dam – Powerhouse Generator Floor Plan
<i>Neely Henry Development</i>		
F-7	1007	H. Neely Henry Dam – Plan and Sections
F-8	1008	H. Neely Henry Dam – Powerhouse Transverse Section thru Units
F-9	1009	H. Neely Henry Dam – Powerhouse Transverse Section thru Service Bay

F-10	1010	H. Neely Henry Dam – Powerhouse Longitudinal Section
F-11	1011	H. Neely Henry Dam – Powerhouse Floor Plans
<i>Logan Martin Development</i>		
F-12	1012	Logan Martin Dam – Plan, Dike, and Spillway Section
F-13	1013	Logan Martin Dam – Powerhouse Transverse Section thru Units
F-14	1014	Logan Martin Dam – Powerhouse Transverse Section thru Service Bay
F-15	1015	Logan Martin Dam – Longitudinal Section
F-16	1016	Logan Martin Dam – Floor Plans
<i>Lay Development</i>		
F-17	1017	Lay Dam Reconstruction – Powerhouse Plan, Elevations and Sections
F-18	1018	Lay Dam Reconstruction – Powerhouse Elevation and Sections
F-19	1019	Lay Dam – Powerhouse Addition Plan
<i>Mitchell Development</i>		
F-20	1020	Mitchell Dam – Project Additions Plan
F-21	1021	Mitchell Dam – Elevations of Project Additions
F-22	1022	Mitchell Dam – New Powerhouse Transverse Section
F-23	1023	Mitchell Dam – Spillway Sections
F-24	1024	Mitchell Dam – Powerhouse Floor Plan
F-25	1025	Mitchell Dam – Original Powerhouse Plans
F-26	1026	Mitchell Dam – Transverse Section thru Units No. 1 and 2
F-27	1027	Mitchell Dam – Transverse Section thru Unit No. 3
F-28	1028	Mitchell Dam – Transverse Section thru Unit No. 4
F-29	1029	Mitchell Dam – Original Spillway Cross Sections
F-30	1030	Mitchell Dam – New Powerhouse Longitudinal Section
<i>Jordan Development</i>		
F-31	1031	Jordan Dam – Plan
F-32	1032	Jordan Dam – Spillway Sections
F-33	1033	Jordan Dam – Headworks and Powerhouse Section
F-34	1034	Jordan Dam – Powerhouse Plan

Bouldin Development

F-35	1035	Walter Bouldin Dam – Plan of Dike, Sta. 23+00 ~ Sta. 37+00
F-36	1036	Walter Bouldin Dam – Plan of Dike, Sta. 23+00 – Sta. 37+00
F-37	1037	Walter Bouldin Dam – Plan of Dike, Sta. 37+00 – Sta. 55+00
F-38	1038	Walter Bouldin Dam – Plan of Dike, Sta. 55+00 – Sta. 68+00
F-39	1039	Walter Bouldin Dam – Plan of Dike, Sta. 68+00 – Sta. 82+00
F-40	1040	Walter Bouldin Dam – Plan of Dike, Sta. 82+00 – Sta. 98+00
F-41	1041	Walter Bouldin Dam – Plan of Dike, Sta. 98+00 – Sta. 114+00
F-42	1042	Walter Bouldin Dam – Plan of Dike, Sta. 114+00 – Sta. 131+27
F-43	1043	Walter Bouldin Dam – Typical Sections at Key Locations
F-44	1044	Walter Bouldin Dam – Cross-section at Intake -Headworks Wingwalls
F-45	1045	Walter Bouldin Dam – Powerhouse Longitudinal Section along Centerline of Units
F-46	1046	Walter Bouldin Dam – Powerhouse Plan

(3) All of the structures, fixtures, equipment or facilities used to operate or maintain the project, all portable property that may be employed in connection with the project, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) The exhibits A and F described above are approved and made part of this license. The exhibit G drawings filed on July 28, 2005, as part of the application for license, do not conform to Commission regulations and are not approved.

(D) This license is subject to the conditions submitted by the Alabama Department of Environmental Management under section 401(a)(1) of the Clean Water Act, 33 U.S.C. § 1341(a)(1) (2006), as those conditions are set forth in Appendix A to this order.

(E) This license is subject to the incidental take terms and conditions of the biological opinion submitted by the U.S. Fish and Wildlife Service under section 7 of the Endangered Species Act, as those conditions are set forth in Appendix B to this order.

(F) This license is also subject to the articles set forth in Form L-5 (Oct. 1975), entitled "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters and Lands of the United States," (*see* 54 F.P.C. 1799 *et seq.*), as reproduced at the end of this order, and the following additional articles:

Article 201. Administrative Annual Charges. The licensee shall pay the United States annual charges, effective the first day of the month in which the license is issued, and as determined in accordance with the provisions of the Commission's regulations in effect from time to time, for the purposes of:

(a) reimbursing the United States for the cost of administration of Part I of the Federal Power Act. The authorized installed capacity for that purpose is 960.9 megawatts; and

(b) recompensing the United States for the use, occupancy, and enjoyment of 271.9 acres of its lands.

Article 202. Exhibit F Drawings. Within 45 days of the date of issuance of the license, the licensee shall file the approved Exhibit F drawings in aperture card and electronic file formats.

(a) Three sets of the approved exhibit drawings shall be reproduced on silver or gelatin 35mm microfilm. All microfilm shall be mounted on type D (3-1/4" X 7-3/8") aperture cards. Prior to microfilming, the FERC Project-Drawing Number (*i.e.*, P-2146-1001 through P-2146-1046) shall be shown in the margin below the title block of the approved drawing. After mounting, the FERC Drawing Number shall be typed on the upper right corner of each aperture card. Additionally, the Project Number, FERC Exhibit (*i.e.*, F-1, *etc.*), Drawing Title, and date of this license shall be typed on the upper left corner of each aperture card.

Two of the sets of aperture cards shall be filed with the Secretary of the Commission, ATTN: OEP/DHAC. The third set shall be filed with the Commission's Division of Dam Safety and Inspections Atlanta Regional Office.

(b) The licensee shall file two separate sets of exhibit drawings in electronic raster format with the Secretary of the Commission, ATTN: OEP/DHAC. A third set shall be filed with the Commission's Division of Dam Safety and Inspections Atlanta

Regional Office. Exhibit F drawings must be identified as Critical Energy Infrastructure Information (CEII) material under 18 C.F.R. § 388.113(c) (2012). Each drawing must be a separate electronic file, and the file name shall include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this license, and file extension in the following format [P-2146-1001, F-1, Description, MM-DD-YYYY.TIF]. Electronic drawings shall meet the following format specification:

IMAGERY – black & white raster file
FILE TYPE – Tagged Image File Format (TIFF), CCITT Group 4
RESOLUTION – 300 dpi desired (200 dpi min)
DRAWING SIZE FORMAT – 24” X 36” (min), 28” X 40” (max)
FILE SIZE – less than 1 MB desired

Article 203. Exhibit G Drawings. Within 90 days of the issuance of the license, the licensee shall file, for Commission approval, revised Exhibit G drawings enclosing within the project boundary all principal project works necessary for operation and maintenance of the project, including the 42 project recreation sites identified in Article 413, *Recreation Plan*. The Exhibit G drawings must comply with §§ 4.39 and 4.41 of the Commission’s regulations.

Article 204. Amortization Reserve. Pursuant to section 10(d) of the Federal Power Act, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. The licensee shall set aside in a project amortization reserve account at the end of each fiscal year one half of the project surplus earnings, if any, in excess of the specified rate of return per annum on the net investment. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year, the licensee shall deduct the amount of that deficiency from the amount of any surplus earnings subsequently accumulated, until absorbed. The licensee shall set aside one-half of the remaining surplus earnings, if any, cumulatively computed, in the project amortization reserve account. The licensee shall maintain the amounts established in the project amortization reserve account until further order of the Commission.

The specified reasonable rate of return used in computing amortization reserves shall be calculated annually based on current capital ratios developed from an average of 13 monthly balances of amounts properly included in the licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rate for such ratios shall be the weighted average cost of long-term debt and preferred stock for the year, and the cost of common equity shall be the interest rate on 10-year government bonds (reported as the Treasury Department's 10-year constant

maturity series) computed on the monthly average for the year in question plus four percentage points (400 basis points).

Article 205. *Headwater Benefits.* If the licensee's project was directly benefited by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement during the term of the original license (including extensions of that term by annual licenses), and if those headwater benefits were not previously assessed and reimbursed to the owner of the headwater improvement, the licensee shall reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed, in the same manner as for benefits received during the term of this new license. The benefits shall be assessed in accordance with Part 11, Subpart B, of the Commission's regulations.

Article 301. *Contract Plans and Specifications.* At least 60 days prior to the start of any construction, the licensee shall submit one copy of its plans and specifications and supporting design document to the Commission's Division of Dam Safety and Inspections (D2SI)-Atlanta Regional Engineer, and two copies to the Commission (one of these shall be a courtesy copy to the Director, D2SI). The submittal to the D2SI-Atlanta Regional Engineer must also include as part of preconstruction requirements: a Quality Control and Inspection Program; a Temporary Construction Emergency Action Plan; and a Soil Erosion and Sediment Control Plan. The licensee may not begin construction until the D2SI-Atlanta Regional Engineer has reviewed and commented on the plans and specifications, determined that all preconstruction requirements have been satisfied, and authorized start of construction.

Article 302. *As-built Drawings.* Within 90 days of completion of construction of the facilities authorized by this license, the licensee shall file for Commission approval revised exhibits A, F, and G, as applicable, to describe and show those project facilities as built. A courtesy copy shall be filed with the Commission's Division of Dam Safety and Inspections (D2SI)-Atlanta Regional Engineer, the Director, D2SI, and the Director, Division of Hydropower Administration and Compliance.

Article 303. *Project Modification Resulting From Environmental Requirements.* Any permanent or temporary modification which may affect the project works or operations shall be coordinated with the Commission's Division of Dam Safety and Inspections Atlanta Regional Engineer at the beginning of the planning and design phase. This includes those modifications resulting from environmental requirements set forth in the license. This schedule is to allow sufficient review time for the Commission to insure that the proposed work does not adversely affect the project works, dam safety or project operation.

Article 304. *Generating Unit Upgrades at the Lay and Bouldin Developments.* In reference to the turbine unit upgrades approved by the Commission on March 16, 2012, the licensee shall:

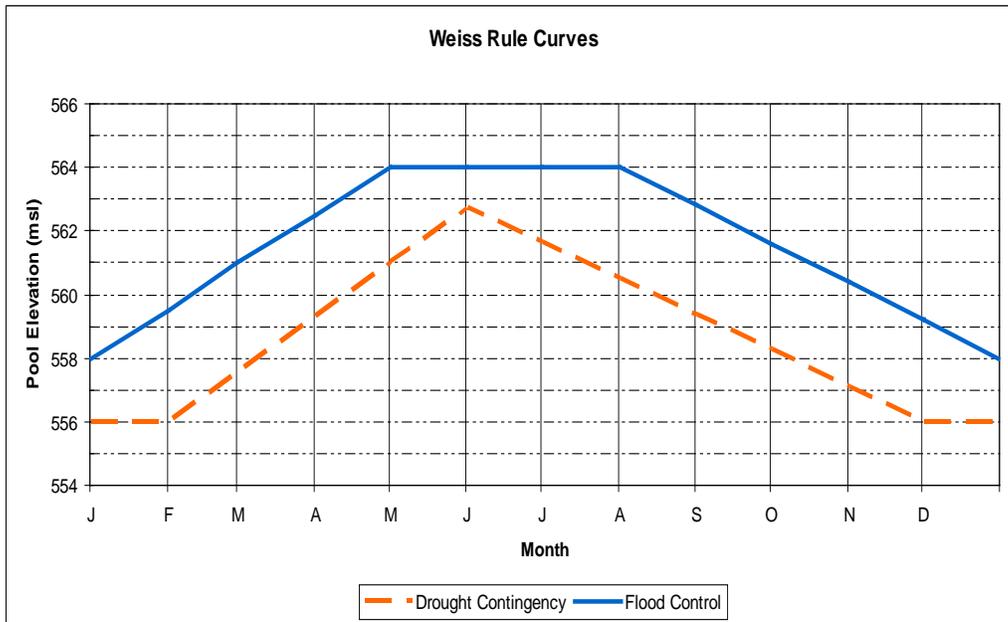
- (1) Start construction of the turbine upgrades at the Lay and Bouldin developments no later than March 15, 2014, and complete construction no later than March 15, 2016;
- (2) Within 90 days of the completion of the turbine upgrades at the Lay and Bouldin developments, file with the Commission and the Division of Dam Safety and Inspections-Atlanta Regional Engineer (a) the date of commencement of construction; (b) photo documentation of the nameplates of the new turbine units; and (c) a description of all of the turbines installed and hydraulic capacities before and after the upgrades; and
- (3) Within 90 days of completion of the turbine upgrades at the Lay and Bouldin developments, file, for Commission approval, revised Exhibit K, L (now Exhibit F), and M drawings, to describe those project facilities as built. A courtesy copy shall be filed with the Commission's Division of Dam Safety and Inspections-Atlanta Regional Engineer and the Director Division of Hydropower Administration and Compliance.

Article 305. *Generating Unit Upgrades at the Jordan Development.* In reference to the turbine unit upgrades approved by the Commission on May 7, 2013, the licensee shall:

- (1) Start construction of the turbine upgrades at the Jordan development no later than May 5, 2015, and complete construction no later than May 5, 2017;
- (2) Within 90 days of the completion of the turbine upgrades at the Jordan development, file with the Commission and Division of Dam Safety and Inspections-Atlanta Regional Engineer (a) the date of commencement of construction; (b) photo documentation of the nameplates of the new turbine units; and (c) a description of the turbines installed and hydraulic capacity before and after the upgrades; and
- (3) Within 90 days of completion of the turbine upgrade at the Jordan development, file for Commission approval revised Exhibits K, L (now Exhibit F), and M, to describe those project facilities as built. A courtesy copy shall be filed with the Commission's Division of Dam Safety and Inspections-Atlanta Regional Engineer and the Director, Division of Hydropower Administration and Compliance.

Article 401(a-g). Project Operation and Water Level Management.

Article 401a. Weiss Reservoir Water Level Management. Upon issuance of the license, the licensee shall implement the reservoir level management provisions of this article. The licensee shall operate the Weiss development in accordance with the operating curves and elevations as shown in the figure below and described herein, unless otherwise directed by the U.S. Army Corps of Engineers (Corps) for navigation or flood control:



Operating Curve. The operating curve reflects the maximum elevation at which the reservoir may be maintained before implementing the Corps’ flood control measures. Flood control measures, as identified in Article 402, *Flood Control Operations at Weiss, Neely Henry, and Logan Martin Developments*, are to be implemented when the reservoir level is at or above the operating curve. On January 1, the curve is at elevation 558 feet mean sea level (msl) and linearly rises to elevation 564 feet msl on the last day of April. From May 1 through August 31 the curve remains at elevation 564 feet msl. From September 1 through December 31 the curve linearly declines to elevation 558 feet msl.

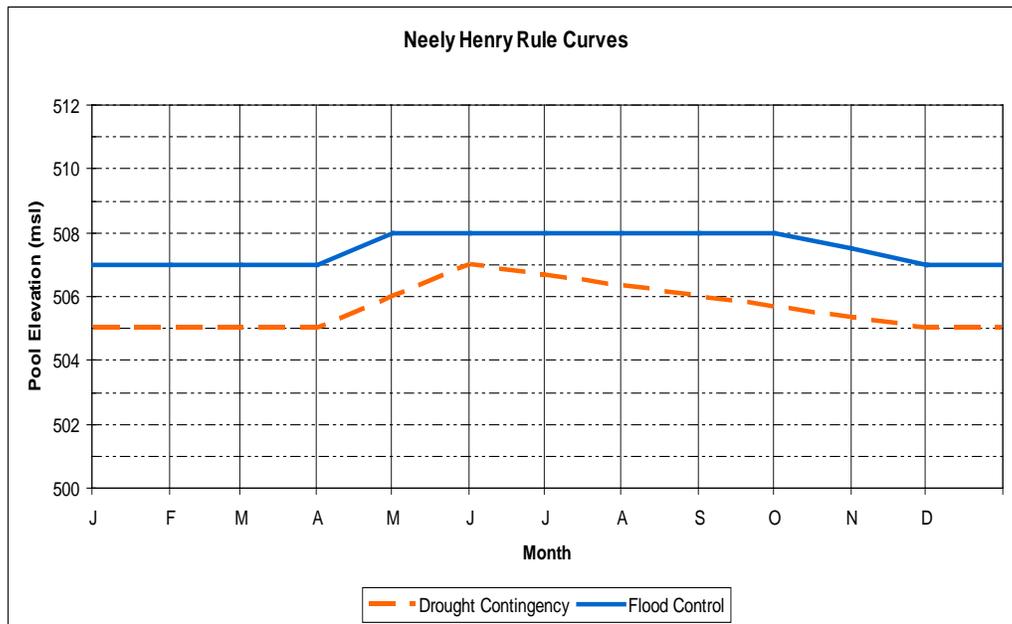
Drought Curve. The drought curve indicates when the reservoir is in drought condition and is used to calculate the composite storage (the sum of the amount of storage available for each reservoir in the Coosa River Basin). Composite storage is a component of the ADROP drought management plan required by Article 403, *Drought Management*. On January 1, the curve is at elevation 556 feet msl and remains at this elevation until January 31. On February 1 the curve rises linearly to elevation 562.75 feet

msl on May 31. On June 1 the curve decreases linearly to elevation 556 feet msl on November 30, and remains at elevation 556 feet msl December 1 through December 31.

The area between the operating curve and the drought curve represents the range in which the reservoir may be maintained under normal conditions, except as provided in Article 402, *Flood Control Operations at Weiss, Neely Henry, and Logan Martin Developments*, for flood control and Article 403, *Drought Management*, for drought management. The licensee shall continually review hydrologic conditions and adhere to the requirements of Article 402, *Flood Control Operations at Weiss, Neely Henry, and Logan Martin Developments*, during flood conditions, and Article 403, *Drought Management*, during drought conditions.

The reservoir level requirements may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods upon mutual agreement among the licensee, the Corps, Alabama Department of Environmental Management, and Alabama Department of Conservation and Natural Resources. If the reservoir level is so modified, the licensee shall notify the aforementioned agencies and the Commission as soon as possible, but not later than 48 hours after each such incident, and shall provide the reason for the change in reservoir levels.

Article 401b. *Neely Henry Reservoir Water Level Management.* Upon issuance of the license, the licensee shall implement the reservoir level management provisions of this article. The licensee shall operate the Neely Henry development in accordance with the operating curves and elevations as shown in the figure below and described herein, unless otherwise directed by the U.S. Army Corps of Engineers (Corps) for navigation or flood control:



Operating Curve. The operating curve reflects the maximum elevation at which the reservoir may be maintained before implementing the Corps’ flood control measures. Flood control measures, as identified in Article 402, *Flood Control Operations at Weiss, Neely Henry, and Logan Martin Developments*, are to be implemented when the reservoir level is at or above the operating curve. On January 1, the curve is at elevation 507 feet mean sea level (msl) and remains at 507 feet msl until March 31. From April 1 to April 30 the elevation linearly rises to 508 feet msl. From May 1 through September 30 the curve remains at elevation 508 feet msl. From October 1 to November 31 the curve linearly declines to elevation 507 feet msl, and remains at 507 feet msl until December 31.

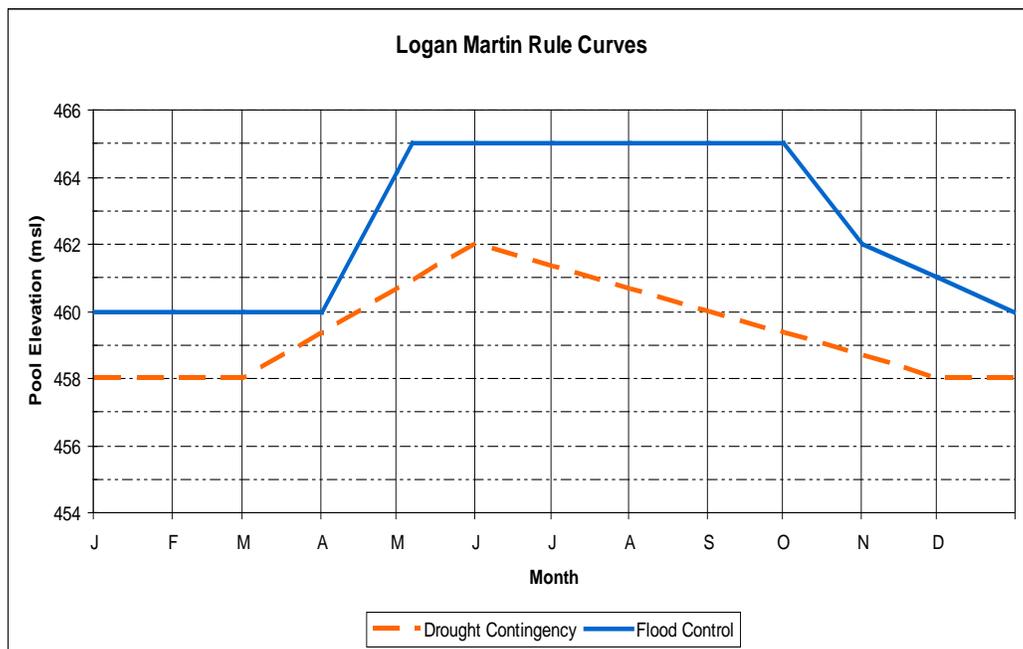
Drought Curve. The drought curve indicates when the reservoir is in drought condition and is used to calculate the composite storage (the sum of the amount of storage available for each reservoir in the Coosa River Basin). Composite storage is a component of the ADROP drought management plan required by Article 403, *Drought Management*. On January 1, the curve is at elevation 505 feet msl and remains at this elevation until March 31. On April 1 the curve rises linearly to elevation 507 feet msl on May 31. On June 1 the curve decreases linearly to elevation 505 feet msl on November 30, and remains at elevation 505 feet msl December 1 through December 31.

The area between the operating curve and the drought curve represents the range in which the reservoir may be maintained under normal conditions, except as provided in Article 402, *Flood Control Operations at Weiss, Neely Henry, and Logan Martin Developments*, for flood control and Article 403, *Drought Management*, for drought

management. The licensee shall continually review hydrologic conditions and adhere to the requirements of Article 402, *Flood Control Operations at Weiss, Neely Henry, and Logan Martin Developments*, during flood conditions, and Article 403, *Drought Management*, during drought conditions.

The reservoir level requirements may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods upon mutual agreement among the licensee, the Corps, Alabama Department of Environmental Management, and Alabama Department of Conservation and Natural Resources. If the reservoir level is so modified, the licensee shall notify the aforementioned agencies and the Commission as soon as possible, but not later than 48 hours after each such incident, and shall provide the reason for the change in reservoir levels.

Article 401c. Logan Martin Reservoir Water Level Management. Upon issuance of the license, the licensee shall implement the reservoir level management provisions of this article. The licensee shall operate the Logan Martin development in accordance with the operating curves and elevations as shown in the figure below and described herein, unless otherwise directed by the U.S. Army Corps of Engineers (Corps) for navigation and flood control:



Operating Curve. The operating curve reflects the maximum elevation at which the reservoir may be maintained before implementing the Corps’ flood control measures. Flood control measures, as identified in Article 402, *Flood Control Operations at Weiss, Neely Henry, and Logan Martin Developments*, are to be implemented when the reservoir

level is at or above the operating curve. On January 1, the curve is at elevation 460 feet mean sea level (msl) and remains at 460 feet msl until March 31. On April 1 the elevation linearly rises to 465 feet msl on May 7, and remains at 465 feet msl until September 30. From October 1 through October 31 the curve linearly declines to 462 feet msl, and from November 1 through December 31 the curve linearly declines to elevation 460 feet msl.

Drought Curve. The drought curve indicates when the reservoir is in drought condition, and is used to calculate the composite storage (the sum of the amount of storage available for each reservoir in the Coosa River Basin). Composite storage is a component of the ADROP drought management plan required by Article 403, *Drought Management*. On January 1, the curve is at elevation 458 feet msl and remains at this elevation until March 31. On April 1 the curve rises linearly to elevation 462 feet msl on May 31. On June 1 the curve decreases linearly to elevation 458 feet msl on November 30, and remains at elevation 458 feet msl December 1 through December 31.

The area between the operating curve and the drought curve represents the range in which the reservoir may be maintained under normal conditions, except as provided in Article 402, *Flood Control Operations at Weiss, Neely Henry, and Logan Martin Developments*, for flood control and Article 403, *Drought Management*, for drought management. The licensee shall continually review hydrologic conditions and adhere to the requirements of Article 402, *Flood Control Operations at Weiss, Neely Henry, and Logan Martin Developments*, during flood conditions, and Article 403, *Drought Management*, during drought conditions.

The reservoir level requirements may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods upon mutual agreement among the licensee, the Corps, Alabama Department of Environmental Management, and Alabama Department of Conservation and Natural Resources. If the reservoir level is so modified, the licensee shall notify the Commission as soon as possible, but not later than 48 hours after each such incident, and shall provide the reason for the change in reservoir levels.

Article 401d. *Lay Lake Water Level Management.* The licensee shall operate the Lay development in run-of-river mode, where outflows approximate inflows to the project. The licensee shall, to the extent possible, maintain the lake level within 1 foot of normal full pool elevation 396 feet mean sea level, except as provided in Article 403, *Drought Management*. The licensee shall continually review hydrologic conditions and adhere to the requirements of Article 403, *Drought Management*, during drought conditions.

Run-of-river operation and the lake water surface elevation may be temporarily modified if required by conditions beyond the control of the licensee, or for short periods upon mutual agreement with the U.S. Army Corps of Engineers, Alabama Department of Environmental Management, and Alabama Department of Conservation and Natural Resources. If project operations are so modified, the licensee shall notify the aforementioned agencies and the Commission as soon as possible, but not later than 48 hours after each such incident, and shall provide a reason for the change in project operations.

Article 401e. Mitchell Lake Water Level Management. The licensee shall operate the Mitchell development in run-of-river mode, where outflows approximate inflows to the project. The licensee shall, to the extent possible, maintain the lake level within 1 foot of normal full pool elevation 312 feet mean sea level, except as provided in Article 403, *Drought Management*. The licensee shall continually review hydrologic conditions and adhere to the requirements of Article 403, *Drought Management*, during drought conditions.

Run-of-river operation and the lake water surface elevation may be temporarily modified if required by conditions beyond the control of the licensee, or for short periods upon mutual agreement with the U.S. Army Corps of Engineers, Alabama Department of Environmental Management, and Alabama Department of Conservation and Natural Resources. If project operations are so modified, the licensee shall notify the aforementioned agencies and the Commission as soon as possible, but not later than 48 hours after each such incident, and shall provide a reason for the change in project operations.

Article 401f. Jordan Lake Water Level Management. The licensee shall operate the Jordan development in run-of-river mode, where outflows approximate inflows to the project. The licensee shall, to the extent possible, maintain the lake level within 1 foot of normal full pool elevation 252 feet mean sea level, except as provided in Article 403, *Drought Management*. The licensee shall continually review hydrologic conditions and adhere to the requirements of Article 403, *Drought Management*, during drought conditions.

Run-of-river operation and the lake water surface elevation may be temporarily modified if required by conditions beyond the control of the licensee, or for short periods upon mutual agreement with the U.S. Army Corps of Engineers, Alabama Department of Environmental Management, and Alabama Department of Conservation and Natural Resources. If project operations are so modified, the licensee shall notify the aforementioned agencies and the Commission as soon as possible, but not later than 48 hours after each such incident, and shall provide a reason for the change in project operations.

Article 401g. Bouldin Lake Water Level Management. The licensee shall operate the Bouldin development in run-of-river mode, where outflows approximate inflows to the project. The licensee shall, to the extent possible, maintain the lake level within 1 foot of normal full pool elevation 252 feet mean sea level, except as provided in Article 403, *Drought Management*. The licensee shall continually review hydrologic conditions and adhere to the requirements of Article 403, *Drought Management*, during drought conditions.

Run-of-river operation and the lake water surface elevation may be temporarily modified if required by conditions beyond the control of the licensee, or for short periods upon mutual agreement with the U.S. Army Corps of Engineers, Alabama Department of Environmental Management, and Alabama Department of Conservation and Natural Resources. If project operations are so modified, the licensee shall notify the aforementioned agencies and the Commission as soon as possible, but not later than 48 hours after each such incident, and shall provide a reason for the change in project operations.

Article 402. Flood Control Operations at Weiss, Neely Henry, and Logan Martin Developments. The purpose of this article is to provide for flood control in accordance with rules and regulations prescribed by the Secretary of the Army pursuant to Public Law 83-436.

a. *Weiss Reservoir Flood Control Operations.*

Unless otherwise directed by the U.S. Army Corps of Engineers (Corps), the licensee shall implement measures for flood control at the Weiss development as described in the Corps' June 2004 Alabama-Coosa River Basin Reservoir Regulation Manual, Weiss Reservoir (Weiss Manual): paragraphs 24 through 28 of the Weiss Manual, which describe the flood control operations; Chart No. 20, which summarizes the flood control regulation schedule and operating measures for flood control; and Chart No. 21, which describes an induced surcharge schedule.

b. *Neely Henry Reservoir Flood Control Operations.*

The licensee shall implement measures for flood control at the Neely Henry development as directed by the Corps. In addition, the licensee shall consult with the Corps, and file within 180 days of license issuance an update to the flood control measures specified in the Corps' January 1979 Alabama-Coosa River Basin Reservoir Regulation Manual, H. Neely Henry Reservoir (Neely Henry Manual) to be consistent with the flood control curve for the Neely Henry development specified in Article 401b. These revisions shall include: updates to paragraphs 28 through 35 of the Neely Henry

Manual, which describe the flood operations and a reservoir pre-flood evacuation procedure; and updates to Chart No. 12, which summarizes the pre-flood evacuation schedule and reservoir evacuation rates. The filing shall contain documentation of consultation with the Corps.

c. Logan Martin Reservoir Flood Control Operations

Unless otherwise directed by the Corps, the licensee shall implement measures for flood control at the Logan Martin development as described in the Corps' June 2004 Alabama-Coosa River Basin Reservoir Regulation Manual, Logan Martin (Logan Martin Manual): paragraphs 25 through 28 of the Logan Martin Manual, which describe the flood control operations; Chart No. 12, which summarizes the flood control regulation schedule and operating measures for flood control; and Chart No. 13, which describes an induced surcharge schedule.

The flood control requirements at the Weiss, Neely Henry, and Logan Martin developments may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods upon mutual agreement among the licensee, the Corps, U.S Fish and Wildlife Service, Alabama Department of Environmental Management, and Alabama Department of Conservation and Natural Resources. If the flood control provisions are so modified, the licensee shall notify the Commission as soon as possible, but not later than 48 hours after such incident, and shall provide the reason for the change in project operation.

Article 403. Drought Management. Upon issuance of this license the licensee shall implement the Coosa River portion of Alabama-ACT Drought Response Operations Proposal (ADROP), Version 3.3.1, dated December 13, 2010, as described in Attachment 3 to Alabama Power's Addendum to the Coosa River Biological Assessment, filed by Alabama Power on January 24, 2011. The Coosa River portion of ADROP provides a plan for managing the Coosa River operations during drought conditions of varying intensity. When drought indicators (rainfall and stream flow indicators) reach specified intensity levels, the Coosa River Project shall be operated to provide the specified monthly minimum flow releases from the Jordan dam. The licensee shall notify the Commission as soon as possible, but no later than 48 hours after modifying operations in response to drought conditions.

Article 404. Weiss Bypass Flow Adaptive Management Plan. Within one year of license issuance, the licensee shall file, with the Commission for approval a final Weiss Bypass Flow Adaptive Management Plan that is based on the draft plan dated July 2005 and filed with the Commission with the license application on July 28, 2005. The final plan shall include the following additional measures: (1) a detailed decision process,

including specific habitat and biological criteria for determining whether, and to what degree, to adjust flows in the future; (2) a protocol for adjusting the identified criteria; and (3) an updated implementation schedule.

The Weiss Bypass Flow Adaptive Management Plan shall be developed after consultation with U.S. Fish and Wildlife Service and Alabama Department of Conservation and Natural Resources. The licensee shall include with the plan documentation of consultation, copies of recommendations on the plan after it has been updated and provided to the entities above, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the updated plan with the Commission. If the licensee does not adopt a recommendation or otherwise makes changes to the draft plan, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the updated plan. The plan shall not be implemented until the licensee is notified by the Commission that the plan is approved. Upon Commission approval the licensee shall implement the plan, including any changes required by the Commission.

Article 405. *Minimum Flow Releases at the Jordan Development.* Upon issuance of the license, the licensee shall provide the following minimum flow releases from Jordan dam to protect the federally listed tulotoma snail (*Tulotoma magnifica*) and to maintain adequate flows for recreation downstream of the Jordan development.

- From April 1 through May 31, the licensee shall release a continuous base flow of 4,000 cubic feet per second (cfs) for 18 hours per day from 3 p.m. through 9 a.m. For the remaining 6 hours, the licensee shall release an 8,000-cfs pulse flow from 9 a.m. through 3 p.m.
- Beginning June 1 through June 15, the licensee shall reduce the continuous 4,000-cfs base flow at a rate of 66.7 cfs per day, and the daily 8,000-cfs pulse flow at a rate of 133.3 cfs per day.
- From June 16 through June 30, the licensee may cease release of the daily pulse flow but shall continue to release the continuous base flow, reducing it at a rate of 66.7 cfs per day.
- From July 1 through March 31, the licensee shall release a continuous minimum base flow of 2,000 cfs, regardless of inflow.

- From June 16 through October 31, on weekends only, the licensee shall release flows of 4,000 cfs, 6,000 cfs or 8,000 cfs continuously from 11 a.m. to 5 p.m. using the following schedule:

<u>Weekend No.</u>	<u>Saturday</u>	<u>Sunday</u>
1	4,000	6,000
2	6,000	8,000
3	8,000	4,000
4	4,000	6,000
5	6,000	8,000
6	8,000	4,000
7	4,000	6,000
8	6,000	8,000
9	8,000	4,000
10	4,000	6,000
11	6,000	8,000
12	8,000	4,000
13	4,000	6,000
14	6,000	8,000
15	8,000	4,000
16	4,000	6,000
17	6,000	8,000
18	8,000	4,000
19	4,000	6,000
20	6,000	8,000

- On one day during the Memorial Day and Labor Day weekend, the licensee shall release up to 10,000 cfs continuously between 10 a.m. and 6 p.m.
- On July 4th the licensee shall release up to 10,000 cfs continuously between 10 a.m. and 6 p.m. using the following schedule: if July 4th is on Tuesday, a Monday release would be required in addition to the required release on July 4th; if July 4th is on a Wednesday, the Monday release would be forfeited for the July 4th release; if July 4th is on a Thursday, the Monday release would be changed to Friday, July 5th to give a four day release; if July 4th is on a Saturday, Sunday or Monday, the normal recreational release schedule would be followed.
- A special release, up to 10,000 cfs may be scheduled to accommodate a civic event during the period April 1 to June 15. The amount of release, number of

days, and hours of release may be determined based on the schedule for the civic event, and sufficient availability of inflows.

- Flow releases shall be within a 5 percent flow-variation tolerance band of the release rate specified for each scheduled boating release day.
- All recreational releases are conditioned upon sufficient availability of inflow to support other project purposes. Recreational releases may be modified or terminated as follows:
 - For weekend releases, if insufficient water is available for a two day release but sufficient for a one day release then a one day release may be scheduled. Should it be required to reduce the number of days of release, first, Sunday may be deleted. If insufficient water is available for a one day scheduled release, the release may be canceled.
 - Recreational releases may be canceled when the Weiss, Neely Henry, and Logan Martin reservoirs are one foot below the normal operations guide curve.
 - Recreational releases may be modified (either lower flow or shorter duration) if dissolved oxygen in the releases during the event would cause the dissolved oxygen level in the Jordan dam tailrace to fall below 5.0 mg/l with aeration systems operations.

The flows may be temporarily modified if required by operating emergencies beyond the control of the licensee, for short periods upon mutual agreement among the licensee, the Corps, U.S. Fish and Wildlife Service, Alabama Department of Environmental Management, and Alabama Department of Conservation and Natural Resources, as necessary for flood control as provided in Article 402, *Flood Control Operations at Weiss, Neely Henry, and Logan Martin Developments*, or drought management as provided in Article 403, *Drought Management*. If the flows are so modified, the licensee shall notify the Commission as soon as possible, but not later than 48 hours after each such incident, and shall provide the reason for the change in project operation.

Recreation Flow Release Evaluation

Within 60 days of completing the turbine upgrade at the Jordan development, as authorized by the Commission on May 7, 2013, the licensee shall file for Commission approval, a plan to evaluate flow releases higher than the current 4,000 cfs recreation

release. The plan shall include, at a minimum, provisions to: (1) evaluate whether refurbishment of unit 4 alleviates a hydraulic constraint so that the licensee shall be able to provide recreation flows in the 4,000 cfs to 5,000 cfs range; and (2) if flows in the range shall be feasible the licensee shall determine, after consultation with the Alabama Department of Conservation and Natural Resources, the U.S. Fish and Wildlife Service, and the Coosa River Paddling Club, the recreation flows that provide for safe and optimal boating opportunities, and a schedule for such releases.

The licensee shall include with the plan an implementation schedule, documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to the entities above, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 406. *Project Operation and Flow Monitoring Plan.* Within 180 days of license issuance, the licensee shall file, with the Commission for approval, a Project Operation and Flow Monitoring Plan to monitor compliance with: (1) the water levels for each development required in Article 401(a-g) *Project Operation and Water Level Management*; (2) operations for flood control required in Article 402, *Flood Control Operations*; and (3) the drought management provisions in Article 403, *Drought Management*; and (4) flow releases from the Weiss and Jordan dams required in Article 404, *Weiss Bypass Flow Adaptive Management Plan* and Article 405, *Minimum Flow Releases at the Jordan Development*.

The Project Operation and Flow Monitoring Plan shall be developed after consultation with the Alabama Department of Conservation and Natural Resources, Alabama Department of Environmental Management, U.S. Fish and Wildlife Service, and the U.S. Army Corps of Engineers. The licensee shall include with the plan an implementation schedule, documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to the entities above, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 407. Dissolved Oxygen Enhancement Plan. Within 6 months of license issuance, the licensee shall file for Commission approval, a Dissolved Oxygen Enhancement Plan for the Coosa River Project. The purpose of the plan is to maintain dissolved oxygen (DO) concentrations in the Weiss bypassed reach (measured at a point 1,200 feet downstream from the Weiss dam spillway), the Weiss tailrace, and the Neely Henry, Logan Martin, Lay, Mitchell, Jordan, and Bouldin tailwaters of no less than 4.0 mg/L at all times.

The plan shall include, but not be limited to, the following provisions:

- (1) a description of the measures (e.g., turbine aeration systems, flow release mechanism for the Weiss bypassed reach, etc.) to be implemented at each project development, including protocols for their operation and maintenance;
- (2) design drawings of the aeration systems, flow release mechanism(s), etc.;
- (3) a description of the guidelines under which the aeration systems will be operated; and
- (4) a schedule for completing the installation of the DO enhancement measures at each project development no later than 18 months from license issuance.

The Dissolved Oxygen Enhancement Plan shall be developed after consultation with the Alabama Department of Environmental Management, the Alabama Department of Conservation and Natural Resources, and the U.S. Fish and Wildlife Service. The licensee shall include with the plan documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to the entities above, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the licensee is notified by the Commission that the plan is

approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 408. *Water Quality Monitoring Plan.* Within 3 months of license issuance, the licensee shall file, for Commission approval, a Water Quality Monitoring Plan to implement the water quality monitoring, reporting, and remedial measures requirements outlined in conditions 3 through 7 of the project's water quality certification, attached as Appendix A to this license. In addition to the stipulations of the certification, the Water Quality Monitoring Plan shall: (1) provide for dissolved oxygen (DO) and water temperature monitoring at all times (except during flood events as stipulated in the water quality certification); (2) include monitoring locations for interstitial waters; and (3) include provisions for filing any reports and plans required by the certification for continued monitoring and/or DO enhancement measures with the Commission for review and approval.

The Water Quality Monitoring Plan shall be developed after consultation with the Alabama Department of Environmental Management, Alabama Department of Conservation and Natural Resources, and the U.S. Fish and Wildlife Service. The licensee shall include with the plan an implementation schedule, documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to the entities, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 409. *Reservation of Authority to Prescribe Fishways.* Authority is reserved to the Commission to require the licensee to construct, operate, and maintain, or to provide for the construction, operation, and maintenance of such fishways as may be prescribed by the Secretary of the Interior pursuant to section 18 of the Federal Power Act.

Article 410. *Crappie and Black Bass Spawning Enhancement at Weiss and Logan Martin Reservoirs.* The licensee shall hold constant or slightly increase the water levels in Weiss and Logan Martin reservoirs for a 14-day period in the spring, with no 24-hour increase in reservoir levels greater than 2 inches. The purpose of the program is to provide stable, shallow-water spawning conditions for crappie and black bass in the

reservoirs. The exact dates and duration of stable water levels shall be determined annually in consultation with the Alabama Department of Conservation and Natural Resources (Alabama DCNR) and the U.S. Army Corps of Engineers (Corps).

The licensee shall file a report with the Commission annually, by December 31, starting the first full year of operation under this license, that provides the dates for the 14-day period that lake levels were stabilized to enhance fish spawning in the Weiss and Logan Martin reservoirs the preceding year. If, after consultation with the Alabama DCNR and the Corps, lake levels were not stabilized in the preceding year, or were halted at any point during the 14-day period, the licensee shall explain in the report the reasons for not stabilizing the lake levels (e.g., adverse hydrological conditions such as drought, maintenance activities, or operational conditions), along with supporting documentation, including comments from the Alabama DCNR and the Corps, if applicable. The Commission reserves the right to require changes to the enhancement measures.

Article 411. Fish Habitat Enhancement Plan. Within 120 days of license issuance, the licensee shall develop and file for Commission approval, a Fish Habitat Enhancement Plan to enhance aquatic habitat at the Coosa River Project. The plan shall include, but not be limited to: (1) a provision for introducing pea gravel or other appropriate substrates to the lakes to enhance spawning and cover for fish and to provide substrate for invertebrates; (2) measures to stabilize the Coosa River Project shorelines and the Weiss bypassed reach to improve water quality, control sedimentation, and provide cover for fish; and (3) a provision for providing brush piles and other woody debris in the lakes to provide cover for fish and to enhance angling opportunities at the project.

In order to evaluate the effectiveness of the implemented measures and the need for additional measures, the plan shall also include a provision to file an annual report with the Commission by December 31 that includes, but is not limited to: (1) a map showing the location of the measures installed under the plan; (2) a detailed description of the types and composition of materials used to construct the physical habitat enhancements; (3) a detailed description of the method(s) to be used to evaluate individual enhancement measures, as well as the follow-up observations documenting the effectiveness of the implemented measures; (4) a description of any measures, devices, or techniques proposed to replace measures deemed ineffective, and a schedule for installing the replacement structures; and (5) the maintenance protocol to keep the enhancement structures in functional condition.

The Fish Habitat Enhancement Plan shall be developed after consultation with the Alabama Department of Conservation and Natural Resources and the U.S. Fish and

Wildlife Service. The licensee shall include with the plan an implementation schedule, documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to the entities above, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information. The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 412. *Wildlife Management Plan.* The licensee shall implement Sections 1 through 10 of its draft Wildlife Management Plan for the Coosa River Hydroelectric Project, filed July 28, 2005, in Volume 4 of its relicense application. The purpose of the plan is to protect and enhance wildlife and wildlife habitat (aquatic and upland) on project lands.

In addition, within 120 days of license issuance, the licensee shall develop and file for Commission approval a bald eagle plan and schedule for conducting annual bald eagle surveys. The plan shall be developed in consultation with the U.S. Fish and Wildlife Service and the Alabama Department of Conservation and Natural Resources. The licensee shall include with the plan documentation of consultation, copies of recommendations on the plan after it has been prepared and provided to the entities above, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the bald eagle plan. Implementation of the plan shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 413. *Recreation Plan.* Within 1 year of license issuance, the licensee shall file, with the Commission for approval, a revised Recreation Plan for the Coosa River Hydroelectric Project to improve recreation opportunities at the project. The plan shall include, but not be limited to, the following project-wide and development-specific provisions:

Project-Wide

(1) An identification of the acreage for each of the 42 project recreation sites required by this article, including the sites designated for future recreational use; (2) an evaluation of the existing signage at the recreation sites for accuracy of information and a description of any proposed revisions to the existing signage or any proposed new signage; (3) a description of soil erosion and sediment control measures to be used where ground-disturbing activities are proposed, including bio-engineering techniques (e.g., willow and wetland seeding) to stabilize the shoreline; (4) provisions to post a “carry-in/carry-out” informational sign for the public to carry out their trash from the project recreation sites, identification and removal of certain existing trash receptacles, and installation of containers with appropriately-sized bags at identified recreation sites; (5) a provision to clean-up, and remove trash from, the project recreation sites; (6) a discussion of how the needs of the disabled were considered in the planning and design of the recreation facilities; (7) a definition of woody debris and a provision to monitor the amount, location, and origin of woody debris collected at the Coosa River Project reservoirs and lakes to determine if a public safety concern exists; and (8) a provision to review and update, every six years, the Recreation Plan. The plan shall include appropriate site drawings, specifications, and a map or maps showing the type of recreation facilities and their location in relation to the revised project boundary. The licensee shall operate and maintain, or provide for the operation and maintenance of, the project recreation sites.

Weiss Development

At State Launch Highway 9 (Site 30): continue to provide a boat launch, a parking area, and a fishing pier.

At State Launch at Cobia Bridge (Site 27): continue to provide a barrier-free walkway from the parking area to the dock, and a dock.

At Cedar Bluff Fishing Pier (Site 75): continue to provide a fishing pier.

At State Route 9 Informal Fishing Area (Site 58): provide details for improving the site located on licensee-owned lands.

At Bypass Bank Fishing Area (Site 85): (1) discuss how the site shall be managed to minimize or prevent unauthorized activities, such as illegal dumping; and (2) improve the site, such as designated parking for vehicles and vehicles with trailer-boat.

At Slackland Beach (Site 2): (1) improve the existing access road to allow maintenance and emergency vehicles, as well as, pedestrian access; (2) install a gate on the access road; and (3) provide a single vehicle parking area.

At Bay Springs Boat Launch (Site 51): (1) discuss how the site shall be managed to minimize or prevent vandalism; (2) improve the site by repairing and extending the existing boat launch to provide access at the winter pool elevation of 561 feet mean sea level (from January 1 to March 1), and designate parking for vehicles and vehicles with trailer-boat including a traffic flow pattern; and (3) install a fishing pier.

Neely Henry Development

At Croft's Ferry (Site 40): continue to provide a boat launch on licensee-owned land.

At Ten Islands Historic Park (Site 2): (1) continue to provide a boat launch; (2) re-stripe the parking area and designate parking for vehicles and vehicles with trailer-boat; (3) install a fishing pier; and (4) install a parking area for vehicles with trailered boats and a pedestrian sidewalk to the boat launch.

At Possible Future Recreation Use Lands (Site 45) located approximately 0.5 mile north of Neely Henry dam and within the Coosa River Project boundary: reserve the site for future recreational development.

Logan Martin Development

At Lock 3 Bank Fishing Site (Site 42): improve the site by repairing the parking area with grading and applying compacted gravel, repairing the shoreline erosion identified on the bank fishing trail, and developing a parking area.

Lay Development

At Beeswax Creek Boat Launch and Park, Site 13 A: (1) continue to provide a boat launch; (2) install a barrier-free fishing pier; and (3) designate an accessible parking space to serve the new fishing pier.

At Beeswax Creek Boat Launch and Park, Site 13 B: (1) install a fishing pier; and (2) construct a barrier-free trail from the existing parking area to the fishing pier.

At Lay Dam Boat Launch (Site 3): (1) continue to provide a boat launch; (2) provide additional parking for single vehicles and designate accessible parking; and (3) provide a discussion of whether a portable toilet at the parking area is needed.

At Cedar Creek Bridge Informal Camping Site (Site 29): provide details for improving the site located on licensee-owned lands.

At Shelby County 400 Boat Launch (Site 7): (1) continue to provide a boat launch; (2) expand the parking area to accommodate vehicles with trailer-boat and designate parking for single vehicles; (3) improve the dock; and (4) provide a discussion of whether an additional boat launch is needed.

At Route 145 Bridge Bank Fishing (Site 33): stabilize the shoreline on licensee-owned land.

At Kelly Creek Boat Launch (Site 14): (1) continue to provide a boat launch; and (2) reserve the site for future recreational development.

At Glover's Point Landing (Site 15): (1) continue to provide a boat launch; and (2) reserve the site for future recreational development.

Mitchell Development

At Big Foot Boat Launch (Site 8): provide details for repairing the boat launch and developing a parking area.

At Barrett's Fish Camp (Site 14): continue to provide a boat launch and parking area.

At Higgins Ferry Park and Boat Launch (Site 6): (1) continue to provide a boat launch; (2) construct a trail for pedestrian access to the existing boat launch; and (3) discuss how conflicts between current campsites and day-use will be resolved.

At Double Bridges Camping (Site 12): provide details for constructing a boat launch and a fishing pier on licensee-owned lands.

At Informal Primitive Camping Site Nos. 16, 17, 27, 33, and 34, located within the project boundary at the Coosa Wildlife Management Area: provide details for improving each informal primitive campsite.

At Boy Scout Camp (Arrowhead Preserve) (Site 5): provide details for a carry-in boat access area, a trail to the new carry-in boat access area, and a parking area for approximately 15 vehicles.

Continue to provide for the Tailrace Fishing Access Facility.

To protect the federally listed red-cockaded woodpecker, the licensee shall improve the project recreation sites at the Mitchell development in coordination with the Red-cockaded Woodpecker (*Picoides borealis*) Management Plan required under Article 412, *Wildlife Management Plan*.

Jordan Development and Bouldin Development

At the Jordan development: continue to provide for the Tailrace Fishing Access Facility.

At East Side Tailrace Recreation Site (Site 33): continue to provide a boat launch, restroom facilities, a parking area, and an access road.

At Rotary Point Boat Launch (Site 20): (1) continue to provide a boat launch; (2) install an electrical distribution service line at the boat launch and parking area; (3) install lights; (4) reconfigure the parking area to improve traffic flow; and (5) install a fishing pier.

At Bonner's Landing (Site 4): (1) continue to provide a boat launch; (2) improve the boat launch to allow access by a vehicle with trailer-boat; (3) provide details for improving the access/egress road to the boat launch; (3) develop a shoreline fishing trail or a fishing pier with a trail; (4) develop a single vehicle parking area at the new trail; (5) provide details for improving the trail from the parking area to the swimming area; and (6) provide details for improving the parking area to provide for additional parking.

At the East Side Tailrace Fishing Access (Site 34): (1) construct an approximate 150-foot-long path from the upper parking area to an identified site or sites along the shoreline to improve bank fishing; and (2) provide details for improving the parking area.

At Rotary Point Bank Fishing Access (Site 20B): (1) continue to provide a boat launch; (2) develop a parking area at the existing trail; (3) provide details for improving the trail to the site; and (4) determine the need for a fishing pier.

At Sheila's Wharf (Site 2): (1) develop a parking area; (2) install a fishing pier; and (3) construct a barrier-free trail from the parking area to the fishing pier.

At Jordan Dam Picnic Area (Site 22): (1) continue to provide a picnic area; and (2) install signage to inform the public of the hours of operation and acceptable uses.

At Swayback Bridge Bank Fishing (Site 30): (1) designate parking for vehicles; (2) provide details for improving the trail to the site; and (3) construct a carry-in boat access area.

At Bouldin Canal Bank Fishing Site (Site 25C): provide details for improving the site located on licensee-owned lands.

At Future Use Land Site (Site 47) located downstream from the Jordan dam: reserve the site for future whitewater boating access to the Coosa River.

At Potential Swimming Access, located between Site No. 19 and Site No. 20: reserve the site for future recreational development.

The Recreation Plan shall be developed after consultation with the Alabama Department of Conservation and Natural Resources, the U.S. Fish and Wildlife Service, the U.S. Bureau of Land Management, and the Coosa River Paddling Club. The licensee shall include with the plan an implementation schedule, documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to the entities above, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

Concurrent with the filing of the Licensed Hydropower Development Recreation Report (Form 80) with the Commission, the licensee shall file a Recreation Monitoring Report that shall include: (1) a summary of any meeting with the entities above that discusses recreational use and demand, and associated project-related resource effects; and (2) any additional measures or modifications to the project recreation sites that shall be needed and a schedule for implementing such changes.

The licensee shall develop the plan to be consistent with Article 411, *Fish Habitat Enhancement Plan*, and Article 412, *Wildlife Management Plan*, so that provisions for stabilizing the shoreline, as well as provisions for protecting and enhancing wildlife and associated habitat, are consistent.

The Commission reserves the right to require changes to the plan. Upon Commission approval the licensee shall implement the plan, including any changes required by the Commission.

Article 414. Shoreline Management Plan. Within 1 year of license issuance, the licensee shall file with the Commission, for approval, a revised Shoreline Management Plan for the Coosa River Project to protect the environmental resources and scenic quality at the project. The plan shall include, but not be limited to, the following: (1) a list of land use management objectives and goals; (2) a description of the shoreline classification system, including at a minimum (a) project operation lands, (b) recreation lands, (c) multiple use lands; (d) sensitive resources lands, particularly project lands that will be adjacent to, or might affect, federally listed species (e.g., Mohr's Barbaras buttons (*Marshallia mohrii*) or green pitcher plant (*Sarracenia oreophila*)), and (e) natural or undeveloped lands; (3) individual maps that clearly identify the Coosa River Project boundary for each of the developments and the above shoreline classification system; (4) a description of the basis for designating the various lands; (5) a provision to update the Sensitive Resources Lands classification at least annually to account for new federally listed species and/or critical habitat; (6) an evaluation matrix for the Sensitive Resources Lands classification to assist in defining permit restrictions; (7) a description of allowable and prohibited uses for each of the above shoreline classification system; and (8) a provision to review and update, if necessary, the Shoreline Management Plan every six years.

Shoreline Compliance Program

The Shoreline Management Plan shall include a Shoreline Compliance Program to inform shoreline landowners and the public about the licensee's procedures for issuing a permit and/or lease to occupy project lands and waters. The program shall include, at a minimum, the following: (1) a discussion of the Shoreline Compliance Program; (2) an application process for a permit and/or lease to occupy project lands and waters; and (3) a provision, with a schedule, to address unpermitted structures at each of the Coosa River Project's developments.

Public Education and Outreach

The Shoreline Management Plan shall include a Public Education and Outreach Program to inform shoreline landowners and the public about the project and the provisions contained in the Shoreline Management Plan. The program shall include, at a minimum, the following: (1) a detailed description of public education and outreach activities at the project; (2) identification of the licensee's web site address to provide the public with information regarding the licensee's shoreline permitting program;

(3) a provision to promote, through the licensee's Shorelines newsletter, the benefits of using best management practices, including bio-engineering techniques (willow and wetland seeding) to control soil erosion; and (4) a provision for informing the public of the proper use of federal-regulated herbicides and associated effects on aquatic resources.

The Shoreline Management Plan shall be developed after consultation with the U.S. Fish and Wildlife Service, the U.S. Bureau of Land Management, the Alabama State Historic Preservation Office, the Georgia State Historic Preservation Office, and the Alabama Department of Conservation and Natural Resources. The licensee shall include an implementation schedule, documentation of consultation, copies of recommendations on the completed program after it has been prepared and provided to the entities above, and specific descriptions of how the entities' comments are accommodated by the program. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations prior to filing the program with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval the licensee shall implement the plan, including any changes required by the Commission.

Article 415. Erosion Repair and Monitoring Plan. Within 90 days of license issuance, the licensee shall file with the Commission for approval, an Erosion Repair and Monitoring Plan for the Coosa River Project. The purpose of the plan is to address erosion and sedimentation, as well as identify remediation measures, at the project.

The plan shall incorporate the provisions of the Erosion Repair and Monitoring Plan, filed with the Coosa River Project license application, as Volume 4, on July 28, 2005 that pertains specifically to the Coosa River Project. The plan shall also include, at a minimum, the following modifications:

- (1) updates, based on the additional consultation required below, to the provisions included in the draft plan, filed on July 28, 2005;
- (2) a decision-making process for determining remedial measures to be implemented at individual erosion sites on the project developments; and
- (3) specific criteria for determining the success of implemented measures to control erosion.

The Erosion Repair and Monitoring Plan shall be developed after consultation with the Alabama Department of Environmental Management, the Alabama Department of Conservation and Natural Resources, the U.S. Fish and Wildlife Service, the U.S. Bureau of Land Management, the Alabama State Historic Preservation Office, and the Georgia State Historic Preservation Office. The licensee shall include with the plan an implementation schedule, documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to the entities above, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 416. Invasive Species Management Plan. Within 1 year of license issuance, the licensee shall file with the Commission for approval, an Invasive Species Management Plan that specifically pertains to the Coosa River Project. The plan shall include, but not be limited to, the following: (1) an identification of invasive species that occur within the Coosa River Project boundary; (2) a discussion of the specific measures that will be used to control invasive species at the project, including identifying any herbicides and pesticides that are safe for aquatic resources that inhabit lands classified as Sensitive Resources Lands; (3) a provision to avoid the use of any herbicides and pesticides at the Jordan development that may harm the federally listed tulotoma snail (*Tulotoma magnifica*); (4) a provision to annually monitor the invasive species to evaluate the effectiveness of the implemented control measures; (5) a description of the mosquito control program; and (6) a description of the zebra mussel awareness program.

The Invasive Species Management Plan shall be developed after consultation with the U.S. Fish and Wildlife Service, the U.S. Bureau of Land Management, and the Alabama Department of Conservation and Natural Resources. The licensee shall include with the plan an implementation schedule, documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to the entities above, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations prior to filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 417. *Threatened and Endangered Species Protection Plan.* Within 180 days of license issuance, the licensee shall file for Commission approval, a Threatened and Endangered Species Protection Plan detailing how it will implement the incidental take terms and conditions of the U.S. Fish and Wildlife's (FWS) Biological Opinion, filed on June 10, 2012, to minimize take of listed species. The terms and conditions are included in Appendix B of this license.

The plan shall include, at a minimum, the licensee's strategy for implementing the provisions outlined in the terms and conditions of the incidental take statement. In addition, the plan shall include a provision for filing any report required by the conditions of the incidental take statement with the Commission for review.

The Threatened and Endangered Species Protection Plan shall be developed after consultation with FWS and the Alabama Department of Conservation and Natural Resources. The licensee shall include with the plan an implementation schedule, documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to the entities above, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 418. *Programmatic Agreement.* The licensee shall implement the "Programmatic Agreement Among the Federal Energy Regulatory Commission, the Alabama State Historic Preservation Officer, and the Georgia State Historic Preservation Officer for Managing Historic Properties That May Be Affected by a License Issuing to Alabama Power Company for the Continued Operation of the Coosa River Hydroelectric Project in Alabama and Georgia (FERC No. 2146-111)," executed on October 20, 2006 by the Alabama State Historic Preservation Officer and on October 26, 2006 by the Georgia State Historic Preservation Officer, including but not limited to the approved Historic Properties Management Plan (HPMP), filed October 27, 2006. In the event that the Programmatic Agreement is terminated, the licensee shall continue to implement the

provisions of its approved HPMP. The Commission reserves the authority to require changes to the HPMP at any time during the term of the license.

Article 419. Use and Occupancy. (a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee shall also have continuing responsibility to supervise and control the use and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The type of use and occupancy of project lands and waters for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 water craft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the impoundment shoreline. To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the

licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensee may convey easements or rights-of-way across, or leases of project lands for: (1) replacement, expansion, realignment, or maintenance of bridges or roads where all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project impoundment. No later than January 31 of each year, the licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 water craft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is 5 acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 60 days before conveying any interest in project lands under this paragraph (d), the licensee must file a letter with the Commission, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Commission's authorized representative, within 45 days from the filing date,

requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraph (c) or (d) of this article:

(1) Before conveying the interest, the licensee shall consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer;

(2) Before conveying the interest, the shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved report on recreational resources of an Exhibit E; or, if the project does not have an approved report on recreational resources, that the lands to be conveyed do not have recreational value;

(3) The instrument of conveyance must include the following covenants running with the land: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (ii) the grantee shall take all reasonable precautions to ensure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project; and (iii) the grantee shall not unduly restrict public access to project waters;

(4) The Commission reserves the right to require the licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised Exhibit G drawings would be filed for approval for other purposes.

(g) The authority granted to the licensee under this article shall not apply to any part of the public lands and reservations of the United States included within the project boundary.

(G) The licensee shall serve copies of any Commission filing required by this order on any entity specified in the order to be consulted on matters relating to that filing. Proof of service on these entities must accompany the filing with the Commission.

(H) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section 313(a) of the FPA, 16 U.S.C. § 8251 (2006), and section 385.713 of the Commission's regulations, 18 C.F.R. § 385.713 (2012). The filing of a request for rehearing does not operate as a stay of the effective date of this license or of any other date specified in this order. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

By the Commission.

Kimberly D. Bose,
Secretary

Form L-5
(October, 1975)

FEDERAL ENERGY REGULATORY COMMISSION

**TERMS AND CONDITIONS OF LICENSE FOR CONSTRUCTED
MAJOR PROJECT AFFECTING NAVIGABLE WATERS
AND LANDS OF THE UNITED STATES**

Article 1. The entire project, as described in this order of the Commission, shall be subject to all of the provisions, terms, and conditions of the license.

Article 2. No substantial change shall be made in the maps, plans, specifications, and statements described and designated as exhibits and approved by the Commission in its order as a part of the license until such change shall have been approved by the Commission: Provided, however, That if the Licensee or the Commission deems it necessary or desirable that said approved exhibits, or any of them, be changed, there shall be submitted to the Commission for approval a revised, or additional exhibit or exhibits covering the proposed changes which, upon approval by the Commission, shall become a part of the license and shall supersede, in whole or in part, such exhibit or exhibits theretofore made a part of the license as may be specified by the Commission.

Article 3. The project area and project works shall be in substantial conformity with the approved exhibits referred to in Article 2 herein or as changed in accordance with the provisions of said article. Except when emergency shall require for the protection of navigation, life, health, or property, there shall not be made without prior approval of the Commission any substantial alteration or addition not in conformity with the approved plans to any dam or other project works under the license or any substantial use of project lands and waters not authorized herein; and any emergency alteration, addition, or use so made shall thereafter be subject to such modification and change as the Commission may direct. Minor changes in project works, or in uses of project lands and waters, or divergence from such approved exhibits may be made if such changes will not result in a decrease in efficiency, in a material increase in cost, in an adverse environmental impact, or in impairment of the general scheme of development; but any of such minor changes made without the prior approval of the Commission, which in its judgment have produced or will produce any of such results, shall be subject to such alteration as the Commission may direct.

Article 4. The project, including its operation and maintenance and any work incidental to additions or alterations authorized by the Commission, whether or not conducted upon lands of the United States, shall be subject to the inspection and

supervision of the Regional Engineer, Federal Energy Regulatory Commission, in the region wherein the project is located, or of such other officer or agent as the Commission may designate, who shall be the authorized representative of the Commission for such purposes. The Licensee shall cooperate fully with said representative and shall furnish him such information as he may require concerning the operation and maintenance of the project, and any such alterations thereto, and shall notify him of the date upon which work with respect to any alteration will begin, as far in advance thereof as said representative may reasonably specify, and shall notify him promptly in writing of any suspension of work for a period of more than one week, and of its resumption and completion. The Licensee shall submit to said representative a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of any such alterations to the project. Construction of said alterations or any feature thereof shall not be initiated until the program of inspection for the alterations or any feature thereof has been approved by said representative. The Licensee shall allow said representative and other officers or employees of the United States, showing proper credentials, free and unrestricted access to, through, and across the project lands and project works in the performance of their official duties. The Licensee shall comply with such rules and regulations of general or special applicability as the Commission may prescribe from time to time for the protection of life, health, or property.

Article 5. The Licensee, within five years from the date of issuance of the license, shall acquire title in fee or the right to use in perpetuity all lands, other than lands of the United States, necessary or appropriate for the construction maintenance, and operation of the project. The Licensee or its successors and assigns shall, during the period of the license, retain the possession of all project property covered by the license as issued or as later amended, including the project area, the project works, and all franchises, easements, water rights, and rights or occupancy and use; and none of such properties shall be voluntarily sold, leased, transferred, abandoned, or otherwise disposed of without the prior written approval of the Commission, except that the Licensee may lease or otherwise dispose of interests in project lands or property without specific written approval of the Commission pursuant to the then current regulations of the Commission. The provisions of this article are not intended to prevent the abandonment or the retirement from service of structures, equipment, or other project works in connection with replacements thereof when they become obsolete, inadequate, or inefficient for further service due to wear and tear; and mortgage or trust deeds or judicial sales made thereunder, or tax sales, shall not be deemed voluntary transfers within the meaning of this article.

Article 6. In the event the project is taken over by the United States upon the termination of the license as provided in Section 14 of the Federal Power Act, or is transferred to a new licensee or to a nonpower licensee under the provisions of Section 15

of said Act, the Licensee, its successors and assigns shall be responsible for, and shall make good any defect of title to, or of right of occupancy and use in, any of such project property that is necessary or appropriate or valuable and serviceable in the maintenance and operation of the project, and shall pay and discharge, or shall assume responsibility for payment and discharge of, all liens or encumbrances upon the project or project property created by the Licensee or created or incurred after the issuance of the license: Provided, That the provisions of this article are not intended to require the Licensee, for the purpose of transferring the project to the United States or to a new licensee, to acquire any different title to, or right of occupancy and use in, any of such project property than was necessary to acquire for its own purposes as the Licensee.

Article 7. The actual legitimate original cost of the project, and of any addition thereto or betterment thereof, shall be determined by the Commission in accordance with the Federal Power Act and the Commission's Rules and Regulations thereunder.

Article 8. The Licensee shall install and thereafter maintain gages and stream-gaging stations for the purpose of determining the stage and flow of the stream or streams on which the project is located, the amount of water held in and withdrawn from storage, and the effective head on the turbines; shall provide for the required reading of such gages and for the adequate rating of such stations; and shall install and maintain standard meters adequate for the determination of the amount of electric energy generated by the project works. The number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, shall at all times be satisfactory to the Commission or its authorized representative. The Commission reserves the right, after notice and opportunity for hearing, to require such alterations in the number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, as are necessary to secure adequate determinations. The installation of gages, the rating of said stream or streams, and the determination of the flow thereof, shall be under the supervision of, or in cooperation with, the District Engineer of the United States Geological Survey having charge of stream-gaging operations in the region of the project, and the Licensee shall advance to the United States Geological Survey the amount of funds estimated to be necessary for such supervision, or cooperation for such periods as may mutually agreed upon. The Licensee shall keep accurate and sufficient records of the foregoing determinations to the satisfaction of the Commission, and shall make return of such records annually at such time and in such form as the Commission may prescribe.

Article 9. The Licensee shall, after notice and opportunity for hearing, install additional capacity or make other changes in the project as directed by the Commission, to the extent that it is economically sound and in the public interest to do so.

Article 10. The Licensee shall, after notice and opportunity for hearing, coordinate the operation of the project, electrically and hydraulically, with such other projects or

power systems and in such manner as the Commission may direct in the interest of power and other beneficial public uses of water resources, and on such conditions concerning the equitable sharing of benefits by the Licensee as the Commission may order.

Article 11. Whenever the Licensee is directly benefited by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement, the Licensee shall reimburse the owner of the headwater improvement for such part of the annual charges for interest, maintenance, and depreciation thereof as the Commission shall determine to be equitable, and shall pay to the United States the cost of making such determination as fixed by the Commission. For benefits provided by a storage reservoir or other headwater improvement of the United States, the Licensee shall pay to the Commission the amounts for which it is billed from time to time for such headwater benefits and for the cost of making the determinations pursuant to the then current regulations of the Commission under the Federal Power Act.

Article 12. The United States specifically retains and safeguards the right to use water in such amount, to be determined by the Secretary of the Army, as may be necessary for the purposes of navigation on the navigable waterway affected; and the operations of the Licensee, so far as they affect the use, storage and discharge from storage of waters affected by the license, shall at all times be controlled by such reasonable rules and regulations as the Secretary of the Army may prescribe in the interest of navigation, and as the Commission may prescribe for the protection of life, health, and property, and in the interest of the fullest practicable conservation and utilization of such waters for power purposes and for other beneficial public uses, including recreational purposes, and the Licensee shall release water from the project reservoir at such rate in cubic feet per second, or such volume in acre-feet per specified period of time, as the Secretary of the Army may prescribe in the interest of navigation, or as the Commission may prescribe for the other purposes hereinbefore mentioned.

Article 13. On the application of any person, association, corporation, Federal agency, State or municipality, the Licensee shall permit such reasonable use of its reservoir or other project properties, including works, lands and water rights, or parts thereof, as may be ordered by the Commission, after notice and opportunity for hearing, in the interests of comprehensive development of the waterway or waterways involved and the conservation and utilization of the water resources of the region for water supply or for the purposes of steam-electric, irrigation, industrial, municipal or similar uses. The Licensee shall receive reasonable compensation for use of its reservoir or other project properties or parts thereof for such purposes, to include at least full reimbursement for any damages or expenses which the joint use causes the Licensee to incur. Any such compensation shall be fixed by the Commission either by approval of an agreement between the Licensee and the party or parties benefiting or after notice and opportunity

for hearing. Applications shall contain information in sufficient detail to afford a full understanding of the proposed use, including satisfactory evidence that the applicant possesses necessary water rights pursuant to applicable State law, or a showing of cause why such evidence cannot concurrently be submitted, and a statement as to the relationship of the proposed use to any State or municipal plans or orders which may have been adopted with respect to the use of such waters.

Article 14. In the construction or maintenance of the project works, the Licensee shall place and maintain suitable structures and devices to reduce to a reasonable degree the liability of contact between its transmission lines and telegraph, telephone and other signal wires or power transmission lines constructed prior to its transmission lines and not owned by the Licensee, and shall also place and maintain suitable structures and devices to reduce to a reasonable degree the liability of any structures or wires falling or obstructing traffic or endangering life. None of the provisions of this article are intended to relieve the Licensee from any responsibility or requirement which may be imposed by any other lawful authority for avoiding or eliminating inductive interference.

Article 15. The Licensee shall, for the conservation and development of fish and wildlife resources, construct, maintain, and operate, or arrange for the construction, maintenance, and operation of such reasonable facilities, and comply with such reasonable modifications of the project structures and operation, as may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior or the fish and wildlife agency or agencies of any State in which the project or a part thereof is located, after notice and opportunity for hearing.

Article 16. Whenever the United States shall desire, in connection with the project, to construct fish and wildlife facilities or to improve the existing fish and wildlife facilities at its own expense, the Licensee shall permit the United States or its designated agency to use, free of cost, such of the Licensee's lands and interests in lands, reservoirs, waterways and project works as may be reasonably required to complete such facilities or such improvements thereof. In addition, after notice and opportunity for hearing, the Licensee shall modify the project operation as may be reasonably prescribed by the Commission in order to permit the maintenance and operation of the fish and wildlife facilities constructed or improved by the United States under the provisions of this article. This article shall not be interpreted to place any obligation on the United States to construct or improve fish and wildlife facilities or to relieve the Licensee of any obligation under this license.

Article 17. The Licensee shall construct, maintain, and operate, or shall arrange for the construction, maintenance, and operation of such reasonable recreational facilities, including modifications thereto, such as access roads, wharves, launching ramps, beaches, picnic and camping areas, sanitary facilities, and utilities, giving consideration

to the needs of the physically handicapped, and shall comply with such reasonable modifications of the project, as may be prescribed hereafter by the Commission during the term of this license upon its own motion or upon the recommendation of the Secretary of the Interior or other interested Federal or State agencies, after notice and opportunity for hearing.

Article 18. So far as is consistent with proper operation of the project, the Licensee shall allow the public free access, to a reasonable extent, to project waters and adjacent project lands owned by the Licensee for the purpose of full public utilization of such lands and waters for navigation and for outdoor recreational purposes, including fishing and hunting: Provided, That the Licensee may reserve from public access such portions of the project waters, adjacent lands, and project facilities as may be necessary for the protection of life, health, and property.

Article 19. In the construction, maintenance, or operation of the project, the Licensee shall be responsible for, and shall take reasonable measures to prevent, soil erosion on lands adjacent to streams or other waters, stream sedimentation, and any form of water or air pollution. The Commission, upon request or upon its own motion, may order the Licensee to take such measures as the Commission finds to be necessary for these purposes, after notice and opportunity for hearing.

Article 20. The Licensee shall clear and keep clear to an adequate width lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which results from the clearing of lands or from the maintenance or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed. All clearing of the lands and disposal of the unnecessary material shall be done with due diligence and to the satisfaction of the authorized representative of the Commission and in accordance with appropriate Federal, State, and local statutes and regulations.

Article 21. Material may be dredged or excavated from, or placed as fill in, project lands and/or waters only in the prosecution of work specifically authorized under the license; in the maintenance of the project; or after obtaining Commission approval, as appropriate. Any such material shall be removed and/or deposited in such manner as to reasonably preserve the environmental values of the project and so as not to interfere with traffic on land or water. Dredging and filling in a navigable water of the United States shall also be done to the satisfaction of the District Engineer, Department of the Army, in charge of the locality.

Article 22. Whenever the United States shall desire to construct, complete, or improve navigation facilities in connection with the project, the Licensee shall convey to

the United States, free of cost, such of its lands and rights-of-way and such rights of passage through its dams or other structures, and shall permit such control of its pools, as may be required to complete and maintain such navigation facilities.

Article 23. The operation of any navigation facilities which may be constructed as a part of, or in connection with, any dam or diversion structure constituting a part of the project works shall at all times be controlled by such reasonable rules and regulations in the interest of navigation, including control of the level of the pool caused by such dam or diversion structure, as may be made from time to time by the Secretary of the Army.

Article 24. The Licensee shall furnish power free of cost to the United States for the operation and maintenance of navigation facilities in the vicinity of the project at the voltage and frequency required by such facilities and at a point adjacent thereto, whether said facilities are constructed by the Licensee or by the United States.

Article 25. The Licensee shall construct, maintain, and operate at its own expense such lights and other signals for the protection of navigation as may be directed by the Secretary of the Department in which the Coast Guard is operating.

Article 26. Timber on lands of the United States cut, used, or destroyed in the construction and maintenance of the project works, or in the clearing of said lands, shall be paid for, and the resulting slash and debris disposed of, in accordance with the requirements of the agency of the United States having jurisdiction over said lands. Payment for merchantable timber shall be at current stumpage rates, and payment for young growth timber below merchantable size shall be at current damage appraisal values. However, the agency of the United States having jurisdiction may sell or dispose of the merchantable timber to others than the Licensee: Provided, That timber so sold or disposed of shall be cut and removed from the area prior to, or without undue interference with, clearing operations of the Licensee and in coordination with the Licensee's project construction schedules. Such sale or disposal to others shall not relieve the Licensee of responsibility for the clearing and disposal of all slash and debris from project lands.

Article 27. The Licensee shall do everything reasonably within its power, and shall require its employees, contractors, and employees of contractors to do everything reasonably within their power, both independently and upon the request of officers of the agency concerned, to prevent, to make advance preparations for suppression of, and to suppress fires on the lands to be occupied or used under the license. The Licensee shall be liable for and shall pay the costs incurred by the United States in suppressing fires caused from the construction, operation, or maintenance of the project works or of the works appurtenant or accessory thereto under the license.

Article 28. The Licensee shall interpose no objection to, and shall in no way prevent, the use by the agency of the United States having jurisdiction over the lands of

the United States affected, or by persons or corporations occupying lands of the United States under permit, of water for fire suppression from any stream, conduit, or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license, or the use by said parties of water for sanitary and domestic purposes from any stream, conduit, or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license.

Article 29. The Licensee shall be liable for injury to, or destruction of, any buildings, bridges, roads, trails, lands, or other property of the United States, occasioned by the construction, maintenance, or operation of the project works or of the works appurtenant or accessory thereto under the license. Arrangements to meet such liability, either by compensation for such injury or destruction, or by reconstruction or repair of damaged property, or otherwise, shall be made with the appropriate department or agency of the United States.

Article 30. The Licensee shall allow any agency of the United States, without charge, to construct or permit to be constructed on, through, and across those project lands which are lands of the United States such conduits, chutes, ditches, railroads, roads, trails, telephone and power lines, and other routes or means of transportation and communication as are not inconsistent with the enjoyment of said lands by the Licensee for the purposes of the license. This license shall not be construed as conferring upon the Licensee any right of use, occupancy, or enjoyment of the lands of the United States other than for the construction, operation, and maintenance of the project as stated in the license.

Article 31. In the construction and maintenance of the project, the location and standards of roads and trails on lands of the United States and other uses of lands of the United States, including the location and condition of quarries, borrow pits, and spoil disposal areas, shall be subject to the approval of the department or agency of the United States having supervision over the lands involved.

Article 32. The Licensee shall make provision, or shall bear the reasonable cost, as determined by the agency of the United States affected, of making provision for avoiding inductive interference between any project transmission line or other project facility constructed, operated, or maintained under the license, and any radio installation, telephone line, or other communication facility installed or constructed before or after construction of such project transmission line or other project facility and owned, operated, or used by such agency of the United States in administering the lands under its jurisdiction.

Article 33. The Licensee shall make use of the Commission's guidelines and other recognized guidelines for treatment of transmission line rights-of-way, and shall clear

such portions of transmission line rights-of-way across lands of the United States as are designated by the officer of the United States in charge of the lands; shall keep the areas so designated clear of new growth, all refuse, and inflammable material to the satisfaction of such officer; shall trim all branches of trees in contact with or liable to contact the transmission lines; shall cut and remove all dead or leaning trees which might fall in contact with the transmission lines; and shall take such other precautions against fire as may be required by such officer. No fires for the burning of waste material shall be set except with the prior written consent of the officer of the United States in charge of the lands as to time and place.

Article 34. The Licensee shall cooperate with the United States in the disposal by the United States, under the Act of July 31, 1947, 61 Stat. 681, as amended (30 U.S.C. sec. 601, *et seq.*), of mineral and vegetative materials from lands of the United States occupied by the project or any part thereof: Provided, That such disposal has been authorized by the Commission and that it does not unreasonably interfere with the occupancy of such lands by the Licensee for the purposes of the license: Provided further, That in the event of disagreement, any question of unreasonable interference shall be determined by the Commission after notice and opportunity for hearing.

Article 35. If the Licensee shall cause or suffer essential project property to be removed or destroyed or to become unfit for use, without adequate replacement, or shall abandon or discontinue good faith operation of the project or refuse or neglect to comply with the terms of the license and the lawful orders of the Commission mailed to the record address of the Licensee or its agent, the Commission will deem it to be the intent of the Licensee to surrender the license. The Commission, after notice and opportunity for hearing, may require the Licensee to remove any or all structures, equipment and power lines within the project boundary and to take any such other action necessary to restore the project waters, lands, and facilities remaining within the project boundary to a condition satisfactory to the United States agency having jurisdiction over its lands or the Commission's authorized representative, as appropriate, or to provide for the continued operation and maintenance of nonpower facilities and fulfill such other obligations under the license as the Commission may prescribe. In addition, the Commission in its discretion, after notice and opportunity for hearing, may also agree to the surrender of the license when the Commission, for the reasons recited herein, deems it to be the intent of the Licensee to surrender the license.

Article 36. The right of the Licensee and of its successors and assigns to use or occupy waters over which the United States has jurisdiction, or lands of the United States under the license, for the purpose of maintaining the project works or otherwise, shall absolutely cease at the end of the license period, unless the Licensee has obtained a new license pursuant to the then existing laws and regulations, or an annual license under the terms and conditions of this license.

Article 37. The terms and conditions expressly set forth in the license shall not be construed as impairing any terms and conditions of the Federal Power Act which are not expressly set forth herein.

APPENDIX A

Water Quality Certificate Conditions for the Coosa River Project Issued By the Alabama Department of Environmental Management on July 1, 2005

Weiss Dam Development and Weiss By-Pass Spillway

LIMITATIONS

1. The operation of the Weiss Dam development, including the operation of the turbines, shall be managed such that no less than 4.0 mg/l of dissolved oxygen (D.O.) shall be maintained at all times at the monitoring locations prescribed herein. Management required to maintain the 4.0 mg/l dissolved oxygen criterion shall be implemented.

COMPLIANCE SCHEDULE

2. Alabama Power Company shall develop and implement measures to increase the D.O. downstream of project discharges to comply with the limitations herein through structural and/or operational modifications at the project within 18 months of a new license for the Coosa Project by the Federal Energy Regulatory Commission (FERC).

MONITORING AND REPORTING

3. The tailrace monitor used to determine compliance with paragraph 1. above shall be placed in the tailrace of Weiss dam powerhouse on the west bank at latitude 34° 07' 49"N and longitude 85° 47' 40"W approximately 500 feet downstream from the powerhouse. The monitor downstream of the Weiss By-Pass spillway shall be located at approximately latitude 34° 10' 11"N and longitude 85° 45' 04"W approximately 1200 feet downstream of the spillway. The monitor in the Weiss Dam tailrace shall record dissolved oxygen and temperature at 60-minute intervals during periods of generation following one continuous hour of generation beginning of May 1 and extending through September 30. The monitor in the Weiss Dam By-Pass shall record dissolved oxygen and temperature continuously at 60-minute intervals from May 1 through

September 30. During flood events, the monitoring may be temporarily discontinued until tailrace elevations return to normal.

4. The monitoring program shall begin within 18 months following the effective date of issuance of a new license for the Coosa Project if the effective date is within the prescribed monitoring period. If the effective date of the license is not within the prescribed monitoring period, monitoring shall begin the following May 1. The monitoring program shall continue for a period of three years.
5. The monitoring equipment shall receive adequate and frequent maintenance and calibration to assure proper operation. The dissolved oxygen monitoring equipment will be calibrated at an acceptable frequency using the manufacture's recommendations, the Winkler Method, Method 360.2 of EPA's Method for Chemical Analysis of Water and Wastes, latest edition, or other equivalent methods.
6. Dissolved oxygen and temperature monitoring reports shall be submitted with appropriate certifications to the ADEM within 90 days following the end of the annual monitoring period. Following the final year of monitoring, the complete set of data shall be submitted to ADEM for review and comment prior to submittal to the FERC. In addition to dissolved oxygen and temperature data, the monitoring reports shall specify whether turbines were in operation at the time of the Weiss tailrace dissolved oxygen and temperature measurements and the discharge rate of water flow passing through each turbine at the time of the measurements. For the Weiss By-Pass spillway, the flow passing over the spillway shall be reported with each dissolved oxygen and temperature measurement. Monitoring reports shall be submitted in an electronic form compatible with the MicrosoftTM Excel and Word software.
7. An assessment of the effects of the operation of the Weiss Dam development on the State of Alabama's water quality standards shall be conducted using the results of the monitoring as described in the previous paragraphs. If the monitoring results do not indicate substantial compliance with the State of Alabama water quality standards (maintenance of a D.O. concentration of 4.0 mg/l or greater), Alabama Power Company shall develop and implement measures to ensure compliance with the D.O. criterion through

structural and/or operational modifications at the project as prescribed in paragraph 2. The assessment shall be filed with ADEM within 6 months following the end of the three year monitoring period. As a part of the assessment Alabama Power Company shall furnish, at the Department's request, other data and information that may be available but not expressly required in this monitoring plan.

Neely Henry Development

LIMITATIONS

1. The operation of the Neely Henry development, including the operation of the turbines, shall be managed such that no less than 4.0 mg/l of dissolved oxygen (D.O.) shall be maintained at all times at the monitoring location prescribed herein. Management required to maintain the 4.0 mg/l dissolved oxygen criterion shall be implemented.

COMPLIANCE SCHEDULE

2. Alabama Power Company shall develop and implement measures to increase the D.O. downstream of project discharges to comply with the limitations herein through structural and/or operational modifications at the project within 18 months of a new license for the Coosa Project by the Federal Energy Regulatory Commission (FERC).

MONITORING AND REPORTING

3. The tailrace monitor used to determine compliance with paragraph 1. above shall be placed in the tailrace of Neely Henry dam powerhouse on the east bank at latitude 33° 46' 52"N and longitude 86° 02' 59"W approximately 1600 feet downstream from the powerhouse. The monitor in the Neely Henry tailrace shall record dissolved oxygen and temperature at 60-minute intervals during periods of generation following one continuous hour of generation from May 1 through September 30. During flood events, the monitoring may be temporarily discontinued until tailrace elevations return to normal.

4. The monitoring program shall begin within 18 months following the effective date of issuance of a new license for the Coosa Project if the effective date is within the prescribed monitoring period. If the effective date of the license is not within the prescribed monitoring period, monitoring shall begin the following May 1. The monitoring program shall continue for a period of three years.
5. The monitoring equipment shall receive adequate and frequent maintenance and calibration to assure proper operation. The dissolved oxygen monitoring equipment will be calibrated at an acceptable frequency using the manufacture's recommendations, the Winkler Method, Method 360.2 of EPA's Method for Chemical Analysis of Water and Wastes, latest edition, or other equivalent methods.
8. Dissolved oxygen and temperature monitoring reports shall be submitted with appropriate certifications to the ADEM within 90 days following the end of the annual monitoring period. Following the final year of monitoring, the complete set of data shall be submitted to ADEM for review and comment prior to submittal to the FERC. In addition to dissolved oxygen and temperature data, the monitoring reports shall specify whether turbines were in operation at the time of the Neely Henry tailrace dissolved oxygen and temperature measurements and the discharge rate of water flow passing through each turbine at the time of the measurements. Monitoring reports shall be submitted in an electronic form compatible with the MicrosoftTM Excel and Word software.
9. An assessment of the effects of the operation of the Neely Henry development on the State of Alabama's water quality standards shall be conducted using the results of the monitoring as described in the previous paragraphs. If the monitoring results do not indicate substantial compliance with the State of Alabama water quality standards (maintenance of a D.O. concentration of 4.0 mg/l or greater), Alabama Power Company shall develop and implement measures to ensure compliance with the D.O. criterion through structural and/or operational modifications at the project as prescribed in paragraph 2. The assessment shall be filed with ADEM within 6 months following the end of the three year monitoring period. As a part of the assessment Alabama Power

Company shall furnish, at the Department's request, other data and information that may be available but not expressly required in this monitoring plan.

Logan Martin Development

LIMITATIONS

1. The operation of the Logan Martin development, including the operation of the turbines, shall be managed such that no less than 4.0 mg/l of dissolved oxygen (D.O.) shall be maintained at all times at the monitoring location prescribed herein. Management required to maintain the 4.0 mg/l dissolved oxygen criterion shall be implemented.

COMPLIANCE SCHEDULE

2. Alabama Power Company shall develop and implement measures to increase the D.O. downstream of project discharges to comply with the limitations herein through structural and/or operational modifications at the project within 18 months of a new license for the Coosa Project by the Federal Energy Regulatory Commission (FERC).

MONITORING AND REPORTING

3. The tailrace monitor used to determine compliance with paragraph 1. above shall be placed in the tailrace of Logan Martin dam on the east bank at latitude 33° 24' 38"N and longitude 86° 20' 44"W approximately 5800 feet downstream from Logan Martin dam. The monitor shall record dissolved oxygen and temperature at 60-minute intervals during periods of generation following one continuous hour of generation from May 1 through November 30. During flood events, the monitoring may be temporarily discontinued until tailrace elevations return to normal.
4. The monitoring program shall begin within 18 months following the effective date of issuance of a new license for the Coosa Project if the effective date is within the prescribed monitoring period. If the effective date of the license is not within the prescribed monitoring

period, monitoring shall begin the following May 1. The monitoring program shall continue for a period of three years.

5. The monitoring equipment shall receive adequate and frequent maintenance and calibration to assure proper operation. The dissolved oxygen monitoring equipment will be calibrated at an acceptable frequency using the manufacture's recommendations, the Winkler Method, Method 360.2 of EPA's Method for Chemical Analysis of Water and Wastes, latest edition, or other equivalent methods.
6. Dissolved oxygen and temperature monitoring reports shall be submitted with appropriate certifications to the ADEM within 90 days following the end of the annual monitoring period. Following the final year of monitoring, the complete set of data shall be submitted to ADEM for review and comment prior to submittal to the FERC. In addition to dissolved oxygen and temperature data, the monitoring reports shall specify whether turbines were in operation at the time of the Logan Martin tailrace dissolved oxygen and temperature measurements and the discharge rate of water flow passing through each turbine at the time of the measurements. Monitoring reports shall be submitted in an electronic form compatible with the MicrosoftTM Excel and Word software.
7. An assessment of the effects of the operation of the Logan Martin development on the State of Alabama's water quality standards shall be conducted using the results of the monitoring as described in the previous paragraphs. If the monitoring results do not indicate substantial compliance with the State of Alabama water quality standards (maintenance of a D.O. concentration of 4.0 mg/l or greater), Alabama Power Company shall develop and implement measures to ensure compliance with the D.O. criterion through structural and/or operational modifications at the project as prescribed in paragraph 2. The assessment shall be filed with ADEM within 6 months following the end of the three year monitoring period. As a part of the assessment Alabama Power Company shall furnish, at the Department's request, other data and information that may be available but not expressly required in this monitoring plan.

Lay Development

LIMITATIONS

1. The operation of the Lay development, including the operation of the turbines, shall be managed such that no less than 4.0 mg/l of dissolved oxygen (D.O.) shall be maintained at all times at the monitoring location prescribed herein. Management required to maintain the 4.0 mg/l dissolved oxygen criterion shall be implemented.

COMPLIANCE SCHEDULE

2. Alabama Power Company shall develop and implement measures to increase the D.O. downstream of project discharges to comply with the limitations herein through structural and/or operational modifications at the project within 18 months of a new license for the Coosa Project by the Federal Energy Regulatory Commission (FERC).

MONITORING AND REPORTING

3. The tailrace monitor used to determine compliance with paragraph 1. above shall be placed in the tailrace of Lay dam powerhouse on the west bank at latitude 32° 57' 44"N and longitude 86° 31' 10"W approximately 300 feet downstream from Lay dam. The monitor shall record dissolved oxygen and temperature at 60-minute intervals during periods of generation following one continuous hour of generation from May 1 through September 30. During flood events, the monitoring may be temporarily discontinued until tailrace elevations return to normal.
4. The monitoring program shall begin within 18 months following the effective date of issuance of a new license for the Coosa Project if the effective date is within the prescribed monitoring period. If the effective date of the license is not within the prescribed monitoring period, monitoring shall begin the following May 1. The monitoring program shall continue for a period of three years.
5. The monitoring equipment shall receive adequate and frequent maintenance and calibration to assure proper operation. The

dissolved oxygen monitoring equipment will be calibrated at an acceptable frequency using the manufacture's recommendations, the Winkler Method, Method 360.2 of EPA's Method for Chemical Analysis of Water and Wastes, latest edition, or other equivalent methods.

6. Dissolved oxygen and temperature monitoring reports shall be submitted with appropriate certifications to the ADEM within 90 days following the end of the annual monitoring period. Following the final year of monitoring, the complete set of data shall be submitted to ADEM for review and comment prior to submittal to the FERC. In addition to dissolved oxygen and temperature data, the monitoring reports shall specify whether turbines were in operation at the time of the Lay development tailrace dissolved oxygen and temperature measurements and the discharge rate of water flow passing through each turbine at the time of the measurements. Monitoring reports shall be submitted in an electronic form compatible with the MicrosoftTM Excel and Word software.
7. An assessment of the effects of the operation of the Lay development on the State of Alabama's water quality standards shall be conducted using the results of the monitoring as described in the previous paragraphs. If the monitoring results do not indicate substantial compliance with the State of Alabama water quality standards (maintenance of a D.O. concentration of 4.0 mg/l or greater), Alabama Power Company shall develop and implement measures to ensure compliance with the D.O. criterion through structural and/or operational modifications at the project as prescribed in paragraph 2. The assessment shall be filed with ADEM within 6 months following the end of the three year monitoring period. As a part of the assessment Alabama Power Company shall furnish, at the Department's request, other data and information that may be available but not expressly required in this monitoring plan.

Mitchell Project

LIMITATIONS

1. The operation of the Mitchell project, including the operation of the turbines, shall be managed such that no less than 4.0 mg/l of

dissolved oxygen (D.O.) shall be maintained at all times at the monitoring location prescribed herein. Management required to maintain the 4.0 mg/l dissolved oxygen criterion shall be implemented.

COMPLIANCE SCHEDULE

2. Alabama Power Company shall develop and implement measures to increase the D.O. downstream of project discharges to comply with the limitations herein through structural and/or operational modifications at the project within 18 months of a new license for the Coosa Project by the Federal Energy Regulatory Commission (FERC).

MONITORING AND REPORTING

3. The tailrace monitor used to determine compliance with paragraph 1. above shall be placed in the tailrace of Mitchell dam powerhouse on the west bank at latitude 32° 48' 18"N and longitude 86° 26' 46"W approximately 100 feet downstream from Mitchell dam. The monitor shall record dissolved oxygen and temperature at 60-minute intervals during periods of generation following one continuous hour of generation from May 1 through September 30. During flood events, the monitoring may be temporarily discontinued until tailrace elevations return to normal.
4. The monitoring program shall begin within 18 months following the effective date of issuance of a new license for the Coosa Project if the effective date is within the prescribed monitoring period. If the effective date of the license is not within the prescribed monitoring period, monitoring shall begin the following May 1. The monitoring program shall continue for a period of three years.
5. The monitoring equipment shall receive adequate and frequent maintenance and calibration to assure proper operation. The dissolved oxygen monitoring equipment will be calibrated at an acceptable frequency using the manufacture's recommendations, the Winkler Method, Method 360.2 of EPA's Method for Chemical Analysis of Water and Wastes, latest edition, or other equivalent methods.

6. Dissolved oxygen and temperature monitoring reports shall be submitted with appropriate certifications to the ADEM within 90 days following the end of the annual monitoring period. Following the final year of monitoring, the complete set of data shall be submitted to ADEM for review and comment prior to submittal to the FERC. In addition to dissolved oxygen and temperature data, the monitoring reports shall specify whether turbines were in operation at the time of the Mitchell project tailrace dissolved oxygen and temperature measurements and the discharge rate of water flow passing through each turbine at the time of the measurements. Monitoring reports shall be submitted in an electronic form compatible with the MicrosoftTM Excel and Word software.

7. An assessment of the effects of the operation of the Mitchell project on the State of Alabama's water quality standards shall be conducted using the results of the monitoring as described in the previous paragraphs. If the monitoring results do not indicate substantial compliance with the State of Alabama water quality standards (maintenance of a D.O. concentration of 4.0 mg/l or greater), Alabama Power Company shall develop and implement measures to ensure compliance with the D.O. criterion through structural and/or operational modifications at the project as prescribed in paragraph 2. The assessment shall be filed with ADEM within 6 months following the end of the three year monitoring period. As a part of the assessment Alabama Power Company shall furnish, at the Department's request, other data and information that may be available but not expressly required in this monitoring plan.

Jordan Project

LIMITATIONS

1. The operation of the Jordan project, including the operation of the turbines, shall be managed such that no less than 4.0 mg/l of dissolved oxygen (D.O.) shall be maintained at all times at the monitoring location prescribed herein. Management required to maintain the 4.0 mg/l dissolved oxygen criterion shall be implemented.

COMPLIANCE SCHEDULE

2. Alabama Power Company shall develop and implement measures to increase the D.O. downstream of project discharges to comply with the limitations herein through structural and/or operational modifications at the project within 18 months of a new license for the Coosa Project by the Federal Energy Regulatory Commission (FERC).

MONITORING AND REPORTING

3. The tailrace monitor used to determine compliance with paragraph 1. above shall be placed in the tailrace of Jordan dam on the west bank at latitude 32° 36' 58"N and longitude 86° 15' 27"W approximately 800 feet downstream from Jordan dam. The monitor shall record dissolved oxygen and temperature at 60-minute intervals during periods of generation following one continuous hour of generation from May 1 through November 30. During flood events, the monitoring may be temporarily discontinued until tailrace elevations return to normal.
4. The monitoring program shall begin within 18 months following the effective date of issuance of a new license for the Coosa Project if the effective date is within the prescribed monitoring period. If the effective date of the license is not within the prescribed monitoring period, monitoring shall begin the following May 1. The monitoring program shall continue for a period of three years.
5. The monitoring equipment shall receive adequate and frequent maintenance and calibration to assure proper operation. The dissolved oxygen monitoring equipment will be calibrated at an acceptable frequency using the manufacture's recommendations, the Winkler Method, Method 360.2 of EPA's Method for Chemical Analysis of Water and Wastes, latest edition, or other equivalent methods.
6. Dissolved oxygen and temperature monitoring reports shall be submitted with appropriate certifications to the ADEM within 90 days following the end of the annual monitoring period. Following the final year of monitoring, the complete set of data shall be submitted to ADEM for review and comment prior to submittal to

the FERC. In addition to dissolved oxygen and temperature data, the monitoring reports shall specify whether turbines were in operation at the time of the Jordan project tailrace dissolved oxygen and temperature measurements and the discharge rate of water flow passing through each turbine at the time of the measurements. Monitoring reports shall be submitted in an electronic form compatible with the MicrosoftTM Excel and Word software.

7. An assessment of the effects of the operation of the Jordan project on the State of Alabama's water quality standards shall be conducted using the results of the monitoring as described in the previous paragraphs. If the monitoring results do not indicate substantial compliance with the State of Alabama water quality standards (maintenance of a D.O. concentration of 4.0 mg/l or greater), Alabama Power Company shall develop and implement measures to ensure compliance with the D.O. criterion through structural and/or operational modifications at the project as prescribed in paragraph 2. The assessment shall be filed with ADEM within 6 months following the end of the three year monitoring period. As a part of the assessment Alabama Power Company shall furnish, at the Department's request, other data and information that may be available but not expressly required in this monitoring plan.

Bouldin Development

LIMITATIONS

1. The operation of the Bouldin Development, including the operation of the turbines, shall be managed such that no less than 4.0 mg/l of dissolved oxygen (D.O.) shall be maintained at all times at the monitoring location prescribed herein. Management required to maintain the 4.0 mg/l dissolved oxygen criterion shall be implemented.

COMPLIANCE SCHEDULE

2. Alabama Power Company shall develop and implement measures to increase the D.O. downstream of project discharges to comply with the limitations herein through structural and/or operational modifications at the project within 18 months of a new license for

the Coosa Project by the Federal Energy Regulatory Commission (FERC).

MONITORING AND REPORTING

3. The tailrace monitor used to determine compliance with paragraph 1. above shall be placed in the tailrace of Bouldin dam on the west bank at latitude 32° 34' 58"N and longitude 86° 16' 57"W approximately 100 feet downstream from Bouldin dam. The monitor shall record dissolved oxygen and temperature at 60-minute intervals during periods of generation following one continuous hour of generation from May 1 through September 30. During flood events, the monitoring may be temporarily discontinued until tailrace elevations return to normal.
4. The monitoring program shall begin within 18 months following the effective date of issuance of a new license for the Coosa Project if the effective date is within the prescribed monitoring period. If the effective date of the license is not within the prescribed monitoring period, monitoring shall begin the following May 1. The monitoring program shall continue for a period of three years.
5. The monitoring equipment shall receive adequate and frequent maintenance and calibration to assure proper operation. The dissolved oxygen monitoring equipment will be calibrated at an acceptable frequency using the manufacture's recommendations, the Winkler Method, Method 360.2 of EPA's Method for Chemical Analysis of Water and Wastes, latest edition, or other equivalent methods.
6. Dissolved oxygen and temperature monitoring reports shall be submitted with appropriate certifications to the ADEM within 90 days following the end of the annual monitoring period. Following the final year of monitoring, the complete set of data shall be submitted to ADEM for review and comment prior to submittal to the FERC. In addition to dissolved oxygen and temperature data, the monitoring reports shall specify whether turbines were in operation at the time of the Bouldin development tailrace dissolved oxygen and temperature measurements and the discharge rate of water flow passing through each turbine at the time of the measurements.

Monitoring reports shall be submitted in an electronic form compatible with the MicrosoftTM Excel and Word software.

7. An assessment of the effects of the operation of the Bouldin development on the State of Alabama's water quality standards shall be conducted using the results of the monitoring as described in the previous paragraphs. If the monitoring results do not indicate substantial compliance with the State of Alabama water quality standards (maintenance of a D.O. concentration of 4.0 mg/l or greater), Alabama Power Company shall develop and implement measures to ensure compliance with the D.O. criterion through structural and/or operational modifications at the project as prescribed in paragraph 2. The assessment shall be filed with ADEM within 6 months following the end of the three year monitoring period. As a part of the assessment Alabama Power Company shall furnish, at the Department's request, other data and information that may be available but not expressly required in this monitoring plan.

The Department also certifies that there are no applicable effluent limitations nor other limitations imposed under Sections 301(b) or 302 or other standards imposed under Sections 306 or 307 of the Clean Water Act. This certification does not, however, exempt Alabama Power Company from requirements imposed under the National Pollutant Discharge Elimination System for other discharges at these facilities regulated by the Department.

APPENDIX B

Reasonable and Prudent Measures and Terms and Conditions included in the U.S. Fish and Wildlife Service's Biological Opinion for the Relicensing of the Coosa River Hydroelectric Project (No. 2146), June 10, 2012

REASONABLE AND PRUDENT MEASURES

Action (1) Alabama Power's Proposal for Operations

- a. Weiss: Reduce the probability of releasing water of poor quality down the Bypass;
- b. Logan Martin: Maintain (if adequate) and enhance (if not) water quality conditions in the tailrace to ensure listed mussels and snails are able to carry out basic life cycle requirements;
- c. Jordan: Adhere to RPMs [Reasonable and Prudent Measures] and T&Cs [Terms and Conditions] outlined in the 1995 BO [Biological Opinion];
- d. Project-wide: Reduce the effects of habitat fragmentation and Project operations by participating in the reintroductions and monitoring of listed aquatic species throughout the Coosa River system.

Action (2) Implementation of a Shoreline Management Plan (SMP)

- a. Reduce the impacts from activities permitted under the SMP by minimizing excessive shoreline erosion and preventing herbicides from entering the water;

Action (3) Implementation of a Wildlife Management Plan

- a. Ensure that RCW [Red-Cockaded Woodpecker] cavity trees are protected to the maximum extent possible during land management activities;
- b. Ensure that blue shiner and tulotoma habitat in Weogufka and Hatchet Creeks is protected from Alabama Power timber harvesting activities.

Action (4) Implementation of the Coosa River Project portion of the Alabama Drought Response Operations Proposal – ADROP

- a. Reduce the stranding/mortality rate of tulotoma in the Coosa River downstream of Jordan dam and follow the RMPs and T&C's from 2008 Biological Opinions;
- b. Minimize releases of water through Bouldin Dam during drought conditions;
- c. Identify how reservoir pool levels will be managed upstream of Jordan, primarily Lay Lake.

Action (5) Drawdown of Lay Lake

- a. Re-evaluate, in consultation with the Service and ADCNR [Alabama Department of Conservation and Natural Resources], the need to continue the biannual drawdown on a predetermined schedule. Whether a drawdown occurs biannually or during drought conditions, the following RPMs should be observed:
 - i. Increase the time which tulotoma and the rough horn snail will have to follow the waterline as water levels recede;
 - ii. Reduce the stranding/mortality rate of tulotoma and rough horn snail.

TERMS AND CONDITIONS

Action (1) Alabama Power's Proposal for Operations

- a. Weiss AMP [Adaptive Management Plan]: Minimize the temporary releases of warm or low DO [dissolved oxygen] waters in the initial flow releases by implementing the water quality monitoring plan as described in the AMP;
- b. Logan Martin AMP: Following the issuance of the FERC license, Alabama Power will develop and implement the DO improvement directives as listed in the 401 WQC issued by ADEM [Alabama Department of Environmental Management].

Alabama Power will also revise within 18 months the Logan Martin AMP to ensure that non-generation conditions are protective of listed species and begin developing plans and an implementation schedule, that is agreeable with the Service, to enhance DO during non-generation periods with the goal of ensuring the survival of listed mussels (and their hosts), snails, and fishes, and ensuring that they are able to carry out basic life cycle requirements.

- c. Project-wide: In cooperation with the agencies, Alabama Power will participate in studies, included, but not limited to, in situ (e.g., "cage experiments") and laboratory experiments, species reintroductions, and studies to evaluate habitat and water quality conditions in the Coosa River.

Action (2) Implementation of a Shoreline Management Plan (SMP)

a. Project-wide:

- i. All shorelines that are adjacent to, or could affect, listed species or CH [critical habitat] are to be designated as Sensitive Resource Lands under Alabama Power's Shoreline Classification System. The Sensitive Resource layer is to be addressed or updated at least annually, to account for new T&E [threatened and endangered] survey data or any new listing and/or CH designations;
- ii. Actively promote, through homeowner publications and/or articles in Alabama Power's newsletter (Shorelines), the benefits of using BMPs [Best Management Practices] and the proper use of EPA [Environmental Protection Agency] regulated herbicides and their effects on aquatic organisms;

b. Project-specific monitoring plans:

- i. Neely Henry: To ensure that listed species and CH are being protected in lower Big Canoe Creek, a baseline mussel and fish survey shall be conducted, within 36 months of the issuance of the license. This survey is to

include the location(s) and extent of extant mussel populations, general population estimates, and fishery IBIs [Index of Biotic Integrity]. In addition to biological information, shorelines should be mapped to document existing conditions (e.g., riparian zones distance and condition and areas with high erosion potential). The survey will establish a baseline and will be used to insure no further decline in the population of southern clubshell and habitat in lower Big Canoe Creek occurs.

- ii. Logan Martin: To ensure that listed species are being protected in lower Choccolocco Creek, a baseline mussel, snail, and fish survey shall be conducted within 36 months of the issuance of the license - similar to that in Big Canoe Creek. The survey will establish a baseline and will be used to insure no further decline in tulotoma, cylindrical lioplax, or painted rocksnail populations and habitat in lower Choccolocco Creek occurs.
- iii. Mitchell: To ensure the protection of the blue shiner and tulotoma snail in lower Hatchet and Weogufka Creeks, baseline surveys shall be conducted and completed, within the Project boundary, within 36 months following the issuance of the license. The surveys will determine the range and extent of tulotoma and blue shiner in lower Hatchet and Weogufka Creeks (within the Project boundary) and will be used to ensure that logging activities conducted on Project lands do not adversely affect CH or listed species.

Action (3) Implementation of a Wildlife Management Plan

- a. Implement procedures in the RCW Management Plan;
- b. In lower Hatchet and Weogufka Creeks, where tulotoma and blue shiners occur, all activities conducted under the Timber Management section of the WMP [Wildlife Management Plan] shall use the appropriate BMPs and SMZs [Streamside

Management Zones] for the environment and conditions being managed

Action (4) Implementation of the Coosa River Project portion of the Alabama Drought Response Operations Proposal – ADROP

- a. Maintain flow reductions at 67 cfs per day, and monitor water temperatures at multiple locations, agreed to by the Service, between Jordan dam and Corn Creek Shoals during drought conditions. Monitoring sites shall be located in areas where tulotoma occurs;
- b. All excess water in Jordan Bouldin Reservoir shall be used to maintain the wetted perimeter of the channel in the Coosa River below Jordan dam and not passed through Bouldin Dam, unless system reliability is jeopardized;
- c. Although Action (4) (ADROP) and Action (5) (Drawdown of Lay Lake) are completely different actions, the same level of incidental take is expected for both actions. Therefore, the T&Cs listed below are applicable to both Actions (4) and (5).
 - i. Studies shall be conducted to determine the extent of the margins that will be exposed in Yellow leaf Creek from the drawdown and rough horn snail population data shall be collected that can be used to estimate the population size within this area. Results of these studies must be suitable for use to develop methods for evaluating the effects on the rough hornsnail during future drawdown's and droughts;
 - ii. Each drawdown time shall be increased to three days. This will provide an approximate drawdown rate of less than 12 inches per day, which should provide tulotoma and rough hornsnail a better chance at following the waterline as reservoir levels decline;
 - iii. Efforts shall be made daily, during the initial drawdown and one day following the lowest point, to salvage all exposed individuals. All salvaged individuals shall be translocated to an area safe from drawdown levels and

the number of individuals shall be recorded and reported to the Service within 30 days following the completion of the action;

- iv. Shoreline surveys shall be conducted at all areas occupied by tulotoma and the rough hornsnail prior to and at the lowest point of the drawdown to determine the amount (e.g., acres) of exposed habitat.

Action (5) Drawdown of Lay Lake

- (a) Refer to the T&Cs listed under Action (4)(c).