

UNITED STATES OF AMERICA 129 FERC ¶ 62,201
FEDERAL ENERGY REGULATORY COMMISSION

Appalachian Power Company

Project No. 22 10-169

ORDER ISSUING NEW LICENSE

(December 15, 2009)

INTRODUCTION

1. On March 27, 2008, Appalachian Power Company (Appalachian Power), a unit of American Electric Power (AEP), filed an application for a new major license under sections 4(e) and 15 of the Federal Power Act (FPA),¹ for the continued operation and maintenance of the Smith Mountain Pumped Storage Project (Smith Mountain Project). The 636-megawatt (MW) project is located on the headwaters of the Roanoke River, a navigable waterway, in Bedford, Campbell, Franklin, and Pittsylvania counties, Virginia.² The project does not occupy any federal lands. As discussed below, I am issuing a new license for the project.

BACKGROUND

2. The Commission issued the original license for the project on April 1, 1960, and that license will expire on March 31, 2010.

3. The Commission published notice of the application for new license, accepting the license application, soliciting motions to intervene and protests, and soliciting comments, final recommendations, terms and conditions, and prescriptions in the *Federal Register* on August 7, 2008. American Rivers, Inc. (American Rivers); William C. Brush; Dominion Virginia Power; the Tri-County AEP Relicensing Committee (Tri-County Committee); and the U.S. Department of Commerce - National Oceanic and Atmospheric

¹16 U.S.C. §§ 797(e) and 808 (2006).

²The project is required to be licensed under FPA section 23(b)(1), 16 U.S.C. § 817(1)(2006), because the project is located on a navigable waterway of the United States. 23 F.P.C. 624 (1960).

Administration, National Marine Fisheries Service (NMFS) filed comments and motions to intervene.³ Comments and recommendations were also filed by the Virginia Department of Game and Inland Fisheries (Virginia DGIF), the Smith Mountain Lake Association, the U.S. Department of the Interior, and approximately 120 individuals.⁴

4. A draft Environmental Impact Statement (EIS) was prepared by Commission staff and issued on March 27, 2009. The draft EIS addressed the motions to intervene, comments, and recommendations filed in response to the August 7 notice. Thirty-six comments on the draft EIS were filed. The comments filed on the draft EIS were addressed in staff's final EIS issued on August 7, 2009. The motions to intervene, comments, and recommendations have been fully considered in determining whether, and under what conditions, to issue this license.⁵

5. On September 24, 2009, the Tri-County Committee filed a letter with the Commission stating that it intended to submit a motion or petition, including expert testimonies, by October 31, 2009, showing that the staff's recommended license articles in the final EIS will probably not be effective over the license term to: (a) control the spread of non-native aquatic vegetation in project waters; (b) prevent erosion from lake shorelines; and (c) manage the accumulation of debris and sedimentation from tributary streams, to the extent needed, for public safety. The Tri-County Committee stated that it intended to propose specific changes to the recommended license articles to assure effectiveness. In addition, the Tri-County Committee stated that it intended to submit an Offer of Settlement, as well as request a settlement conference to seek resolution of the issues. On December 9, 2009, the Tri-County Committee filed its motion to supplement the final EIS and Offer of Settlement. The supplement generally takes issue with the cumulative effects analysis in the final EIS, and recommends changes to the draft license articles that were appended to the final EIS. The Offer of Settlement is signed by the Natural Heritage Institute, on behalf of the Tri-County Committee.⁶

³The motions to intervene were timely and unopposed. Therefore, they were automatically granted under Rule 214 (c)(1) of the Commission's regulations. 18 C.F.R. § 385.214(c)(1)(2009).

⁴Approximately 90 individuals and other entities filed comments on Appalachian Power's proposed *Water Management Plan*, and approximately 25 individuals and other entities filed comments on the proposed *Aids to Navigation Plan*.

⁵ Comments on the draft EIS are addressed in Appendix D in the final EIS.

⁶ As the Commission explained in *Duke Energy Carolina LLC*, 123 FERC ¶ 61,069 (2008), an Offer of Settlement that is unilateral and is not supported by the licensee and/or the federal and state resource agencies is not a settlement of the issues

6. The Tri-County Committee has been an active participant in this licensing proceeding since Appalachian Power initiated pre-filing consultation with state agencies in October 2002.⁷ The Tri-County Committee actively participated over the years in the Integrated Licensing Process, as well as the licensing proceeding that was initiated with the filing of the license application. Moreover, it filed a motion to intervene in response to the Commission's August 7, 2008 notice, and it filed comments on the draft EIS raising similar concerns, which were addressed in the final EIS and further addressed below. While the Tri-County Committee contends that their filing provides new evidence that shows that the proposed new license articles will not protect and enhance the beneficial uses of the project over the term of the new license, for the most part, it simply reiterates the Tri-County Committee's comments in its previous filings. The issues it raises were generally addressed in the response to comments section of the final EIS. Moreover, this order further addresses and modifies certain aspects of the draft license articles included in the final EIS to address the areas of concern raised by the Tri-County Committee in its Offer of Settlement filing. Therefore, any delay in issuing this license is not warranted.

PROJECT DESCRIPTION

7. The Smith Mountain Project comprises an existing, two-dam, two reservoir combination pumped storage and conventional hydroelectric project. The pumped storage development is known as the Smith Mountain development, while the conventional hydro development is known as the Leesville development.

A. Project Facilities

8. Smith Mountain Development – The Smith Mountain development consists of a 235-foot-high, 816-foot-long concrete arch dam having a crest elevation of 812.0 feet National Geodetic Vertical Datum (NGVD); a 20,260-acre reservoir (Smith Mountain Lake) with a normal water surface elevation of 795.0 feet NGVD; and a powerhouse with five generating units (two conventional and three reversible pump/turbine units). At each end of the dam is a 100-foot-long overflow spillway, each having a crest elevation of 795.0 feet NGVD and a 25,000-cfs hydraulic capacity at an elevation of 812.0 feet NGVD. The powerhouse, which houses the five generating units, is located immediately downstream from the toe of the dam. Five intakes, which provide flow to two 20-foot-diameter and three 26-foot-diameter steel penstocks leading to the development's turbines, penetrate the concrete arch dam at three different elevations. The intakes are

pertaining to the project, and, therefore, cannot be viewed as a settlement agreement.

⁷ As the Tri-County Committee points out in its filing, it has filed comments on October 6, 2008, December 11, 2008, and May 11, 2009.

equipped with trashracks that have a clear spacing of 4 inches. The five generating units have a total installed capacity of 586 MW. The Smith Mountain development has a maximum hydraulic capacity of 47,400 cubic feet per second (cfs) (with five units operating) and a pumping capacity of 15,810 cfs (with three units operating). Power from the development is transmitted to AEP's interconnected system through (a) a 600,000-kilovolt-ampere (kVA) substation located in the vicinity of the powerhouse, and (b) double-circuit, 138-kilovolt (kV) tie-in lines that vary in length from 946 to 998 feet.

9. Leesville Development – The Leesville development, which serves as the lower reservoir for the Smith Mountain development, consists of a 94-foot-high, 980-foot-long concrete gravity dam, having a crest elevation of 615.67 feet NGVD; a 3,260-acre reservoir (Leesville Lake), with a water surface elevation of 613.0 feet NGVD; and a powerhouse containing two turbine-generating units. Near the center of the dam are four gated spillway sections totaling 224 feet in length, each equipped with a Taintor gate measuring 50 feet wide by 35 feet high. The crest elevation of the spillway sections is 578.0 feet NGVD, resulting in a total spillway capacity of 175,100 cfs at an elevation of 615.67 feet NGVD. The development's generating equipment and associated controls are housed in the powerhouse that is integral to the dam. There are two intakes equipped with trashracks having a clear bar spacing of 6½ inches, which supply water to the two turbine-generating units. The two units have a total installed capacity of 50 MW. The Leesville development has a maximum hydraulic capacity of 9,000 cfs. Power from the development is transmitted to AEP's interconnected system through (a) a 50,000-kVA substation located in the vicinity of the powerhouse, and (b) a 317-foot-long, double-circuit, 138-kilovolt (kV) tie-in line.

B. Current Project Operation

10. The Smith Mountain development operates as a peaking facility, with generation occurring during peak usage periods. The Leesville development operates in an auto-cycling mode, whereby the units are run for 18 minutes once every 2 hours to provide flow to the Roanoke River downstream from the project. During off-peak periods when there is no generation occurring at the Smith Mountain development, the water that passed through the Smith Mountain development to Leesville Lake is pumped back into Smith Mountain Lake to be used again for generation during the next on-peak demand period.

11. There are currently no license requirements related to lake levels for either Smith Mountain or Leesville Lakes. However, Appalachian Power, when inflows permit, voluntarily maintains Smith Mountain Lake at its normal operating level of 795.0 feet NGVD for power generation and recreation. Generation at the Smith Mountain development results in a daily 2-foot drop in the level of Smith Mountain Lake. This volume of water flowing into Leesville Lake increases the operating level for the Leesville development by 13 feet, from the minimum level of 600.0 feet to 613.0 feet NGVD. Generation at Leesville results in a 5.4-foot fluctuation in the development's

tailwater elevation, from 531.5 feet to 536.9 feet NGVD. Depending on the generation needs of AEP's system and inflows to the project, the levels of both lakes and the number of units operating at any one time can vary.

12. Under high inflow conditions, and in coordination with the U.S. Army Corps of Engineers (Corps), Appalachian Power modifies project operation to assist with flood control. The Leesville development is operated to limit flood flows at the Town of Altavista, Virginia⁸ to 20,000 cfs. Under low-flow conditions (when inflow is less than outflow), the water level in Smith Mountain Lake drops. While the lake level decreases, generation continues with drawdowns still approaching 2 feet.

13. Article 29 of the current license requires Appalachian Power to release a weekly average minimum flow of 650 cfs from the Leesville development to protect aquatic habitat and resources downstream in the Roanoke River,⁹ except during extreme low-flow conditions when the flow can be temporarily reduced in consultation with resource agencies and other interested stakeholders.¹⁰ Article 34 of the current license requires that Appalachian Power release, from the Leesville development, a minimum average daily flow of 60 cfs, with an increase up to 2,000 cfs during the spring (mid-April to June 1) striped bass spawning season.¹¹

C. Shoreline Management and Project Recreation Facilities

14. On July 5, 2005, the Commission approved a shoreline management plan (SMP) for the Smith Mountain Project.¹² The SMP provides guidelines and regulations for shoreline development along Smith Mountain and Leesville Lakes. The SMP has been amended on two occasions since it was originally approved.¹³

15. There are no recreation facilities specifically designated as project facilities in the existing license. However, Appalachian Power owns and manages: (a) the Smith Mountain Lake Visitor's Center and Picnic Area; and (b) the Leesville Dam Picnic Areas

⁸Alta Vista is approximately 11.5 miles downstream of the Leesville dam.

⁹*Appalachian Power Co.*, 23 F.P.C. at 624-29.

¹⁰*Appalachian Power Co.*, 91 FERC ¶ 62,124 (2000).

¹¹*Appalachian Power Co.*, 55 F.P.C. at 1892-93.

¹²*Appalachian Power Co.*, 112 FERC ¶ 61,026 (2005).

¹³*Appalachian Power Co.*, 115 FERC ¶ 62,071 (2006); and *Appalachian Power Co.*, 118 FERC ¶ 62,149 (2007).

and Public Boat Launch (managed in coordination with the Virginia DGIF. In addition, Appalachian Power owns and the Virginia DGIF manages: (a) the Hardy's Ford Public Boat Launch; (b) the Hales Ford Public Boat Launch; (c) the Scrugg's Public Boat Launch; (d) the Penhook Boat Dock and Public Boat Launch; (e) the Anthony Ford Public Boat Launch; (f) the Myers Creek Public Boat Launch; and (g) the Leesville Dam Fishing Platform(s) along the tailrace. As noted below, the Smith Mountain Lake Visitor's Center and Picnic Area is the only one of these facilities currently located within the project boundary.

D. Project Boundary

16. The current project boundary for the Smith Mountain Project encompasses about 25,600 acres of land and water,¹⁴ and encloses the dams, reservoirs, intakes, penstocks, powerhouses, primary transmission facilities, tailraces, and the Smith Mountain Lake Visitor's Center and Picnic Area. The project boundary for the Smith Mountain development generally follows the 800.0-foot contour around the perimeter of Smith Mountain Lake, which is 5 feet above the normal operating level of 795.0 feet NGVD. For the Leesville development, the project boundary generally follows the 620.0-foot contour around Leesville Lake, which is 7 feet above the upper operating level of 613.0 feet NGVD. Excluding the lakes, there are a total of about 2,080 acres of land within the project boundary.

E. Proposed Measures

17. Appalachian Power proposes no new development or modifications to project operation other than to release flows downstream of the Leesville development in accordance with its proposed *Water Management Plan*.¹⁵ Appalachian Power also proposes to implement several resource management plans,¹⁶ including those for: (1) sedimentation and erosion monitoring; (2) water quality monitoring; (3) the federally endangered Roanoke logperch (*Percina rex*); (4) littoral zone aquatic habitat in both lakes; (5) nuisance/ invasive aquatic vegetation; (6) recreation and shoreline management; (7) navigation aids; (8) floating debris on the lakes; and (9) cultural resources. Appalachian Power also proposes to modify the current project boundary by expanding it to include the existing recreation facilities identified above, and some

¹⁴Final EIS at 22-23.

¹⁵See Attachment 2, *Revised Management Plans*, in Appalachian Power's response to Commission staff's May 16, 2008 request for additional information, filed July 15, 2008.

¹⁶Final EIS at 23-29; see also Attachment 2, *Revised Management Plans*, in Appalachian Power's July 15, 2008 filing.

additional parcels of land designated in its proposed *Recreation Management Plan* for future recreation.

WATER QUALITY CERTIFICATION

18. Under section 401(a)(1) of the Clean Water Act (CWA),¹⁷ 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 (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 state certification shall become a condition of any federal license that authorizes construction or operation of the project.¹⁸

19. On March 25, 2008, Appalachian Power applied to the Virginia Department of Environmental Quality (Virginia DEQ) for certification for the Smith Mountain Project, which Virginia DEQ received on March 26, 2008. On October 31, 2008, Virginia DEQ issued its certification for the Smith Mountain Project. The certification includes seven project-specific conditions (Part I, conditions A through G) and 17 general conditions (Part II, conditions A through Q), which are set forth in Appendix A of this order and incorporated into the license by ordering paragraph D.

A. Project-specific Conditions (Part I)

20. Condition A, of the project-specific conditions, generally authorizes the discharge of water, for the purpose of hydropower production, from: (a) Leesville Lake to the Roanoke River; (b) Smith Mountain Lake to Leesville Lake; and (c) Leesville Lake back into Smith Mountain Lake (pumped water). Condition C contains general requirements regarding: (a) maintenance of beneficial uses and passage of flows downstream to protect uses; (b) prevention of fuel and other pollutant spills; (c) format for reports submitted pursuant to the certification; and (d) notification procedures for fish kills, fuel spills, and other environmental threats

21. Condition D: (a) establishes minimum instream flows for the Roanoke River downstream from Leesville, and requires water releases at Leesville to meet target flows at a downstream USGS gage; and (b) requires the licensee to conduct a study to determine the relative effect of providing flows through auto-cycling versus continuous releases and, based on the study results, to make changes to downstream releases if appropriate. This condition is discussed in more detail below.

1733 U.S.C. § 1341(a)(1) (2006).

1833 U.S.C. § 1341(d) (2006).

22. Condition E provides for: (a) temporary deviations from the flow requirements of Condition D if certain conditions are met; and (b) the licensee to hold a public meeting after 5 years to take comments on the flow regime and to report those comments to Virginia DEQ. Condition F requires the licensee to: (a) operate the project from July through September to minimize or eliminate violations of state water quality standards for dissolved oxygen (DO) downstream from the Smith Mountain dam; (b) develop a plan to monitor DO in Leesville Lake and downstream from the Smith Mountain dam; and (c) file a report after five years of monitoring, including recommendations for changes in project operations, if warranted. Condition G requires the licensee to monitor storage levels, inflows to the project, lake elevations, and daily releases from the project, and to file an annual report with this information.

23. The plans required by the certification must be filed with the Virginia DEQ for approval. The certification does not require that these plans be filed with the Commission. Therefore, I have included Article 401 in this license, which requires the licensee to: (a) file, for Commission approval, the plans required by certain certification conditions; (b) file with the Commission copies of the reports required by certain certification conditions; (c) notify the Commission of planned and unplanned deviations from license requirements; and (d) file an amendment application(s) if long-term changes to the license are contemplated.

1. Certification term

24. Condition B of the certification states that the certification is valid for 15 years from the effective date of the certification. The Virginia DEQ considers the effective date to be the date Appalachian Power receives a new license for the project. Several other conditions of the certification also would allow for⁴ termination of the certification under certain conditions.¹⁹

25. The CWA requires a water quality certification in order for the Commission to *issue* a license. There is no requirement that a licensee seek a certification during the term of its license, absent an amendment application that would require a certification. Therefore, any termination of the certification during the license term would end the conditions of the certification, but would have no effect on the validity of the license.

26. In its September 24, 2008 comments on the license application, the Virginia DGIF expressed concern over the certification's term of 15 years and the future of the flow conditions included in the certification when the certification expires after 15 years. To ensure that the fish and wildlife resources associated with the Roanoke River downstream from the project are adequately protected during the term of a new license, the final EIS

¹⁹See Part II, Conditions D, M, and N.

recommends that the certification's flow provisions be implemented for the duration of the license.²⁰

27. Article 404 requires Appalachian Power to file a revised water management plan for the project that includes the flow conditions and associated provisions outlined in the certification (Conditions D.2, D.5, D.6, and D.7).

2. Downstream flow management

28. As noted, Condition D.3 requires, among other things, that the licensee study the effect of providing flows through the current auto-cycling mode of operation versus a continuous release at the Leesville dam. Pursuant to this condition, Appalachian Power developed a draft study plan and submitted it to the Virginia DEQ on February 27, 2009, for approval by the Virginia Water Control Board (Control Board).²¹ This study plan was filed with the Commission on May 7, 2009.²² Staff reviewed the proposed study plan and, in the final EIS, concluded that it was not adequate to address the potential effects of flow releases for Leesville.²³

29. Staff recommended in the final EIS that the proposed study plan be revised. The additional recommended measures include: (a) expanding the study area to include the reach of the Roanoke River from the Leesville dam downstream to Altavista, Virginia; (b) conducting the study for 3 years, with additional field work in years 2 and 3 to collect realtime, empirical data on bank erosion, water quality, aquatic habitat, fish populations/communities, recreation (including angling), and public safety; (c) deploying level

²⁰Final EIS at 278-79.

²¹Though the certification does not become effective until a new license is issued for the project, the certification required that the study plan be submitted to the Control Board no later than March 1, 2009. The record of this proceeding contains no information as to whether, or under what conditions, the Control Board has approved the plan. Before implementing the plan, the licensee must obtain the Control Board's approval, as well as the Commission's.

²²In its filing, Appalachian Power requests that approval of the plan by the Commission not be a part of a new license. Appalachian Power argues that the Commission should defer to the Control Board regarding the approval of the plan. The Commission implements its relicensing processes within the framework of the FPA and its own regulations. The Commission can not defer to a third party its responsibility to administer compliance with any aspect of the federal license.

²³Final EIS at 279 and D-46 to D-50 (Appendix D).

loggers on the lower reach of Goose Creek²⁴ to quantify the effects of flow fluctuations related to Leesville releases on aquatic habitat in the creek;²⁵ and (d) performing limited quantitative measurements of riverbank erosion using bank pins.²⁶

30. The additional measures recommended by staff would: (a) expand the study's coverage to not only include the reach of river most affected by the auto-cycling operation at Leesville, but include an adjacent, downstream reach that could be used as a reference reach; (b) include a timeframe that is likely necessary to document actual changes in the river system that result from Leesville's flow release patterns; and (c) potentially provide useful information regarding the project's effect on movement and dispersal of the federally endangered Roanoke logperch (*Percina rex*) between Goose Creek and the Roanoke River. The information to be gained from staff's recommended additions to the certification's required flow study would assist in making decisions regarding the future operations of the project. Therefore, Article 40 1(a) requires Appalachian Power to file a revised flow study plan, for Commission approval, that includes the additional measures specified above. Article 40 1(b) requires Appalachian Power to file the 1-year report (required by the certification) for Commission review and approval.

B. General Conditions (Part II)

31. Condition A of the General Conditions requires the licensee to comply with all the conditions of the certification. Condition B does not permit the licensee to cease or restrict activities under the certification in order to comply with the terms of the certification. Condition C requires the licensee to take all reasonable steps to minimize or prevent affects associated with violations of the certification that may have an adverse affect on human health or the environment. Condition E permits an authorized agent of the Control Board to: (a) access the licensee's property and records pertaining to the certification conditions; (b) inspect facilities and operations; and (c) sample or monitor

²⁴Goose Creek, a tributary to the Roanoke River, is located about 3 miles downstream from the Leesville dam.

²⁵The licensee is to consult with the Virginia DEQ, the Virginia DGIF, the Tri-County Committee (or its successor), and the Citizens for the Preservation of the River to develop the revised plan. In addition, the revised plan is to include a provision whereby the licensee files a report with the Commission documenting the results of the study required by the certification. If the licensee can demonstrate that the results of the 1-year study required by the certification provide adequate information, it may seek relief from the remainder of the license requirement (*i.e.*, year 2 and 3 of the monitoring).

²⁶Final EIS at 272 and 279.

substances, parameters, or activities to ensure compliance with the certification conditions. Condition F requires the licensee to furnish information as may be requested by the Control Board. Condition G provides for the monitoring of contaminants and pollutants, as well as maintaining appropriate monitoring records. Condition Q stipulates that it is unlawful for the licensee to discharge any substance into state waters (or otherwise alter the physical, chemical, or biological properties of state waters) and conduct certain activities in a wetland.

32. Condition H provides for the transfer of the certification to a new licensee. Condition I states that the certification does not convey property rights, nor authorize (a) injury to private property, (b) invasion of personal rights, or (c) infringement of any law or regulation. Condition K stipulates that compliance with the certification conditions constitutes compliance with certification requirements of the State Water Control Law, but does not relieve the licensee of responsibilities, liabilities, or other penalties established under other state law or regulation, or under the authority preserved by § 510 of the CWA. Condition L stipulates that the conditions of the certification are severable. Conditions O and P stipulates that the licensee is not exempt from civil and criminal liabilities or oil and hazardous substance liability, respectively.

33. Condition D stipulates that the issued certification may be modified, revoked and reissued, or terminated. Condition J provides that the issued certification may be reopened under certain conditions. Conditions M and N provide for the modification or termination, respectively, of the certification under certain instances.

COASTAL ZONE MANAGEMENT ACT

34. Under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA),²⁷ 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 CZMA program, or the agency's concurrence is conclusively presumed by its failure to act within 180 days of its receipt of the applicant's certification.

35. The Smith Mountain Project is located on the Roanoke River in Virginia, which flows south-easterly through North Carolina before entering Albemarle Sound. The Virginia designated coastal zone extends as far inland as 100 miles on four tidal rivers, which include the Rappahannock, York, James, and Potomac rivers, but does not include the Roanoke River. Because the Roanoke River is not a coastal river in Virginia and does not affect Virginia's coastal resources, the project is not subject to Virginia coastal zone program review. As noted by Appalachian Power in its license application

²⁷ 16 U.S.C. § 1456(c)(3)(A) (2006).

(Appalachian Power, 2008a; page 4-12, Vol. II, Exhibit E; e-mail correspondence from Ms. Ellie Irons, Virginia DEQ, to Mike Hreben, Kleinschmidt Associates, dated March 3, 2008), the Virginia DEQ concurred.

36. In a letter filed April 14, 2009, the North Carolina Department of Environment and Natural Resources, Division of Coastal Management, states that the project is neither within the North Carolina coastal zone nor within a geographic area in which the Department would review licenses for consistency with CZMA. Therefore, no consistency certification is required.

SECTION 18 FISHWAY PRESCRIPTION

37. Section 18 of the FPA²⁸ 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.

38. By letter filed October 3, 2008, the Secretary of Commerce, through the National Marine Fisheries Service (NMFS), reserved its authority to prescribe fishways at the project. The Secretary of Interior, through the FWS, did not provide a fishway prescription, or a reservation of authority to prescribe fishways, under section 18 of the FPA. Consistent with the Commission's policy, Article 407 of this license reserves the Commission's authority to require fishways that may be prescribed by NMFS for the Smith Mountain Project.

THREATENED AND ENDANGERED SPECIES

39. Section 7(a)(2) of the Endangered Species Act of 1973 (ESA)²⁹ 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 designated critical habitat.

40. In a letter filed September 17, 2009, the Environmental Protection Agency (EPA) recommends that appropriate state and federal agencies be contacted annually, at a minimum, to determine the presence of any listed species or species of concern. The plans and other measures I am requiring in this license include the establishment of committees, whose members will include representatives of the FWS, the Virginia DGIF, and NMFS. These committees will meet once a year to discuss the implementation of the plans required by this license, which will afford Appalachian Power and the agencies ample opportunity to discuss such issues.

²⁸16 U.S.C. § 811 (2006).

²⁹16 U.S.C. § 1536(a)(2) (2006).

A. Aquatic Species

41. The Roanoke logperch (*Percina rex*), a federally endangered fish, is known to occur in the Roanoke River drainage in the vicinity of the Smith Mountain Project. In the final EIS, staff found that continued operation of the project could affect the Roanoke logperch and/or the habitat the species is known to inhabit.³⁰ Nonetheless, staff determined that relicensing the Smith Mountain Project, with its recommended measures, as described below, is not likely to adversely affect the Roanoke logperch.³¹ The FWS concurred with this finding by letter filed May 6, 2009.

42. To address potential project effects, Appalachian Power proposes to implement a *Roanoke Logperch Enhancement Plan*, which it developed in consultation with the Virginia DGIF and the FWS. Under the proposed plan, Appalachian Power would: (i) partner with the Virginia DGIF and the FWS to develop, fund, and complete projects to facilitate the recovery of the species; (ii) meet annually with the agencies to identify specific enhancement projects to be implemented each year; and file the proposed measures for Commission approval;³² and (iii) file a report with the Commission every 5 years, which documents the recovery efforts, the projects implemented, the success of the measures, plans for the next reporting period, and any recommendations for changes to the plan that require Commission review and approval.³³

³⁰Final EIS at 146. The Roanoke logperch currently exists in isolated populations, in tributary streams that are, for the most part, not influenced by the operation of the project. However, a population of logperch in the Pigg River is located a short distance upstream of the project's operational zone of influence and individuals of the species may use habitat that is in that area. In addition, the Leesville development's auto-cycling mode of operation affects water levels in the lower reaches of Goose Creek, a tributary of the Roanoke River which also harbors a population of logperch.

³¹Final EIS at 6.

³²Under this provision, Appalachian Power would file an annual report with the list of project(s) with the Commission for review and approval, including (a) details on the project(s) to be implemented, (b) criteria for evaluating the project's or projects' success, and (c) a map showing the location of the project(s).

³³Appalachian Power anticipates that the cost to implement the plan will be about \$50,000 annually. Under the plan, the licensee could provide matching funds each year to support stream restoration and/or stocking projects that benefit Roanoke logperch in the upper Roanoke River watershed, or it could accumulate the money over several years in order to complete larger projects.

43. The proposed *Roanoke Logperch Enhancement Plan* is consistent with the recovery tasks outlined in the Roanoke Logperch Recovery Plan and the 2007 5-year Status Review.³⁴ The proposed measures would provide a mechanism to identify, prioritize, and implement stream restoration projects that are important for the recovery of the Roanoke logperch in the vicinity of the project and within the upper Roanoke River watershed. In addition, implementing the proposed measures would facilitate the enhancement of logperch habitat that may be affected by the continued operation of the project. Therefore, I am approving Appalachian Power's proposed enhancement measures, and I am requiring them in Article 408.³⁵

44. Appalachian Power's proposed plan includes an appendix, with letters from the FWS and the Virginia DGIF, which identifies specific measures that may be implemented to restore logperch habitat and recover the species. The types of projects included in the plan's appendix and analyzed in the final EIS are generally consistent with the types of measures I would find acceptable in a case like this.³⁶ Nonetheless, Appalachian Power is reminded that the projects identified in its annual report and submitted to the Commission for approval should be consistent with the types of measures identified by the Commission in its Settlement Policy.³⁷

45. Appalachian Power may choose to implement particular measures by providing funds to a third party to perform the work required. However, Appalachian Power is

³⁴Roanoke Logperch (*Percina rex*) – 5-year review: Summary and Evaluation. U.S. Fish and Wildlife Service, Virginia Field Office, Gloucester, Virginia. 24 pp.

³⁵Appalachian Power's estimated costs of \$50,000 annually appear reasonable. However, I do not view this amount as a spending limit or cap on Appalachian Power's obligations under the plan.

³⁶See final EIS at 149. As explained in the Commission's Settlement Policy (*see Settlements in Hydropower Licensing Proceedings under Part I of the Federal Power Act*, 116 FERC ¶ 61,270 (2006)), measures such as funding for a full-time fishery biologist, general research, and watershed planning are not appropriate activities to be implemented under the license.

³⁷For purposes of documenting agency consultation, Article 408 requires that the report filed with the Commission include the record of correspondence between the licensee and the resource agencies (including copies of letters, e-mails, and phone logs), as well as a summary of the annual meeting.

ultimately responsible for completing the required measures, as the Commission can look only to the licensee to implement measures under the plan.³⁸

46. The Virginia DGIF recommends that Appalachian Power's proposed plan be modified to: (a) allow the plan's implementation funds (\$50,000) to be used to meet a 50 percent cost-share match for some projects designed to enhance habitat used by the logperch; and (b) stipulate that activities implemented as part of the plan include research projects that benefit logperch restoration. The final EIS found that there was no evidence to warrant adopting the provisions as part of the new license because the project's effect on the species is limited and the Virginia DGIF's recommendations were not commensurate with such effects.³⁹ Moreover, such measures are inconsistent with the Commission's Settlement Policy. Therefore, I decline to require these measures.

47. The Virginia DGIF also recommends that the plan's implementation funds be annually adjusted by the Consumer Price Index (CPI). However, because Article 408 requires specific measures to protect and enhance the Roanoke logperch and its habitat, and has no cap on the annual costs, there is no need to include an escalation provision in the plan.

B. Terrestrial Species

48. The Virginia DEQ, on behalf of the Virginia Department of Conservation and Recreation (Virginia DCR) – Division of Natural Heritage, noted the presence of the small whorled pogonia (*Isotria medeoloides*), a federally threatened plant, within the Leesville Lake Conservation Site.⁴⁰ Based on the habitat characteristics of the Conservation Site and Virginia DCR survey data indicating that the pogonia occurs outside the project boundary, Commission staff found in the final EIS⁴¹ that relicensing the Smith Mountain Project would have no effect on the small whorled pogonia.

³⁸ Final EIS at 288. ³⁹ Final EIS at 311.

⁴⁰ Conservation sites were created by the Virginia DCR as tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. The Leesville Lake Conservation Site abuts Leesville Lake along an adjacent cove west of Bald Knob in Pittsylvania County.

⁴¹ Final EIS at C-1 to C-8 (Appendix C).

NATIONAL HISTORIC PRESERVATION ACT

49. Under section 106 of the National Historic Preservation Act (NHPA)⁴² and its implementing regulations,⁴³ 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.

50. To satisfy these responsibilities, the Commission executed a Programmatic Agreement (PA) with the Virginia State Historic Preservation Officer and invited the Virginia Council on Indians, the Archeological Society of Virginia, and Appalachian Power to concur with the stipulations of the PA. All invited parties concurred. The PA requires the licensee to prepare and implement a Historic Properties Management Plan (HPMP) 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 414 requires the licensee to implement the PA and to file its HPMP with the Commission within 1 year of license issuance.

RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES PURSUANT TO SECTION 10(j) OF THE FPA

51. Section 10(j)(1) of the FPA⁴⁴ requires the Commission, when issuing a license, to include conditions based on recommendations by federal and state fish and wildlife agencies submitted pursuant to the Fish and Wildlife Coordination Act,⁴⁵ to "adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)" affected by the project.

52. In response to the August 7, 2008 public notice that the application was ready for environmental analysis, the Virginia DGIF, on October 1, 2008, filed thirteen recommendations related to Appalachian Power's proposed *Water Management Plan* (i.e., instream flows), *Habitat Management Plan*, and *Roanoke Logperch Enhancement Plan*, and components of those plans. Nine recommendations were determined to be

42 16 U.S.C. § 470 *et seq.* (2006).

43 36 C.F.R. Part 800 (2008).

44 16 U.S.C. § 803(j)(1) (2006).

45 16 U.S.C. § 661 *et seq.* (2006).

outside the scope of section 10(j) and are discussed elsewhere in this order. This license includes conditions consistent with the four remaining recommendations that are within the scope of 10(j). These include recommendations to: (a) implement the proposed *Water Management Plan*, including the flows proposed therein (Article 404);⁴⁶ (b) implement the proposed *Habitat Management Plan*, as modified to clarify the location of specific projects (Ordering Paragraph (E) and Article 406]; and (c) implement the Roanoke Logperch measures proposed by the licensee (Article 408).

SECTION 10(a)(1) OF THE FPA

53. Section 10(a)(1) of the FPA⁴⁷ requires that any project for which the Commission issues a license shall 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 water power 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.

A. State and Federal Agency Recommendations

54. The Virginia DGIF made nine recommendations under section 10(j) that are not specific measures to protect, mitigate damages to, or enhance fish and wildlife. Consequently, I did not consider these recommendations under section 10(j) of the FPA. Instead, I consider these recommendations under the broad public-interest standard of section 10(a)(1).

55. The Virginia DGIF recommends that Appalachian Power's proposed Roanoke logperch enhancement measures include three additional provisions. I discuss those provisions above, in the *Threatened and Endangered Species* section of this order.

56. The Virginia DGIF recommends three modifications to Appalachian Power's proposed *Habitat Management Plan* that involve financial commitments and penalties for

⁴⁶The flow provisions of the *Water Management Plan* are consistent with those included in the certification issued by the Virginia DEQ, which are generally consistent with the flow regime proposed by Appalachian Power and recommended by the Virginia DGIF. There are three exceptions related to implementing Trigger 3 (drought) flow releases and the amount of flow released from Leesville to meet flow targets at Brookneal, Virginia. The Virginia DGIF appears to support the modifications made by the Virginia DEQ in the certification (*see* final EIS at 321).

⁴⁷ 16 U.S.C. § 803(a)(1) (2006).

non-compliance with the plan's provisions and the provisions of the Shoreline Management Plan (SMP). Appalachian Power's obligation is to implement any plan approved by the Commission. How the plan, and the provisions therein, will be funded and implemented is a decision that Appalachian Power must make as a licensee. Therefore, I am not requiring that the Virginia DGIF's recommendations be included in this license.

57. The Virginia DGIF recommends that Appalachian Power's proposed *Habitat Management Plan* be modified to: (a) include photo documentation that can be downloaded in a GIS database as part of the monitoring protocol; (b) stipulate that all large habitat projects constructed as structures to attract fish for angling purposes be marked by buoys as "fish attractors;" and (c) include the development of education material. These recommended changes will enhance the overall effectiveness of the plan relative to the availability of information on each project undertaken under the plan. Therefore, Article 406 modifies Appalachian Power's proposed *Habitat Management Plan* to include these three measures.

58. NMFS, in a letter filed October 3, 2008, makes no specific recommendations under section 10(j). However, NMFS indicates that it supports Appalachian Power's proposed *Water Management Plan*, and requests that it be included in the notification and coordination process for the plan. Article 404 requires Appalachian Power to file a revised water management plan that adds NMFS to the notification and coordination process.

B. Impoundment Erosion and Sedimentation Monitoring 1.

Impoundment erosion

59. The final EIS found that some erosion of the lakes' shorelines is expected to continue with continued project operation, and some loss of land will likely continue due to shoreline retreat. The final EIS also found that wind-driven waves are the predominant source of shoreline erosion at the project, with boat wakes being a secondary source. The final EIS found that water level fluctuations due to project operation, while not likely a significant source of erosion, increase the shoreline's susceptibility to wave-based erosion.⁴⁸

60. To address on-going erosion concerns, Appalachian Power proposes to implement an *Erosion Monitoring Plan*, where erosion would be monitored in areas on the shores of Smith Mountain and Leesville Lakes with scarp⁴⁹ heights greater than 5 feet. Following

48 Final EIS at 51 and 270.

49 Scarp is defined as a relatively continuous cliff or steep slope produced by
(continued)

an initial survey, the licensee would prepare a report to be filed with the Commission that would: (a) document the locations of the monitored sites; (b) compare the monitoring results with data collected during pre-filing studies; (c) assess effects and identify any project-related effects; and (d) propose actions with an implementation schedule to address project-related effects. In addition, Appalachian proposes to develop demonstration projects that use natural methods for stabilizing eroding shoreline, while also enhancing shoreline habitat. The project sites would be monitored to assess the effectiveness of the methods chosen.

61. The final EIS concluded that the proposed *Erosion Monitoring Plan* activities would help reduce erosion effects by informing future decisions regarding erosion control efforts, which would assist Appalachian Power and other stakeholders to identify areas of high erosion where remedial measures may be needed.⁵⁰ The proposed demonstration projects, which would be implemented as part of Appalachian Power's proposed *Habitat Management Plan*,⁵¹ will serve as examples for the type of efforts that can be employed to help reduce erosion levels along the lakes' shorelines.

62. As recommended by staff in the final EIS, I am requiring that the *Erosion Monitoring Plan* be modified to expand the monitoring locations to include sites with scarp heights of less than 5 feet in order to provide a more comprehensive assessment of erosion occurring along the lakes' shorelines.⁵² In addition, I am requiring that the monitoring be done, and a report filed for Commission approval, every 5 years. These modifications will provide erosion-rate information that will be helpful in developing effective erosion protection and remedial measures for project-related effects.

erosion between two relatively level surfaces.

50 Final EIS at 52 and 271.

51 Under the *Erosion Monitoring Plan*, Appalachian Power would develop a plan, in consultation with the Virginia DGIF, and file it for Commission approval prior to beginning the projects. The first project would be located in the Bull Run area of Smith Mountain Lake, while the second project would be located on Leesville Lake along the shoreline adjacent to the licensee's public picnic area downstream from Smith Mountain Dam. Appendix C of the plan includes a map showing the two areas.

52 Final EIS at 271. The final EIS found that existing information indicates that active erosion may be more widespread on low scarps than on high scarps, and that monitoring locations with a broad range of scarp heights would provide information not otherwise obtained if only monitoring sites with high scarps.

63. Article 402 requires Appalachian Power to file a revised erosion monitoring plan for the project that includes staff's additional measures, as described above.

2. Impoundment sedimentation

64. Since the project was constructed, sediment has accumulated in Smith Mountain and Leesville Lakes, which has decreased the lakes' storage volume to a minor extent: about 6 percent at Smith Mountain Lake and about 11 percent at Leesville Lake. Sedimentation is not uniform, but, instead, is concentrated in inlets and coves where tributary rivers and streams enter the lakes while little sedimentation occurs in the main body of the reservoirs. In areas where sedimentation occurs, it can affect recreational access, both private and public.

65. With continued project operation, sediment is expected to continue accumulating in both lakes, primarily due to land use practices in the watershed outside the project boundary. Appalachian Power proposes to implement a *Sedimentation Monitoring Plan* to address sedimentation concerns. The proposed plan includes: (a) monitoring "areas of concern" every 5 years (section 1); (b) initiating and participating in a basin-wide watershed committee to address watershed sedimentation (section 2);⁵³ and (c) periodic reporting (section 3). In addition, Appalachian Power proposes to dredge an area in Smith Mountain Lake where sediment impedes access at the Hardy Ford Public Boat Launch and would, as necessary, remove sediment that affects the use of other public boat ramps.

66. The final EIS found that establishing a basin-wide watershed committee would help the participants on the committee focus on watershed activities that exacerbate erosion and sediment input into Smith Mountain and Leesville lakes.⁵⁴ This measure is expected to reduce sediment influx into the lakes. In addition, the proposed *Sedimentation Monitoring Plan* includes measures that will improve public access to the lakes, as well as provide: (a) information on areas experiencing significant sedimentation; and (b) a mechanism for the Commission and others to assess

⁵³The purpose of the basin-wide committee is to: (a) build on the watershed modeling work done as part of the sediment study conducted during relicensing; and (b) identify sediment reduction strategies (*e.g.*, Best Management Practices) for the areas in the watershed that contribute the greatest amounts of sediment to the lakes. The committee would also review the report of the sediment survey outlined in the plan and provide input into measures that may be needed to address identified issues, including any project-related effect.

sedimentation on an on-going basis and determine if any additional measures are needed to address a project effect.⁵⁵

67. Appalachian Power's proposed *Sedimentation Monitoring Plan* does not identify what types of actions Appalachian Power would implement, and/or under what conditions Appalachian Power would dredge a public recreation site. Nor does the proposed plan include all the identified areas of concern. In the final EIS, staff recommended that such provisions be added to the proposed plan. I agree. Such measures would help inform future decisions concerning dredging for public access, as well as enhance the plan's use as a management tool during a new license term. The revised plan will provide a mechanism to identify and address locations within the project boundary where sedimentation interferes with project purposes (*i.e.*, generation and public access for recreation).

68. I understand that there is significant interest on the part of some stakeholders in requiring the licensee to: (a) dredge all areas of the project where sedimentation is impeding access, including private access; (b) actively manage sediment input into the project reservoirs; and (c) fund full-time sediment and erosion control specialists for the counties surrounding the project. However, such measures are overly broad and could be very costly to implement. Moreover, as noted, land use practices in the upper watershed contribute significantly to sediment accumulation, and it would be unreasonable to require the licensee to mitigate for such non-project related effects.

69. As described above, under section 2 of the proposed *Sedimentation Monitoring Plan*, Appalachian Power would form a Basin-wide Watershed Committee to address sediment input into the lakes. The final EIS found that establishing such a committee would help the participants on the committee focus on watershed activities that exacerbate erosion and sediment input into Smith Mountain and Leesville lakes.⁵⁶ However, neither the Commission nor the licensee would have the authority to require committee participants, other than the licensee, to implement measures at the project or in the watershed. Therefore, I am not requiring this measure as part of this license. Nonetheless, I understand the importance of this issue to the various stakeholders, as well as its relevance to watershed planning; and Appalachian Power is free to pursue formation of such a committee as an off license measure.

70. Article 403 requires Appalachian Power to file a revised sedimentation monitoring plan for Commission approval that: (a) includes the types of actions Appalachian Power would implement (*e.g.*, methods for dredging), and under what conditions Appalachian

———⁵⁵Final EIS at 273-74.

Power would propose dredging at a project recreation site; (b) adds Craddock Creek, Mitchells Cove, and areas near Mariners Landing to the list of areas to be monitored under the plan; and (c) deletes section 2 (basin-wide watershed committee) from the plan.

C. Water Management

71. Water management at the Smith Mountain Project affects water uses within, and downstream of, the project. This is most evident during low-flow conditions, where maintaining sufficient flow for aquatic resources and recreational uses downstream of the project can lead to a drawdown of Smith Mountain Lake, or, conversely, where ensuring that lake levels are adequate for recreation can require a reduction in flows from Leesville that could harm downstream resources.

72. To address water management concerns at the project, Appalachian Power proposes to use an Operations Model⁵⁷ to forecast future Smith Mountain Lake levels and adjust downstream flow releases based on the probability of Smith Mountain Lake elevations reaching certain levels in the future. Appalachian Power also proposes to modify its auto-cycling operation at the Leesville development from 18 minutes every 2 hours to 9 minutes every hour. The final protocol included in the proposed *Water Management Plan* was developed by a Water Management Working Group.⁵⁸ Under the plan, the project will continue to operate as a pumped storage facility, utilizing up to a 2-foot drawdown in Smith Mountain Lake and a 13-foot drawdown in Leesville Lake.⁵⁹

⁵⁷The Operations Model is the *Roanoke River Basin Reservoir Operations Model*. The model incorporates the operating rules for each project in the Roanoke River Basin, as well as probabilistic triggers for reducing flow releases from Leesville.

⁵⁸The group consisted of representative from Appalachian Power, the Virginia DGIF, the Virginia DEQ, the Virginia Department of Conservation and Recreation, the FWS, the Corps, the Tri-County Relicensing Committee, the Tri-County Association, the Smith Mountain Lake Association, the Leesville Lake Association, the Roanoke River Basin Association, and Dominion Power.

⁵⁹Virginia DEQ's water quality certification includes a flow management protocol (Condition D in Appendix A) that is the same as Appalachian Power's proposed protocol, except: (a) Trigger 3 drought flows activate anytime Smith Mountain Lake elevations drop to 791.0 feet NGVD after September 30; (b) Trigger 3 drought flows include a recreational flow component; and (c) caps are placed on the flow releases from Leesville. In addition, the certification requires: (a) a study of auto-cycling versus continuous flow releases from Leesville; (b) the forecast-based model to be run every 3 days with a requisite evaluation; (c) higher monthly minimum flows at Brookneal, Virginia if inflows allow; and (d) certain reporting requirements pertaining to trigger conditions.

The plan also includes: (a) monthly minimum flows for aquatic organisms, habitat, and recreation in the Roanoke River downstream from Leesville, measured at Brookneal, Virginia;⁶⁰ (b) operational restrictions during droughts, including absolute minimum flows; (c) a variance process for the operational provisions; (d) flood control operations; (e) a monitoring and reporting component to ensure that the project is operated in accordance with the license; and (f) an adaptive management component with a 5-year review and update cycle.

73. The final EIS found that the operational parameters included in the proposed plan would provide higher yearly lake levels in Smith Mountain Lake, when compared to existing conditions, particularly during low-inflow conditions, which would benefit aquatic habitat in the lake, the lake's fish populations, and recreational use.⁶¹ The additional operational restrictions contained in Virginia DEQ's certification would help maintain even higher lake levels in Smith Mountain Lake. The flows proposed in the *Water Management Plan*, as well as those included in the certification, will provide nearly optimal habitat for the species of concern in the Roanoke River, mainly blackbass⁶² and striped bass. The recreation flows released to the Roanoke River during Trigger 3 drought conditions would ensure that some recreational use of the river downstream from the project is maintained. Finally, the flow study required by the certification would ensure that the operation of the Leesville development is not adversely affecting resources in, and along, the first 3 miles of the Roanoke River downstream of the project.

74. In the final EIS,⁶³ staff recommended that Appalachian Power's proposed *Water Management Plan* be modified to include: (a) the provisions of Condition D (*Instream Flow Conditions*) of Virginia DEQ's certification; (b) revisions to Condition E (*Adaptive Management*) of Virginia DEQ's certification (*i.e.*, the plan would be reviewed every 5 years during the license, rather than once at the end of the first 5 years of the license); (c) the provisions of Condition G (*Instream Flow Monitoring and Reporting Conditions*) to ensure that information is disseminated in a timely manner; (d) a provision to update the forecast model with hydrologic data between the 5-year review cycles; and (e) inclusion of NMFS and Dominion Power in the list of consulting entities. The final EIS found that

⁶⁰The plan allows the project to surcharge to 795.3 feet NGVD to provide flows in support of striped bass spawning downstream in the river during April and May.

⁶¹Final EIS at 81-3 and 276.

⁶²The term blackbass encompasses several species of bass, including smallmouth bass and largemouth bass.

⁶³Final EIS at 278.

these revisions would: (a) enhance the effectiveness of the forecast model used in the plan; (b) help ensure that the project is operated in accordance with the operational requirements of the new license; (c) assist Appalachian Power, the agencies, and other stakeholders in making decisions regarding the future operations of the project; and (d) increase the duration and coverage of the certification's required flow study, which will improve the quality of information available for making decisions involving future Leesville operation.⁶⁴

75. Article 404 requires Appalachian Power to file a revised water management plan for the project that includes the revisions described above.⁶⁵

D. Water Quality Monitoring

76. Water discharged from the Smith Mountain dam can have low temperatures and dissolved oxygen (DO) concentrations under certain generation conditions. When Smith Mountain Lake is stratified (late spring to early fall), releasing colder, less-oxygenated water from Unit 1, which has its intake located in the deepest part of the lake, can result in DO levels below Virginia's standard of 4.0 milligrams/liter (mg/L) in Leesville Lake. To address these operational effects, Appalachian Power proposes to implement a *Water Quality Monitoring Plan*. As part of the plan, Appalachian Power would: (a) modify turbine operations at Smith Mountain;⁶⁶ (b) monitor DO and water temperature for the first 5 years of the new license (with continuous monitoring during the first 2 years); and (c) establish a Water Quality Technical Review Committee to review the monitoring results.

77. Implementing a protocol for bringing the Smith Mountain units on-line and taking them off-line in a manner that prioritizes the withdrawal of water from higher in the water column of Smith Mountain Lake would: (a) reduce the amount of low DO water passing through the development; (b) enhance DO levels in the Smith Mountain

⁶⁴Final EIS at 84-5 and 278.

⁶⁵In the final EIS, staff recommended that the water management plan be modified to include certain revisions to Virginia DEQ's required flow study to include an additional 2 years and an expanded geographic scope. As explained elsewhere in this order, I am requiring in Article 401(a) such modifications to the flow study and the revised study plan be filed with the Commission for approval.

⁶⁶During the months of July through September, Units 1 and 5 (located lower in the water column) at the Smith Mountain development would not be used for generation until after Units 2, 3, and 4 have been brought on-line. Conversely, Units 1 and 5 would be the first units to be shut down during this period.

discharge; and (c) provide benefits to aquatic life in portions of Leesville Lake. DO and water temperature monitoring would be necessary to determine the effectiveness of the proposed unit operation to meet Virginia's water quality standards.⁶⁷ Finally, establishing a technical review committee is important for providing overall program guidance, as well as assisting Appalachian Power in determining whether additional water quality enhancement measures are necessary during the license term.

78. The proposed *Water Quality Monitoring Plan* does not include a process for determining the need for additional measures, or otherwise include a provision to identify alternative measures to ensure that Virginia's water quality standards are met (should additional measures be warranted). Nor does the proposed plan include a mechanism for providing the Technical Review Committee and other stakeholders the monitoring data on a frequent basis. In the final EIS, staff recommended that the proposed plan be modified to include these measures.⁶⁸ These provisions will enhance the plan's use as a management tool to address the project's effect on water quality, including evaluating monitoring data for accuracy and making any needed changes in a timely manner.

79. Article 405 requires Appalachian Power file a revised water quality monitoring plan for the project that includes staff's recommended revisions, as described above.

80. The primary water quality issues at Smith Mountain and Leesville lakes are related to nutrients and bacteria. The final EIS found that the source of these nutrients and bacteria is not related to project operation, but rather to shoreline development around the lakes and overall watershed development. However, staff concluded that monitoring water quality on the lakes would help ensure that the changes in operation of the project under the proposed *Water Management Plan* do not adversely affect water quality in the lakes.⁶⁹ To provide for water quality monitoring on the lakes, Appalachian Power proposes to contribute \$50,000 annually towards the programs on Smith Mountain and Leesville lakes (\$25,000 each). The Smith Mountain Lake Association and the Leesville

⁶⁷Final EIS at 281. Staff concluded that the details associated with monitoring water quality at the project (*e.g.*, length of monitoring, monitoring sites, etc.) should be developed during consultation with the Water Quality Technical Review Committee.

⁶⁸Final EIS at 282. The provision to evaluate alternative methodologies for meeting Virginia's water quality standards is consistent with Condition F.4 of the Virginia's certification. In addition, the final EIS found that Appalachian Power should disseminate water quality monitoring data every month between May 1 and October 31 and every 2 months the remainder of the year.

⁶⁹Final EIS at 88-9 and 282.

Lake Association, respectively, would administer these programs.⁷⁰ Lake sampling will help ensure any chronic water quality problems are addressed in a timely manner.

81. As part of the water quality monitoring plan required by this license, I am requiring that Appalachian Power develop a program to monitor lake water quality that is consistent with the Smith Mountain Association's program, and that includes DO and water temperature. Appalachian Power will ultimately be responsible for lake monitoring. However, it can implement this provision in any manner it may choose.

82. In a letter filed September 17, 2009, EPA commented on the need for baseline water quality data (including water temperature) and additional measures that may be necessary to address any identified project effect. The water quality monitoring plan that I am requiring in this license includes water temperature, as well as DO (*see* section 4.1 of the plan). As for baseline data, Appalachian Power collected water quality data during pre-filing consultation. This data, coupled with the data to be collected under the approved plan should be sufficient to address EPA's concerns related to project effects. Consistent with the certification, I am also modifying the proposed plan to include a mechanism for evaluating additional measures that may be needed to meet Virginia's water quality standards, based on the monitoring results.

E. Entrainment

83. In a letter filed September 17, 2009, EPA recommends that methods be developed and implemented to minimize the loss of aquatic life entrained at the project during generation. Staff included a lengthy analysis of fish entrainment and protection in the final EIS (*see* final EIS at 114-121), and found that there is a lack of evidence at this time to support the need for measures to protect fish from entrainment. In addition, no entity raised any concerns during the relicensing regarding the loss of other aquatic life at the project, and the record contains no support for requiring measures as part of this license. I concur with staff's findings in the final EIS, and will not require such measures as part of this license. Should new evidence come to light during the license term, this issue can be reevaluated under the re-opener provisions of this license.

⁷⁰Currently, the Smith Mountain Association, through a contract with Ferrum College in Rocky Mount, Virginia, collects data on Secchi depth, chlorophyll a, total phosphorus, total nitrate, and fecal coliform from multiple locations on Smith Mountain Lake, from the Smith Mountain dam upstream to the project's headwaters. The program also includes a component dealing with educating lake users on how to minimize their effect on the lake's water quality. The Leesville Lake Association is currently working with Lynchburg College, in Lynchburg, Virginia, to develop a water quality monitoring program for Leesville Lake.

F. Aquatic Vegetation Management

84. Submerged aquatic vegetation (SAV) on Smith Mountain Lake has been studied for many years, with the most recent survey occurring in 2006. Recent surveys show that SAV beds do not appear to be increasing in size, and on average, the beds are less extensive than they were in 2002.⁷¹ The presence of native species of SAV in shallow water habitats provides important cover for fry and juvenile stages of various fish species. However, non-native, aggressive invasive aquatic vegetation, such as *Hydrilla*, can have a variety of undesirable economic and environmental effects, and surveys have documented the presence of *Hydrilla* in certain areas of the lake.

85. To address the aquatic vegetation issues at the project, Appalachian Power proposes to implement an *Aquatic Vegetation Management Plan*. The goal of the plan is to ensure that SAV, particularly invasive species, do not increase to nuisance levels. The plan includes a monitoring component, a consultation process, and limited control measures to be done by others.⁷² The plan is meant to represent an integrated management strategy for aquatic weed control at the project. The final EIS found that implementing the proposed plan would: (a) help control and prevent the spread of invasive aquatic vegetation in Smith Mountain Lake; and (b) assist Appalachian Power, the Virginia DGIF, and other stakeholders in managing the lake's aquatic vegetation as important fish habitat.

86. In the final EIS, staff recommend that the proposed *Aquatic Vegetation Management Plan* be modified to: (a) include a provision to notify adjacent landowners of planned spot treatments of herbicides (with the notification period to be worked out by the Aquatic Vegetation Technical Review Committee);⁷³ (b) require that the report filed by the licensed applicator identify the type of herbicide used in the treatment; and (c) require Appalachian Power to control invasive aquatic vegetation at public boat ramps and other public access areas affected by vegetation growth.⁷⁴ The final EIS found that

71 Currently, the Tri-County Lake Administrative Commission (Tri-County Association) controls aquatic vegetation on Smith Mountain Lake.

72 Under the plan, Appalachian Power would: (1) conduct a full-lake survey every 5 years; (2) conduct annual surveys of lesser scope in the intervening 4 years; (3) establish an Aquatic Vegetation Technical Review Committee; and (4) develop permitting procedures for applying herbicides, as well as identify other methods of vegetation control for the lake.

73 Spot treating are those instances where landowners need to treat the areas around their dock or swimming areas for invasive aquatic vegetation.

74 Final EIS at 140-41 and 286.

the notification and reporting measures would provide valuable information to adjacent property owners regarding the effectiveness of specific chemicals used, as well as promote public safety. The EIS also found that Appalachian Power's control of aquatic vegetation at public boat ramps and other access sites would help ensure that invasive aquatic vegetation does not inhibit public access at the project.⁷⁵

87. Ordering Paragraph (F) approves Appalachian Power's proposed *Aquatic Vegetation Management Plan* with the modifications required in Article 409.

G. Wetlands

88. In its comments on the final EIS, filed September 17, 2009, EPA recommends that: (a) a wetland delineation be performed in the project area to ascertain the extent of direct and indirect effects caused by the proposed project; and (b) effects to wetland areas on any of the properties be avoided.

89. These recommendations are the same as those made by EPA in its comments on the draft EIS (letter filed May 19, 2009), which staff responded to in the final EIS.⁷⁶ Staff considered the project's effects on wetlands in the EIS for the Smith Mountain Project, and, based on the best available information, concluded that relicensing the proposed project would not adversely affect any wetlands that occur around Smith Mountain and Leesville lakes.⁷⁷ The draft and final EIS found that existing wetlands have adapted to the existing hydrology at the lakes and would likely persist under any operational alternative considered in the EIS since project drawdown and refill would not change significantly. The water management plan I am requiring as a part of this license includes a pumping regime that is less extreme when compared to historical operation, and is expected to provide a more stable hydrologic regime for existing wetlands around the project.

90. In addition, I note that no entity identified project effects on wetlands as an issue, nor did anyone request a wetlands study to support a licensing decision for this project. Appalachian Power's relicense application was prepared using the Commission's Integrated Licensing Process (ILP).⁷⁸ The ILP regulations stipulate that any party requesting a study late in the process must show extraordinary circumstances warranting

75 Final EIS at 142 and 286.

76 Final EIS at D-63 to D-64 (Appendix D).

77 Final EIS at 138.

78 See 18 C.F.R. Part 5 (2009).

approval.⁷⁹ EPA, which did not recommend a study as part of the study plan development process, has not done this; therefore, I see no need to require a wetland delineation as part of this license.⁸⁰

91. Finally, as noted in the Final EIS, wetlands around the project lakes are protected under the existing SMP.⁸¹ Under the SMP, wetlands are either classified Impact Minimization Zone or Conservation/Environmental Zone.⁸² Under these classifications, individuals are discouraged from constructing structures in these areas so as to not adversely affect wetlands and other important resources. As discussed below, I am requiring that Appalachian Power continue to implement the SMP under this new license.

H. Recreation Management

92. Currently there are six recreation areas at the Smith Mountain development that are owned by Appalachian Power. Five of the six areas are operated and maintained by the Virginia DGIF pursuant to a lease agreement with Appalachian Power. The six recreation areas include seven boat launches, six docks, two fishing piers, four picnic areas, a campground, and a swimming area. There are four recreation areas at the Leesville development that are owned by Appalachian Power. Three of the four areas are operated and maintained by the Virginia DGIF pursuant to a lease agreement with Appalachian Power. The four recreation areas at the Leesville development include two boat launches, and one fishing pier, dock, and picnic area.

⁷⁹ 18 CFR § 5.16. In addition, 18 CFR § 5.19 stipulates that the Director of the Office of Energy Projects will issue an order resolving any requests for additional study within 30 days of the filing of the application. EPA did not request any studies at that time.

⁸⁰ Wetlands within the project boundary were identified and categorized, using National Wetlands Inventory maps of the area, as part of the process to develop the project's current SMP, which the Commission approved on July 5, 2005.

⁸¹ The National Wetlands Inventory maps of the project area show that wetlands are primarily located in the narrow coves and inlets along the shoreline of Smith Mountain Lake and in a few small inlets on Leesville Lake. The wetlands inventory classifies the wetlands as inland shrub swamp, inland forested wetland, and/or emergent (see <http://www.fws.gov/wetlands>; accessed on September 17, 2009).

⁸² Development in Impact Minimization Zones is permitted with appropriate mitigation, while no development is allowed in Conservation/Environmental Zones.

93. To address recreation issues at the project, Appalachian Power would to implement its proposed *Recreation Management Plan*, which includes provisions to: (a) enhance existing recreation facilities, including improving the boat ramp and parking at Hardy Ford Public Boat Launch; (b) reserve land at three sites for future recreational development (45-acre Hardy parcel, 9-acre Oak Court parcel, and 265-acre Bull Run parcel); and (c) monitor recreation use at the project and consult with a Recreation Technical Review Committee⁸³ in implementing the plan. In addition, Appalachian Power proposes to modify the project boundary to include the existing recreation areas and the lands being reserved for future recreation development.

94. In the final EIS, staff recommended that Appalachian Power revise its proposed *Recreation Management Plan* to include: (a) specifics regarding maintaining and operating project recreation facilities; (b) a provision to maintain access at public boat ramps that are being affected by sediment buildup; (c) a provision for providing sanitation facilities at project recreation sites; (d) a mechanism to improve parking and fishing access at certain project recreation facilities; (e) procedures for managing use of the islands on Smith Mountain Lake to minimize affects on environmental resources (*e.g.*, soils, vegetation, water quality around the island) from recreation; and (f) monitoring recreation and angler use at the project in order to ensure adequate public access to, and use of, the project over a new license term.⁸⁴ The final EIS found that staff's recommended *Recreation Management Plan* would improve public access and recreation opportunities at the project.

95. Article 410 requires Appalachian Power to file a revised recreation management plan for the project that includes: (a) the facilities described in Appalachian Power's proposed plan; and (b) staff's recommended modifications to the plan, as described above.

I. Debris Management

96. To maintain boating opportunities and public safety on Smith Mountain and Leesville Lakes, Appalachian Power currently coordinates with the Tri-County Association and the Leesville Lake Association (Leesville Association) to remove debris floating on the surface of the lakes. Appalachian Power proposes to implement a *Debris Management Plan*, which: (a) establishes methods and procedures for removing debris; (b) clarifies roles and responsibilities; (c) establishes a procedure for managing debris

⁸³The Recreation Committee would be comprised of representatives from Appalachian Power, the Virginia DGIF, the Virginia DCR, the Smith Mountain Association, the Leesville Association, and the Tri-County Association.

⁸⁴Final EIS at 289-299.

considered beneficial as aquatic habitat; (d) establishes a procedure for identifying dedicated off-load and disposal sites for debris; and (e) establishes a Debris Technical Review Committee.⁸⁵

97. In the final EIS, staff recommended that the plan be modified to include procedures for monitoring and controlling debris on the lakes at public swimming beaches, the project's public recreation areas, and other areas (*e.g.*, coves), where appropriate, during high use periods (Memorial Day to Labor Day).⁸⁶ The final EIS found that implementing these modifications would ensure that debris removal efforts on both lakes continue through the term of a new license, and that implementing the measures described in the plan would help Appalachian Power, the Tri-County Association, the Leesville Association, and others to manage debris on both lakes. Staff's modifications to the plan provide a mechanism to manage debris at public access and public use areas around the lakes during the high-demand recreation season, which will promote and enhance recreation opportunities at the project.

98. Ordering Paragraph (G) approves Appalachian Power's proposed *Debris Management Plan* with the modifications required in Article 411.

J. Aids to Navigation Management

99. Appalachian Power currently cooperates with the Tri-County Association and the Leesville Association to provide for boating safety at the Smith Mountain Project. Appalachian Power proposes to implement an *Aids to Navigation Management Plan*, which would require that Appalachian Power: (a) mark and maintain a defined navigation channel under various water levels on both Smith Mountain and Leesville lakes; (b) cooperate with the Tri-County Association in marking obstructions outside of the defined waterway; (c) provide an education program; (d) produce navigation maps; and (e) form an Aids to Navigation Technical Review Committee.

100. In the final EIS, staff recommended that the plan be modified to include: (a) a requirement that the licensee install and maintain a lighted navigation system on Leesville Lake; and (b) coordination of the *Aids to Navigation Management Plan* with other management plans. Implementing the plan, with staff's recommended measures, in consultation with the Technical Review Committee and other interested stakeholders,

⁸⁵ The Debris Technical Review Committee will be comprised of representatives from Appalachian Power, the Tri-County Association, the Leesville Association, the Smith Mountain Association, and the Virginia DGIF.

⁸⁶ Final EIS at D-85 (Appendix D).

would contribute to boating safety on the lakes, as well as the overall safety associated with recreational use of project waters.

101. Provision 1.a of section 6 of the *Aids to Navigation Management Plan* stipulates that Appalachian Power, or its designee, will obtain U.S Coast Guard (Coast Guard) approval for the new navigation aids on Smith Mountain Lake, and that the new aids are in addition to the existing aids to be improved by the Tri-County Association. Provision 2 of section 6 stipulates that the Tri-County Association will continue to obtain approval from the Coast Guard for the existing navigation aids, and that Appalachian Power will coordinate with the Tri-County Association to submit applications to the Coast Guard and implement the changes in accordance with the Coast Guard permit. Section 10.2 of the plan includes specific provisions related to markings outside the defined waterway at Smith Mountain Lake.

102. The provisions described above seem to require the Tri-County Association, an entity other than the licensee, to implement specific measures related to the navigation system on Smith Mountain Lake. However, the Commission cannot require an entity that is not the licensee to implement the conditions of its license. In addition, Standard License Article 25 of this license requires the licensee to 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, which places the responsibility for navigation aids on Smith Mountain Lake with Appalachian Power. Therefore, I am not requiring these provisions as part of this license. However, Appalachian Power can implement its navigation aids plan in any manner it may choose, including entering into an agreement with the Tri-County Association.

103. Ordering Paragraph (H) approves Appalachian Power's proposed *Aids to Navigation Management Plan* with the modifications required in Article 412.

K. Shoreline Management Plan

104. The current SMP for the Smith Mountain Project was approved by the Commission on July 5, 2005, with subsequent amendments being approved on April 14, 2006 and February 23, 2007.⁸⁷ Appalachian Power filed the current version of the SMP with its license application, and proposes that it be part of the new license.

105. Under the SMP, Appalachian Power protects important natural, environmental, and aesthetic resources at the Smith Mountain Project. The SMP includes measures to protect shoreline vegetation by placing limits on development in areas with sensitive

⁸⁷ See 112 FERC ¶ 61,026 (2005); 115 FERC ¶ 62,071 (2006); and 118 FERC ¶ 62,149 (2007).

resources (*e.g.*, aquatic habitat, wetlands, and cultural resources). In addition, the SMP allows for public access for recreational purposes, and recognizes existing uses by allowing certain high density uses at the project. Ordering Paragraph (J) approves Appalachian Power's existing SMP.

106. During pre-filing consultation, Appalachian Power and the stakeholders agreed that the SMP needs to address replacement of habitat along the shoreline that is removed during shoreline construction activities (*e.g.*, the SMP does not address shallow-water habitat that is affected by the installation of riprap or docks). In addition, the current SMP does not include a setback (or buffer) between commercial/residential and resource protection areas. Also, the *Habitat Management Plan* that I am requiring in this license includes measures that Appalachian Power proposes to incorporate into a revised SMP. In Article 413, I am requiring that Appalachian Power file, for Commission approval, a revised SMP that includes, at a minimum, the aforementioned items by July 5, 2010.

L. Technical Review Committees

107. Several of the plans required by this license (*e.g.*, Water Quality, Aquatic Habitat, Aquatic Vegetation, Recreation, Debris, and Aids to Navigation) provide for the formation of technical review committees. These plans stipulate that the committees "will include, "will be established with," or "will be made up of" representatives of entities other than the licensee. As explained in the plans, the committees will play an important consultation role in the plans' implementation and review during the license term. However, while the Commission cannot require other entities to participate in those committees, the named entities are those with whom the licensee must consult with respect to the specific plans.

ADMINISTRATIVE PROVISIONS

A. Annual Charges

108. The Commission collects annual charges from licensees for administration of the FPA. Article 201 provides for the collection of funds for this purpose.

B. Exhibit F and G Drawings

109. The Commission requires licensees to file sets of approved project drawings on microfilm and in electronic file format. The exhibit F and G drawings filed with the license application are approved and made part of this license. Article 202 requires the filing of these drawings.

C. Amortization Reserve

110. Pursuant to section 10(d) of the FPA, 16 U.S.C. § 803(d), the Commission requires that, for new major licenses, licensees must set up and maintain an amortization reserve account upon license issuance. Article 203 requires the establishment of the account.

D. Headwater Benefits

111. Some projects directly benefit from headwater improvements that were constructed by other licensees, by the United States, or by permittees. Article 204 requires the licensee to reimburse such entities for these benefits if they were not previously assessed and reimbursed.

E. Use and Occupancy

112. Requiring a licensee to obtain prior Commission approval for every use or occupancy of project land would be unduly burdensome. Therefore, Article 415 allows the licensee to grant permission, without prior Commission approval, for the use and must be consistent with the purposes of protecting and enhancing the scenic, recreational, and environmental values of the project. In accordance with the provisions of the SMP, Article 414 allows the licensee to grant permission for piers, landings, boat docks, marinas, or similar structures beyond the usual 10 watercraft limit typically included in the article.

F. Review of Final Plans and Specifications

113. This license authorized upgrades to existing, and development of new, recreation facilities at the project. Article 301 requires the licensee to provide the Commission's Division of Dam Safety and Inspections, Atlanta Regional Office, for its approval, final contract drawings and specifications and supporting design documentation consistent with the Commission's regulations, including a Quality Control and Inspection Program, Temporary Construction Emergency Action Plan, and a Soil Erosion and Sediment Control Plan.

114. Where new construction or modifications to a project are required, such as new or improved recreational facilities, the Commission requires a licensee to file revised drawings of these project features as built. Article 302 requires the licensee to file, for Commission approval, within 90 days of completing construction, revised Exhibits A, F, and G, as applicable, describing and showing the facilities as built.

G. Consultation on Resource Plans

115. Three conditions of this license found in Virginia DEQ's certification (Appendix A) require Appalachian Power to prepare certain plans, in consultation with other entities, for Virginia DEQ's approval, without prior Commission review and approval. Article 401(a) requires Appalachian Power to file these plans with the Commission for approval.

116. The certification includes five conditions that require Appalachian Power to prepare reports documenting the results of various studies and surveys and to notify the Virginia DEQ of the occurrence of certain events, without submitting those filings to the Commission. Article 401(b) requires Appalachian Power to file these reports and notifications with the Commission.

117. Certification condition E. 1 allows the licensee to temporarily suspend the flow requirements of the certification (Condition D), upon mutual agreement between the licensee and the Virginia DEQ, if required by operating emergencies beyond the control of the licensee or when Trigger 3 events occur during drought or low flow conditions. However, the condition does not provide for Commission notification of deviations from the flow requirements. Therefore, Article 401(c) requires that the Commission be notified should the flow requirements of the license be suspended.

118. Two conditions in the certification provide for future changes to project operations and/or facilities, as may be required by the Virginia DEQ.⁸⁸ No such changes may be implemented without prior Commission authorization, as may be granted after the filing of an application to amend the license. Article 401(d) requires such Commission approval.

STATE AND FEDERAL COMPREHENSIVE PLANS

119. Section 10(a)(2)(A) of the FPA⁸⁹ requires the Commission to consider the extent to which a project is consistent with federal and state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project.⁹⁰ Under

⁸⁸Such future changes could include: (a) changes to the Leesville development to facilitate a continuous flow release (Condition D.3); and (b) changes in the facilities or operations at the Smith Mountain development to facilitate compliance with Virginia's dissolved oxygen standards (Condition F.4).

⁸⁹16 U.S.C. § 803(a)(2)(A) (2006).

⁹⁰Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (2009).

section 10(a)(2)(A), staff identified and reviewed 13 comprehensive plans that are relevant to this project.⁹¹ No conflicts were found.

APPLICANT'S PLANS AND CAPABILITIES

120. In accordance with sections 10(a)(2)(C) and 15(a) of the FPA,⁹² Commission staff evaluated Appalachian Power's record as a licensee for these areas: (1) conservation efforts; (2) compliance history and ability to comply with the new license; (3) safe management, operation, and maintenance of the project; (4) ability to provide efficient and reliable electric service; (5) need for power; (6) transmission services; (7) cost-effectiveness of plans; and (8) actions affecting the public. I accept the staff's findings in each of the areas.

A. Conservation Efforts

121. Section 10(a)(2)(C) of the FPA requires the Commission to consider the extent of electricity consumption efficiency improvement programs in the case of license applicants primarily engaged in the generation or sale of electric power, like Appalachian Power. Appalachian Power has programs to promote cost-effective conservation and load management for residential, commercial, industrial, and agricultural customers. Through these programs, Appalachian Power is making satisfactory efforts to conserve electricity and reduce peak hour demands, 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 New License

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

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

123. Staff reviewed Appalachian Power's management, operation, and maintenance of the Smith Mountain 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

⁹¹ The list of applicable plans can be found in section 5.3 of the final EIS for the project.

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

works are safe, and that there is no reason to believe that Appalachian Power cannot continue to safely manage, operate, and maintain these facilities under a new license.

D. Ability to Provide Efficient and Reliable Electric Service

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

E. Need for Power

125. The Smith Mountain Project is an integral part of AEP's system of generation, which includes nearly 38,000 MW of generating capacity.⁹³ Coal-fired plants account for 73 percent of the capacity, while natural gas represents 16 percent and nuclear 8 percent. The remaining 3 percent comes from wind, hydro, pumped storage, and other sources. AEP owns and operates 17 hydroelectric facilities (878 MW) located on 6 river systems in 5 states. There are 17 generating facilities (8,018.1 MW) within Appalachian Power's service area, of which Appalachian Power owns 6,415 MW. Hydro and pump storage projects represent 823.1 MW, with the Smith Mountain Project being 636 MW.

126. To assess the need for power, staff looked at the needs in the operating region in which the project is located, which is the Reliability First Corporation (RFC) region of the North American Electric Reliability Council. The peak demand for the RFC region, typically the summer season, is projected to grow at an annual average compound rate of 1.67 percent over the 10-year planning period from 2008 through 2017.

127. Power from the Smith Mountain Project will continue to contribute to the region's diversified generation mix. Power generated by the project will help AEP to meet their customers' growing energy needs, and help meet part of the regional need for power. In addition, the project may displace fossil-fueled electric power generation that the regional utilities currently use, and, thereby, may conserve nonrenewable fossil fuels and reduce the emission of noxious byproducts caused during the combustion of fossil fuels.

⁹³Final EIS at 3.

F. Transmission Services

128. The Smith Mountain and Leesville developments have appurtenant electric and mechanical equipment necessary to transmit power to AEP's interconnected system. The project's transmission facilities that are required to be licensed include the generator leads, station transformers, buses and switchyards located at the powerhouses, and double-circuit, 13 8-kilovolt tie-in lines that vary in length from 317 feet (Leesville) to 998 feet (Unit 2 at Smith Mountain). Appalachian Power proposes no changes that would affect its transmission facilities or the capability of the project to transmit electric power to the substations for delivery to local communities or into the regional distribution system.

G. Cost Effectiveness of Plans

129. This license requires certain measures and the implementation of a variety of management plans to address sedimentation, erosion, and water management, and to enhance fish and wildlife, recreation, and cultural resources at the project. Based on Appalachian Power's record as an existing licensee, staff concludes that these plans are likely to be carried out in a cost-effective manner.

H. Actions Affecting the Public

130. Appalachian Power provided extensive opportunity for public involvement in the development of its application for a new license for the Smith Mountain Project. During the previous license period, Appalachian Power: (a) provided employment opportunities and facilities to enhance the public use of project lands and facilities; and (b) operated the project with consideration for the protection of resources along the Roanoke River. Appalachian Power uses the project to help meet local power needs and pays taxes that help cover the cost of public services provided by the local government.

PROJECT ECONOMICS

131. 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.*,⁹⁴ 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

⁹⁴ 72 FERC ¶ 61,027 (1995).

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.

132. In applying this analysis to the Smith Mountain Project, staff considered three licensing options:⁹⁵ Appalachian Power's proposal, the proposed action with mandatory conditions, and the project as licensed herein (with mandatory conditions and additional staff-recommended measures). As proposed by Appalachian Power, the annual cost of operating the Smith Mountain Project is \$48,423,657, or \$90.34/megawatt-hour (MWh). The proposed project would generate an estimated average of 536,040 MWh of energy annually. When we multiply our estimate of average generation by the alternative power cost of \$106.39/MWh,⁹⁶ we get a total value of the project's power of \$57,030,047 in 2008 dollars. To determine whether the proposed project is currently economically beneficial, we subtract the project's costs from the value of the project's power. Therefore, in the first year of operation, the project would cost \$8,606,389, or \$16.06/MWh, less than the likely alternative cost of power.

133. As proposed with mandatory conditions, the annual cost of operating the Smith Mountain Project would be \$48,480,967, or \$90.44/MWh. Based on the same alternative power cost and estimated average annual generation of 536,040 MWh, project power would cost \$8,549,080, or \$15.95/MWh, less than the likely alternative cost of power.

134. As licensed herein, with the mandatory conditions and staff measures, the annual cost of operating the project would be about \$48,429,863, or \$90.35/MWh. Based on the same alternative power cost and estimated average annual generation of 536,040 MWh, the project would cost \$8,600,183, or \$16.04/MWh, less than the likely alternative cost of power.

135. 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 their 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.

⁹⁵Details of staff's economic analysis for the project, as licensed herein and for various alternatives, are included in the final EIS.

⁹⁶The alternative power cost of \$106.39/MWh is based on information in exhibit D of the license application.

COMPREHENSIVE DEVELOPMENT

136. Sections 4(e) and 10(a)(1) of the FPA⁹⁷ require the Commission to give equal consideration to power development purposes and to the purposes of energy 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. Accordingly, any license issued shall, in the Commission's judgment, be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

137. The final EIS for the project contains background information, analysis of effects, and support for related license articles. The project will be safe if operated and maintained in accordance with the requirements of this license.

138. Based on my independent review and evaluation of the Smith Mountain Project, recommendations from the resource agencies and other stakeholders, water quality certification conditions, and the no-action alternative, as documented in the EIS, I have selected the proposed Smith Mountain Project, with the certification conditions and the staff-recommended measures, and find that it is best adapted to a comprehensive plan for improving or developing the Roanoke River.

139. I select this alternative because: (1) issuance of a new license will serve to maintain a beneficial, dependable, and 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 636 MW of electric capacity available from this renewable resource may offset the use of fossil-fueled, steam-electric generating plants, thereby conserving nonrenewable resources and reducing atmospheric pollution.

LICENSE TERM

140. Section 15(e) of the FPA,⁹⁸ 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 extensive

97 16 U.S.C. §§ 797(e) and 803(a)(1) (2006).

98 16 U.S.C. § 808(e) (2006).

measures.⁹⁹ This license authorizes no new capacity, and only a minor amount of new environmental enhancement measures. Consequently, a 30-year license for the Smith Mountain Project is appropriate.

141. Because the term of the current license does not expire until March 31, 2010, this license order is not effective until April 1, 2010.¹⁰⁰

The Director Orders:

(A) This license is issued to Appalachian Power Company (licensee), for a period of 30 years, effective April 1, 2010, to operate and maintain the Smith Mountain Pumped Storage Project. This license is subject to the terms and conditions of the 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 those lands, enclosed by the project boundary shown by Exhibit G drawings filed July 15, 2008:

Exhibit G Drawings	FERC No. 22 10-	Description
1	1001	Index Sheet
2	1002	Project Area and Boundary Map
3	1003	Project Area and Boundary Map
4	1004	Project Area and Boundary Map
5	1005	Project Area and Boundary Map
6	1006	Project Area and Boundary Map
7	1007	Project Area and Boundary Map
8	1008	Project Area and Boundary Map

⁹⁹ See *Consumers Power Co.*, 68 FERC ¶ 61,077 at 6 1,383-84 (1994).

¹⁰⁰ For this reason, the various deadlines in the license articles are measured from April 1, 2010, the effective date, rather than from the order issuance date.

Exhibit G Drawings	FERC No. 22 10-	Description
9	1009	Project Area and Boundary Map
10	1010	Project Area and Boundary Map
11	1011	Project Area and Boundary Map
12	1012	Project Area and Boundary Map
13	1013	Project Area and Boundary Map
14	1014	Project Area and Boundary Map
15	1015	Project Area and Boundary Map
16	1016	Project Area and Boundary Map

(2) Smith Mountain Development – The Smith Mountain development consists of: (1) a 235-foot-high, 816-foot-long concrete arch dam, crest elevation of 812.0 feet National Geodetic Vertical Datum (NGVD); (2) Smith Mountain Lake, a 20,260-acre reservoir with a normal water surface elevation of 795.0 feet NGVD; (3) a 100-foot-long overflow spillway, at each end of the dam, each having a crest elevation of 795.0 feet NGVD; (4) Five intakes with trashracks, which provide flow to; (5) two 20-foot-diameter and three 26-foot-diameter steel penstocks; (6) a powerhouse with five generating units (two conventional and three reversible pump/turbine units) with total installed capacity of 586 MW, located immediately downstream from the toe of the dam; (7) a 600,000-kilovolt-ampere (kVA) substation located in the vicinity of the powerhouse; and (8) double-circuit, 138-kilovolt (kV) tie-in lines that vary in length from 946 to 998 feet.

Leesville Development – The Leesville development consists of: (1) a 94-foot-high, 980-foot-long concrete gravity dam, crest elevation of 615.67 feet NGVD, with four gated spillway sections (totaling 224 feet in length), each equipped with a 50-foot-wide by 35-foot-high Taintor gate; (2) Leesville Lake, a 3,260-acre reservoir with a water surface elevation of 613.0 feet NGVD; (3) two intakes with trashracks which provide flow to; (4) a powerhouse, integral to the dam, containing two turbine-generating units with a total installed capacity of 50 MW; (5) a 50,000 kVA substation located in the vicinity of the powerhouse, and (6) a 317-foot-long, double-circuit, 138-kilovolt (kV) tie-in line.

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

Exhibit A: Pages A-1 through A-11 of the license application, filed on
March 27, 2008.

The following exhibit F drawings filed on March 27, 2008:

Exhibit F Drawings	FERC No. 2210-	Description
1	1017	Smith Mountain Dev. Project Structures Plans and Sections
2	1018	Powerhouse Plans and Section
3	1019	Leesville Dev. Project Structures Plans and Sections
4	1020	Rock Anchor Location Plan

(C) The Exhibits A, F, and G described above are approved and made part of the license.

(D) This license incorporates, and is subject to, the conditions of the water quality certification issued by the Virginia Department of Environmental Quality pursuant to section 401(a)(1) of the Clean Water Act, 33 U.S.C. § 143 1(a)(1)(2006), as those conditions are set forth in Appendix A to this order.

(E) The *Habitat Management Plan* filed with the license application on March 27, 2008, and supplemented on July 15, 2008, is approved and made part of this license. Article 406 requires implementation of the plan with modifications.

(F) The *Aquatic Vegetation Management Plan* filed with the license application on March 27, 2008, and supplemented on July 15, 2008, is approved and made part of this license. Article 409 requires implementation of the plan with modifications.

(G) The *Debris Management Plan* filed with the license application on March 27, 2008, and supplemented on July 15, 2008, is approved and made part of this license. Article 411 requires implementation of the plan with modifications.

(H) The *Aids to Navigation Management Plan* filed with the license application on March 27, 2008, and supplemented on July 15, 2008, is approved and made part of the license. Article 412 requires implementation of the plan with modifications.

(I) The *Shoreline Management Plan* filed with the license application on March 27, 2008, is approved and made part of the license. Article 413 requires implementation of the plan, and the filing of an update with revisions by July 5, 2010.

(J) This license is also subject to the articles set forth in Form L-3 (Oct. 1975, entitled "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters of the United States" (*See* 54 FPC 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 becomes effective, and as determined in accordance with provisions of the Commission's regulations in effect from time to time, for the purposes of 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 636.0 megawatts.

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

(a) Three sets of the approved exhibit drawings shall be reproduced on silver or gelatin 35 mm microfilm. All microfilm shall be mounted on type D (3-1/4" X 7-3/8") aperture cards. Prior to microfilming, the FERC Drawing Number (i.e., P-2210-1001 through P-2210-1020) 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, G- 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 segregated from other exhibits and identified as (CEII) material under 18 CFR §388.113(c). 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-2210-1017, 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

Each Exhibit G drawing that includes the project boundary must contain a minimum of three known reference points (i.e., latitude and longitude coordinates, or state plane coordinates). The points must be arranged in a triangular format for GIS geo-referencing the project boundary drawing to the polygon data, and must be based on a standard map coordinate system. The spatial reference for the drawing (i.e., map projection, map datum, and units of measurement) must be identified on the drawing and each reference point must be labeled. In addition, each project boundary drawing must be stamped by a registered land surveyor.

(c) The licensee shall file two separate sets of the project boundary data in a geo-referenced electronic file format (such as ArcView shape files, GeoMedia files, MapInfo files, or a similar GIS format) with the Secretary of the Commission, ATTN: OEP/DHAC. The filing shall include both polygon data and all reference points shown on the individual project boundary drawings. A single electronic boundary polygon data file is required for the project boundary. Depending on the electronic file format, the polygon and point data can be included in a single file with multiple layers. The georeferenced electronic boundary data file must be positionally accurate to ± 40 feet in order to comply with National Map Accuracy Standards for maps at a 1:24,000 scale. The file name(s) shall include: FERC Project Number, data description, date of this license, and file extension in the following format [P-2210, boundary polygon/or point data, MM-DDYYYY.SHP]. The data must be accompanied by a separate text file describing the spatial reference for the geo-referenced data: map projection used (i.e., UTM, State Plane, Decimal Degrees, etc.), the map datum (i.e., North American 27, North American 83, etc.), and the units of measurement (i.e., feet, meters, miles, etc.). The text file name shall include: FERC Project Number, data description, date of this license, and file extension in the following format [P-2210, project boundary metadata, MM-DDYYYY.TXT].

Article 203. 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 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 204. 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 will 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 start of construction, the licensee shall submit one copy of its plans and specifications and supporting design report 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 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 any recreation facility and/or other facility constructed pursuant to 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 401. Commission Approval, Reporting, Notification, and Filing of Amendments Required by Mandatory Conditions.

(a) Requirement to File Plans for Commission Approval

Three conditions of this license found in Part I of the Virginia Department of Environmental Quality's (Virginia DEQ) water quality certificate (Certification) (Appendix A) require the licensee to prepare and implement plans in consultation with other entities, for approval by the Virginia DEQ, without prior Commission approval. Each such plan shall also be submitted to the Commission for approval. These plans are listed below:

Virginia DEQ Condition No.	Plan Name	Commission Due Date
D.3	Leesville Auto-Cycling vs. Continuous Release Study Plan (Flow Study Plan) ¹⁰¹	The revised plan, as required herein, must be filed within 120 days of license issuance.
F.2	Water Quality Monitoring Plan	Within 180 days of license issuance
F.4	Dissolved Oxygen Feasibility Study (if necessary)	February 28, 2016

The flow study plan required by Condition D.3 shall also include provisions for: (a) expanding the study area to include the reach of the Roanoke River from the Leesville dam downstream to Altavista, Virginia; (b) conducting the study for 3 years, with additional field work in years 2 and 3 to collect realtime, empirical data on bank erosion, water quality, aquatic habitat, fish populations/communities, recreation (including angling), and public safety; (c) limited quantitative measurements of riverbank erosion using bank pins; (d) deploying level loggers on the lower reach of Goose Creek to quantify the effects of flow fluctuations related to Leesville releases on aquatic habitat in the creek (including Roanoke logperch habitat); and (e) filing the final report with the Commission for approval.

The licensee shall submit to the Commission documentation of any consultation required by the conditions, copies of comments and recommendations by consulted entities made in connection with each plan and a description of how each plan

¹⁰¹ Appalachian Power filed the draft plan submitted to the Virginia DEQ on May 7, 2009, as part of its comments on the draft EIS.

accommodates the comments and recommendations. 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 make changes to any plan or recommendation submitted. Upon Commission approval, each plan or recommended measure becomes a requirement of the license, and the licensee shall implement the plan or measure.

(b) Requirement to File Reports and Notifications with the Commission

Five conditions of this license found in Part I of the Virginia DEQ's Certification (Appendix A) require the licensee to prepare reports documenting the results of various studies and surveys, and to notify the Virginia DEQ of the occurrence of certain events, without filing the reports and notifications with the Commission. Each such submittal shall also be filed with the Commission. These are listed below:

Virginia DEQ Condition No.	Plan Name	Commission Due Date
D.3	Flow Study Report	May 31, 2010
E.2	Water Management Report	January 31, 2015, and every 5 years thereafter
F.3	Water Quality Monitoring Report	January 31, 2015
C.8	Reporting of fish kills or spills of fuels or oils	Within 24 hours of fish kill or spill
C.9	Reporting of any additional impacts to surface waters, including wetlands	Within 30 days of impact event

The licensee shall submit to the Commission documentation of any consultation, and copies of any comments and recommendations made by any consulted entity in connection with each report.

(c) Requirement to Notify Commission of Planned and Unplanned Deviations from License Requirements

Condition E.1 of Part I of the Virginia DEQ's Certification (Appendix A) would allow the licensee to temporarily suspend the flow requirements of Condition D upon mutual agreement between the licensee and the Virginia DEQ, after consultation with the Virginia Department of Game and Inland Fisheries and appropriate public input. The Commission shall be notified prior to suspending the flow requirements of the license, if possible, or in the event of an emergency, as soon as possible, but no later than 10 days after each such incident. The U.S. Fish and Wildlife Service and the National Marine Fisheries Service shall also be notified of such modifications in the flow requirements.

(d) Requirement to File Amendment Applications

Two conditions of this license found in Part I of the Virginia DEQ's Certification (Appendix A) contemplate unspecified, long-term changes to project operations or facilities for the purpose of attaining environmental standards or addressing environmental effects. These changes may not be implemented until Commission authorization is granted, after the filing of an application to amend the license. These conditions are listed below:

Virginia DEQ Condition No.	Modification
D.3	Changes to the Leesville development to facilitate a continuous flow release, or the implementation of other forms of enhancement (<i>e.g.</i> , stream restoration for portions of the affected river reach)
F.4	Changes in the facilities or operations of the Smith Mountain development to facilitate compliance with Virginia's dissolved oxygen standards

Article 402. Erosion Monitoring Plan. Within 90 days of the effective date of this license, the licensee shall file with the Commission, for approval, a final erosion monitoring plan that addresses erosion monitoring and remediation, as appropriate, at the Smith Mountain Project. The plan shall include the provisions of the proposed *Erosion Monitoring Plan*, filed July 15, 2008, with, at a minimum, the following revisions:

- (a) a provision to monitor shoreline locations that represent a full range of scarp heights; and
- (b) monitoring to be conducted, and a report to be filed, every 5 years.

The revised erosion monitoring plan shall be prepared in consultation with the Virginia Department of Game and Inland Fisheries, the Virginia Department of Environmental Quality, the Virginia Department of Conservation and Recreation, the Tri-County Relicensing Committee (or its successor), the Smith Mountain Lake Association, and the Leesville Lake Association. The licensee shall include with the erosion monitoring plan documentation of consultation, copies of comments and recommendations on the completed plan after it has prepared and provide to the aforementioned consulted entities, and specific descriptions of how their comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment 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 revised erosion monitoring plan. Implementation of the erosion monitoring plan, including any land-disturbing activities therein, shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement any such modification(s), including any changes required by the Commission.

Article 403. Sedimentation Monitoring Plan. Within 90 days of the effective date of this license, the licensee shall file with the Commission, for approval, a final sedimentation monitoring plan that addresses sedimentation monitoring and remediation measures, as appropriate, at the Smith Mountain Project. The plan shall include the provisions of the proposed *Sedimentation Monitoring Plan*, filed July 15, 2008, with, at a minimum, the following revisions:

- (a) the types of actions Appalachian Power would implement (*e.g.*, methods for dredging), and under what conditions Appalachian Power would propose dredging at a project recreation site;
- (b) Craddock Creek, Mitchells Cove, and areas near Mariners Landing in the list of areas to be monitored under the plan; and
- (c) the deletion of section 2 (Formation of a Basin-wide Watershed Committee) from the plan.

The revised sedimentation monitoring plan shall be prepared in consultation with the Virginia Department of Game and Inland Fisheries, the Virginia Department of Environmental Quality, the Virginia Department of Conservation and Recreation, the Tri-County Relicensing Committee (or its successor), the Smith Mountain Lake Association, the Leesville Lake Association, the Tri-County Lake Administrative Commission, the local Soil and Water Conservation Districts and the counties' Sediment and Erosion Control Departments, and Ferrum College. The licensee shall include with the sedimentation monitoring plan documentation of consultation, copies of comments and recommendations on the completed plan after it has prepared and provide to the aforementioned consulted entities, and specific descriptions of how their comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment 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 revised sedimentation monitoring plan. Implementation of the sedimentation monitoring plan, including any land-disturbing activities therein, shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement any such modification(s), including any changes required by the Commission.

Article 404. Water Management Plan. Within 90 days of the effective date of this license, the licensee shall file with the Commission, for approval, a final water management plan that addresses water management activities at the Smith Mountain Project. The plan shall include the provisions of sections 1 through 5 of the proposed *Water Management Plan*, filed July 15, 2008, with, at a minimum, the following revisions:

- (a) the removal of section 2.E from the proposed *Water Management Plan* pertaining to water withdrawals;
- (b) a requirement that Appalachian Power consult with agencies and other stakeholders identified in the proposed *Water Management Plan* and the Virginia Department of Environmental Quality's (Virginia DEQ) water quality certificate, as well as the National Marine Fisheries Service and Dominion Power, regarding implementation of the plan (a section 5 revision);
- (c) a provision for consulting with the entities identified in item (b) above regarding how the forecast model would be updated with hydrologic data that becomes available between the 5-year review cycles;
- (d) the flow provisions of Condition D.2 of the Virginia Department of Environmental Quality's (Virginia DEQ) certification (*see Appendix A of this order*);
- (e) the operational provisions included in Condition D.4 of the Virginia DEQ's certification (*see Appendix A of this order*);
- (f) the stipulations regarding the forecast based simulation model outlined in Condition D.5 of the Virginia DEQ's certification (*see Appendix A of this order*);
- (g) the water storage provisions of Condition D.6 of the Virginia DEQ's certification (*see Appendix A of this order*);
- (h) the flow provisions of Condition D.7 of the Virginia DEQ's certification (*see Appendix A of this order*);
- (i) the variance process, as outlined in Condition E. 1 of the Virginia DEQ's certification (*see Appendix A of this order*), as modified to read as: "If required by operating emergencies beyond the control of the licensee, or when Trigger 3 events occur during drought or low inflow conditions, flows can be temporarily modified from those described in the *Water Management Plan* upon mutual agreement between the licensee and the Virginia DEQ, in consultation with the Virginia Department of Game and Inland Fisheries, following appropriate public input as determined by the Virginia DEQ;"
- (j) the adaptive management provisions outlined in Condition E.2 of the Virginia DEQ's certification (*see Appendix A of this order*), as modified to read as: "Within 5 years after the date that the instream flow conditions become effective, and every 5 years thereafter, the licensee shall hold a public meeting in the vicinity of the project and accept comments on the

performance of the project in maintaining lake levels and in providing flows necessary to protect instream beneficial uses. The licensee shall summarize the comments and provide them to the Virginia DEQ, as well as the Commission in accordance with Article 40 1(b), along with any recommendations that the licensee might have;”

- (k) the monitoring provisions of the proposed *Water Management Plan*, as supplemented with the provisions of Condition G. 1 of the Virginia DEQ’s certification (*see* Appendix A of this order), except the term “Permittee” shall be replaced with the term “Licensee;”
- (l) the reporting provisions contained in Condition G.2 of the Virginia DEQ’s certification (*see* Appendix A of this order), as modified to read as: “The licensee shall file an annual report with the Virginia DEQ, the Virginia DGIF, and the Commission in accordance with Article 40 1(b), that tabulates by date, the status of the project in terms of the trigger condition in effect, the adjusted elevation, the mean daily release at Leesville, and the target flow required by the table in paragraph (i). The report shall be submitted by January 31st for the previous calendar year;” and
- (m) the agreement entered into by the licensee and the U.S. Corps of Engineers (Corps), dated July 12, 1966, for the purpose of determining detailed operating procedures for use during flood periods.¹⁰²

The revised water management plan shall be prepared in consultation with the Virginia Department of Game and Inland Fisheries, the Virginia Department of Environmental Quality, the Virginia Department of Conservation and Recreation, the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the Tri-County Relicensing Committee (or its successor), the Tri-County Administrative Commission, the Smith Mountain Lake Association, the Leesville Lake Association, the Roanoke River Basin Association, and Dominion Power. The licensee shall include with the water management plan documentation of consultation, copies of comments and recommendations on the completed plan after it has prepared and provide to the aforementioned consulted entities, and specific descriptions of how their comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment 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.

¹⁰² If at any time the Corps updates its Operations Manual for the Roanoke River, the licensee shall consult with the Corps regarding any needed updates to the agreement. The updated agreement shall be filed with the Commission for approval.

The Commission reserves the right to require changes to the revised water management plan. Implementation of the water management plan, including any land-disturbing activities therein, shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement any such modification(s), including any changes required by the Commission.

Article 405. Water Quality Monitoring Plan. Within 90 days of the effective date of this license, the licensee shall file with the Commission, for approval, a final water quality monitoring plan that addresses water quality monitoring and remediation, as appropriate, at the Smith Mountain Project. The plan shall include the provisions of the proposed *Water Quality Monitoring Plan*, filed July 15, 2008, with, at a minimum, the following revisions:

- (a) a provision to operate the turbines at Smith Mountain Dam from July 1st through September 30th to minimize or eliminate violations of water quality standards for dissolved oxygen in the tail waters downstream from the Smith Mountain dam, whereby the turbines with intakes that are highest in the water column are operated first and taken offline last;
- (b) a provision to develop and file, in accordance with the requirements of Article 40 1(a) for Condition F.4 found in Part I of the Virginia Department of Environmental Quality's water quality certification, a feasibility study and plan for physical or mechanical alterations of water release procedures, developed in consultation with the Water Quality Technical Review Committee (Water Quality Committee), to address violations of water quality standards for dissolved oxygen (DO) caused by turbine discharge from Smith Mountain Lake, should the operating practices required by paragraph (a) prove insufficient at improving DO levels in Smith Mountain's turbine discharge;
- (c) a stipulation to provide the Water Quality Committee with the water quality data collected on a monthly (May 1 to October 31) and bi-monthly (November 1 to 30) basis; and
- (d) a program to annually monitor, or arrange for the annual monitoring of, water quality on Smith Mountain and Leesville lakes that (i) is consistent with the current programs implemented by the Smith Mountain Lake Association (Smith Mountain Association) and the Leesville Lake Association (Leesville Association) and (ii) is developed in consultation with the Virginia Department of Game and Inland Fisheries (Virginia DGIF), the Virginia DEQ, the Smith Mountain Association, the Leesville Association, Ferrum College, and Lynchburg College.¹⁰³

¹⁰³ In describing its program, the licensee shall outline: (a) the timing of monitoring; (b) the methods to be used; (c) the frequency of monitoring; and (d) the standards to be met.

The revised water quality monitoring plan shall be prepared in consultation with the Virginia DGIF, the Virginia DEQ, the Tri-County Administrative Commission, the Smith Mountain Association, the Leesville Association, Ferrum College, and Lynchburg College. The licensee shall include with the water quality monitoring plan documentation of consultation, copies of comments and recommendations on the completed plan after it has prepared and provide to the aforementioned consulted entities, and specific descriptions of how their comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment 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 revised water quality monitoring plan. Implementation of the water quality monitoring plan, including any land-disturbing activities therein, shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement any such modification(s), including any changes required by the Commission.

Article 406. Habitat Management Plan. Upon the effective date of this license, the licensee shall implement the *Habitat Management Plan*, filed July 15, 2008, and shall include the following modifications.

- (a) The 1st sentence on page 5, section 2.1.4, of the proposed plan is revised to read, "A property owner may apply for a permit to modify the existing vegetation for the following reasons, as defined in the SMP: ..."
- (b) Habitat enhancement projects shall not be limited to areas adjacent to public access areas, islands, and areas adjacent to undeveloped shoreline, but could include appropriate areas adjacent to some homeowner developments and commercial areas that are within the project boundary.
- (c) Monitoring of habitat project sites shall include photographs that can be downloaded into a GIS database.
- (d) All large habitat projects constructed specifically as structures to attract fish for angling purposes shall be marked by buoys as "fish attractors."
- (e) The licensee shall develop, in consultation with the members of the Habitat Technical Review Committee, materials to educate the public to the benefits of preserving shoreline/aquatic habitats, as well as establishing/creating appropriate habitats (including detailing the types of projects that can be implemented).

The approved *Habitat Management Plan* may not be amended without prior Commission approval.

Article 407. 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 408. Roanoke Logperch Enhancement Measures. The licensee shall, in consultation with the U.S. Fish and Wildlife Service (FWS) and the Virginia Department of Game and Inland Fisheries (Virginia DGIF), develop projects related to the recovery of the Roanoke logperch (*Percina rex*) in the upper Roanoke Watershed. These projects shall include activities related to habitat restoration and/or reintroduction of the species.

The licensee will meet annually (by February 28th) with FWS and the Virginia DGIF to identify projects to be completed for the following calendar year. Once identified, the proposed projects will be filed for Commission approval. The projects identified in the annual report to the Commission will be consistent with the types of measures and other activities described by the Commission in its Settlement Policy (*Settlements in Hydropower Licensing Proceedings under Part I of the Federal Power Act*, 116 FERC ¶ 61,270 (2006)). The licensee shall include, with its proposal, details regarding the projects, a schedule for implementing the projects, criteria for evaluating their success, and a map identifying their locations. The proposal also shall include the record of correspondence with the resource agencies, including: (a) copies of letters, emails, and phone logs; and (b) a summary of the annual meeting.

The Commission reserves the right to require changes to the annual proposal. Implementation of the proposed measure(s) shall not begin until the licensee is notified by the Commission that the measure(s) are approved. Upon Commission approval, the licensee shall implement the measures in its proposal, including any changes required by the Commission.

Beginning May 1, 2016, and every 5 years thereafter, the licensee shall file for Commission approval, a report describing the projects completed during the previous five calendar years. The report shall: (a) identify the projects completed; (b) describe the effectiveness of the efforts, including the criteria used for determining their success; (c) identify what projects might be planned for the next reporting period; and (d) include any recommendations for changes to the measures required by this article.

The licensee shall prepare the 5-year report in consultation with FWS and the Virginia DGIF. The report shall include documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how their comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment 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 measures required by this article based on the results of the report. Implementation of the measures shall not begin until the licensee is notified by the Commission that the measures are approved. Upon Commission approval, the licensee shall implement the measures, including any changes required by the Commission.

Article 409. Aquatic Vegetation Management Plan. Upon the effective date of this license, the licensee shall implement the *Aquatic Vegetation Management Plan*, filed July 15, 2008, and shall include the following modifications.

- (a) The plan shall include a provision to notify adjacent landowners prior to the treatment of invasive aquatic vegetation beds. The notification procedures (including the notification period) shall be developed after consultation with the Aquatic Vegetation Technical Review Committee.
- (b) The report filed by the Licensed Applicator shall identify the type of herbicide used in any treatments.
- (c) The plan shall include a requirement that Appalachian Power control/treat invasive aquatic vegetation beds at public boat ramps and other public areas (*e.g.*, county and state parks, swimming areas, etc), where determined appropriate by the Aquatic Vegetation Technical Review Committee.

The approved *Aquatic Vegetation Management Plan* may not be amended without prior Commission approval.

Article 410. Recreation Management Plan. The licensee shall operate and maintain, or arrange for the operation and maintenance of, the project's recreation facilities. The existing project recreation facilities include (a) the Anthony Ford Public Boat Launch, (b) the Hales Ford Public Boat Launch, (c) the Hardy Ford Public Boat Launch, (d) the Penhook boat dock and Public Boat Launch, (e) the Scruggs Public Boat Launch, (f) the Smith Mountain Lake Visitor's Center and Picnic Area, (g) the Myer's Creek Boat Ramp, (h) the Leesville Dam Public Boat Launch, (i) the Leesville Dam Picnic Area, and (j) the Leesville Dam Fishing Access/Platform. The project recreation facilities also include three sites set aside for future recreation development, including (a) the 45-acre Hardy parcel, (b) the 9-acre Oak Court parcel, and (c) the 265-acre Bull Run parcel.

Within 90 days of the effective date of this license, the licensee shall file with the Commission, for approval, a final recreation management plan that addresses recreation management activities for the existing recreation facilities, as well as the proposed recreational sites. The plan shall include the provisions of the proposed *Recreation Management Plan*, filed July 15, 2008, with, at a minimum, the following revisions:

- (1) a plan and schedule to ensure that access is maintained at public boat ramps that are project facilities (including those sites maintained by Virginia DGIF) by lengthening the ramps, dredging, or some combination thereof; a plan and schedule to install permanent toilets at all project recreation facilities; a provision to assess the appropriateness of providing picnic pavilions at Anthony Ford Public Boat Ramp, Penhook Boat Dock and Public Boat Launch, and Scruggs Public Boat Launch, and, if appropriate, a plan and schedule for providing such facilities; a plan and schedule for providing between 63 to 70 parking spaces for vehicles with trailers at the Hardy Ford Public Boat Launch; a plan and schedule to improve parking at the Penhook Boat Dock and Public Boat Launch; a procedure for determining the need for additional recreation facilities, in addition to the three parcels proposed by Appalachian Power to be set aside for future recreation development (Hardy, Oak Creek, and Bull Run), that includes conducting a study to determine the feasibility of providing (i) additional parking at the Leesville Dam Fishing Access/Platform, (ii) additional parking and fishing facilities at the site recommended by the Virginia Department of Game and Inland Fisheries (Virginia DGIF) located on the Roanoke River between Hardy Ford and Hales Ford Bridge, (iii) additional parking and fishing facilities at the Virginia Department of Transportation's Webster Road Access Area, (iv) a canoe access facility on the Lower Pigg River, and (v) a boat ramp and fishing facility on the north side of Leesville Lake;
- (7) a provision to consult with the Recreation Technical Review Committee to develop procedures for managing the islands on Smith Mountain Lake to minimize resource damage (*e.g.*, soil compaction, erosion, sanitation) within 2 years of the issuance of this license;
- (8) a plan and schedule to consult with the Virginia DGIF to determine the location for the official use boat launch facility at the Leesville dam tailrace and provide for the installation and operation of the facility;
- (9) a stipulation to survey recreation use on weekend days and holidays during April through October, as part of the recreation use surveys to be conducted every 6 years in conjunction with the filing of FERC Form 80, so that this use is considered in planning for future recreation facilities;
- (10) a requirement to conduct an angler use survey of Smith Mountain and Leesville Lakes every 6 years, in consultation with the Virginia DGIF; and
- (11) site-specific erosion and sedimentation control measures for the construction of proposed recreation facilities and improvement.

The revised recreation management plan shall be prepared in consultation with the Virginia DGIF, the Virginia Department of Conservation and Recreation, the Smith Mountain Lake Association, the Leesville Lake Association, Franklin County, and the

Recreation Technical Review Committee. The licensee shall include with the recreation plan documentation of consultation, copies of comments and recommendations on the completed plan after it has prepared and provide to the aforementioned consulted entities, and specific descriptions of how their comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensees' reasons, based on project-specific information.

The Commission reserves the right to require changes to the revised recreation management plan. Implementation of the recreation management plan, including any land-disturbing activities therein, shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the provisions of the plan, including any changes required by the Commission.

Article 411. Debris Management. Upon the effective date of this license, the licensee shall implement sections 3, 4, and 5 of the *Debris Management Plan*, filed July 15, 2008, with the following modification. The licensee shall consult with the Debris Technical Review Committee and develop a procedure for monitoring and controlling debris at public swimming beaches, the project recreation facilities (*i.e.*, the public recreation areas maintained by the Virginia Department of Game and Inland Fisheries and Appalachian Power), and other areas (*e.g.*, coves), as appropriate. This monitoring and control program shall be in effect from Memorial Day to Labor Day for purpose of removing debris on an as-needed basis.

The approved *Debris Management Plan* may not be amended without prior Commission approval.

Article 412. Aids to Navigation Management Plan. Upon the effective date of this license, the licensee shall implement the *Aids to Navigation Management Plan*, filed July 15, 2008, and shall include the following modifications.

- (a) The licensee shall install and maintain a lighted navigation system on Leesville Lake, subject to Virginia Department of Game and Inland Fisheries and U.S. Coast Guard approval, as appropriate.
- (b) Section 6.1 .a, on page 5 of the proposed plan, is revised to read, "Upon Commission approval of the management plan, Appalachian, or its designee through a cooperative agreement, will obtain USCG approval for the new aids to navigation system on Smith Mountain Lake."
- (c) Section 6.2, on page 5 of the proposed plan, is revised to read, "Appalachian, or its designee through a cooperative agreement, will obtain approval from the USCG for the existing aids to navigation system for the defined waterway."

- (d) Section 6.2.a, on page 5 of the proposed plan, is revised to read, “Appalachian will ensure applications are submitted to the USCG.” Section 6.2.b, on page 5
- (e) of the proposed plan, is revised to read, “Appalachian will ensure modifications are implemented in accordance with USCG permits.”
- (f) The removal of section 10.2, pertaining to marking on Smith Mountain Lake outside of the defined waterway from the proposed plan.
- (g) The licensee shall coordinate the implementation of the approved *Aids to Navigation Management Plan* with the approved *Aquatic Vegetation, Recreation, and Debris Management Plans*.

The approved *Aids to Navigation Management Plan* may not be amended without prior Commission approval.

Article 413. Shoreline Management Plan. Upon the effective date of this license, the licensee shall continue to implement the *Shoreline Management Plan* (SMP), filed on March 27, 2008, and approved by the Commission on July 5, 2005 (112 FERC ¶ 61,026) and as amended by Commission staff on April 14, 2006 (115 FERC ¶ 62,071) and February 23, 2007 (118 FERC ¶ 62,149). As provided for in section 3.5 of the SMP, the licensee shall file an updated SMP by July 5, 2010. The updated SMP shall include, at a minimum, the following:

- (a) the specific provisions in the *Habitat Management Plan* approved in this license, including (i) replacement of habitat along the shoreline that is removed during shoreline construction activities (*e.g.*, shallow-water habitat that is affected by the installation of riprap or docks), and (ii) mitigation for habitat lost due to the removal of overhanging vegetation along the shoreline; and
- (b) setbacks (or buffers) between commercial/residential and resource protections areas.

The SMP shall be updated in consultation with: (a) the Virginia Department of Conservation and Recreation; (b) the Virginia Department of Environmental Quality; (c) the Virginia Department of Game and Inland Fisheries; (d) the Virginia Department of Historic Resources; (e) the Virginia Department of Health; (f) the Smith Mountain Lake Association; (g) the Leesville Lake Association; (h) the Association of Lake Area Communities; (i) the Smith Mountain Lake Chamber of Commerce; (j) the Tri-County Lake Administrative committee; (k) Bedford, Franklin, Campbell, and Pittsylvania Counties; (l) the Tri-County AEP Relicensing Committee (or its successor); (m) the Smith Mountain Lake State Park; (n) the Virginia Council on Indians; (o) the Archeological Society of Virginia; and (p) Turner’s Building, Inc. The licensee shall include with the updated SMP documentation of consultation, copies of comments and recommendations on the completed plan after it has prepared and provide to the

mentioned consulted entities, and specific descriptions of how their comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment 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 updated SMP. The updated SMP 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 provisions of the updated plan, including any changes required by the Commission.

Article 414. Historic Properties. The licensee shall implement the *Programmatic Agreement Among the Federal Energy Regulatory Commission and the Virginia State Historic Preservation Officer for Managing Historic Properties that may be Affected by Issuing a License to Appalachian Power Company for the Continued Operation and Maintenance of the Smith Mountain Lake Hydroelectric Project in Franklin, Bedford, Pittsylvania, and Campbell Counties, Virginia*, (FERC No. 2210) executed on July 23, 2009 for the project. Pursuant to the requirements of this Programmatic Agreement, the licensee shall file, for Commission approval, a Historic Properties Management Plan (HPMP) within one year of the effective date of this license. In the event that the Programmatic Agreement is terminated, the licensee shall implement the provisions of the approved HPMP. The Commission reserves the authority to require changes to the HPMP at any time during the term of the license. If the Programmatic Agreement is terminated prior to Commission approval of the HPMP, the licensee shall obtain approval from the Commission and Virginia State Historic Preservation Officer, before engaging in any ground-disturbing activities or taking any other action that may affect any historic properties within the project's area of potential effect.

Article 415. 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, such action includes, as 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 types of use and occupancy of project lands and water for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) piers, landings, boat docks, or similar structures and facilities, as determined under the Commission-approved Shoreline Management Plan; (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, 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 reservoir 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 reservoir.

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, as determined under the Commission-approved Shoreline Management Plan; (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 five 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 submit a letter to the Director, Office of Energy Projects, 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 Director, 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 licensee 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; and (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.

(K) 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.

(L) 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 3 13(a) of the FPA, 16 U.S.C. § 8251 (2006), and section 385.713 of the Commission's regulations, 18 C.F.R. § 385.7 13 (2009). 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.

Jeff C. Wright
Director
Office of Energy Projects

Form L-3

(October, 1975) **FEDERAL ENERGY
REGULATORY COMMISSION**

**TERMS AND CONDITIONS OF LICENSE FOR CONSTRUCTED
MAJOR PROJECT AFFECTING NAVIGABLE
WATERS 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 any 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. 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 27. 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 28. 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 Certification Conditions for the Smith Mountain Project Issued
by the Virginia Department of Environmental Quality on October 31, 2008.****PART I – SPECIAL CONDITIONS***A. Authorized Activities*

This permit authorizes the following impacts as indicated in the application dated March 25, 2008, received by DEQ on March 27, 2008, and deemed complete by DEQ on May 2, 2008. The permit authorization and conditions are also based on additional submittals approved by DEQ.

1. The discharge of water from Leesville Lake to the Staunton River for the production of hydroelectricity.
2. The discharge of water from Smith Mountain Lake to Leesville Lake for the production of hydroelectricity.
3. The discharge of pumped water from Leesville Lake to Smith Mountain Lake for the purpose of storing the potential energy of the pumped water.

B. Permit Term

This permit is valid for 15 years from the effective date.

C. Standard Project Conditions

1. The activities authorized by this permit shall be executed in such a manner that any impacts to stream beneficial uses are minimized. As defined in § 62.1-10(b) of the Code, "beneficial use" means both instream and offstream uses. Instream beneficial uses include, but are not limited to, the protection of fish and wildlife habitat, maintenance of waste assimilation, recreation, navigation, and cultural and aesthetic values. Offstream beneficial uses include, but are not limited to, domestic (including public water supply), agricultural, electric power generation, commercial, and industrial uses. Public water supply uses for human consumption shall be considered the highest priority.
2. Flows downstream of the project area shall be maintained to protect all uses.
3. Measures shall be employed at all times to prevent and contain spills of fuels, lubricants, or other pollutants into surface waters.

4. Virginia Water Quality Standards shall not be violated in any surface waters as a result of the project activities.
5. All required notifications and submittals shall be submitted to the DEQ office stated below, to the attention of the VWP permit manager, unless directed in writing by DEQ subsequent to the issuance of this permit:

Department of Environmental Quality
Office of Wetlands and Water Protection
P.O. Box 1105
Richmond, VA 23218

6. All reports required by this permit and other information requested by DEQ shall be signed by the permittee or a person acting in the permittee's behalf, with the authority to bind the permittee. A person is a duly authorized representative only if both criteria below are met. If a representative authorization is no longer valid because of a change in responsibility for the overall operation of the facility, a new authorization shall be immediately submitted to DEQ.
 - (a) The authorization is made in writing by the permittee.
 - (b) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, superintendent, or position of equivalent responsibility. A duly authorized representative may thus be either a named individual or any individual occupying a named position.
7. All submittals shall contain the following signed certification statement:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."
8. Any fish kills or spills of fuels or oils into Smith Mountain Lake by the permittee shall be reported to DEQ immediately upon discovery to the West Central Regional Office Pollution Response Program at (540) 562-6723. Any fish kills or

spills of fuels or oils by the permittee into Leesville Lake or the Staunton River shall be reported to DEQ immediately upon discovery to the South Central Regional Office Pollution Response Program at (434) 582-6236. If DEQ cannot be reached, the spill shall be reported to the Virginia Department of Emergency Management (DEM) at 1-800- 468-8892 or the National Response Center (NRC) at 1-800-424-8802.

9. The permittee shall notify DEQ of any additional impacts to surface waters, including wetlands; of any modifications to the discharge works; and of any change to the type of surface water impacts associated with this project. Any additional impacts, modifications, or changes shall be subject to individual permit review and/or modification of this permit.

D. Instream Flow Conditions

1. The following instream flow conditions become effective upon issuance of a new Federal Energy Regulatory Commission License to Appalachian Power Company for FERC project P-2210.
2. The minimum release from Leesville Lake shall not be less than 375 cubic feet per second in terms of average hourly flow from November 1st through February 29th and 400 cfs in terms of average hourly flow from March 1st through October 31st.
3. The permittee shall conduct a study to determine the relative impact of providing streamflows through hourly auto-cycling compared to continuous releases. The study plan shall be developed in consultation with the Department of Game and Inland Fisheries, the Department of Environmental Quality, the Citizens for the Preservation of the River, and the Tri-County Re-licensing Committee. This study plan shall be submitted to the Board no later than March 1, 2009 for approval. The study shall be conducted in the reach of the Staunton River beginning at the base of the Leesville Dam and extending to the confluence with Goose Creek. The study shall be conducted for no less than one year with the final study schedule to be approved by the Board. The study plan shall be designed to investigate the potential effects of hourly auto-cycling releases on bank erosion, water quality, and fishery and benthic habitat, recreation, public safety, or other factors determined by the Board. The results of this study shall be submitted to the Board for making a final determination on the method of downstream releases. Should the determination of the Board, after it reviews the study, be that the permittee shall implement continuous flow releases, that will be deemed as mitigation. Should the determination of the Board, after it reviews the study, be that hourly auto-cycling continue by the permittee, the Board may require the permittee to implement other forms of mitigation, including stream restoration for those portions of the reach studied. If any of these mitigation actions are required,

such actions shall be implemented by the permittee in accordance with a schedule approved by the Board.

4. Until the initiation of, and during, the study called for in D.3 above, a generating unit at Leesville Lake shall be operated on a one hour auto-cycling basis to provide the required flows. In case the generating units are out of service, the release may be made by spillway gate or other alternative methods available to the permittee.
5. The permittee shall run a forecast based simulation model at least once every three days and evaluate the probability of being at a certain elevation in the future. Trigger I will activate when there is a 20% chance of dropping below 790.5' (adjusted) in 16 weeks. Trigger 2 will activate when there is a 2% chance of dropping below 790' (adjusted) in 10 weeks. Trigger 3 will activate if Trigger 2 is in effect and the reservoir is less than 795' (adjusted) between December 1 and March 31, or anytime the adjusted elevation drops below 791.0' after September 30. All triggers are lifted if the elevation has reached 795' (adjusted) and there is less than a 2% chance of dropping below 790.5' (adjusted) sixteen weeks from that time.
6. To the extent that inflows allow, the permittee shall store additional water in Leesville Lake so that the adjusted storage shall be equal to 795.3 feet adjusted by April 15th of each year. The extra 0.3 feet of storage is intended to be used to ensure the success of the striped bass spawning run and need not be retained past the end of that run unless the permittee chooses to do so, while still complying with minimum instream flowby requirements.
7. The permittee shall release water at Leesville in an attempt to meet the target flows listed in the table below. Target flows are measured at the Brookneal gage, USGS number 02062500 and expressed in units of cubic feet per second. The permittee shall estimate tributary flows between Leesville and Brookneal when running the forecasting model and use such estimates in determining releases from Leesville when attempting to meet the target flows at Brookneal. The permittee will work with the Department of Game and Inland Fisheries to study the effect of the maximum releases identified in notes 5, 6, and 7 on the health of the fishery and provide a report to DEQ as part of the adaptive management condition E.2.

	Normal	Trigger 1	Trigger 2	Trigger 3
January	1100	990	990	770
February	1100	990	990	770
March	1100	935	825	770
April	1500	1275	1200	1050
May	1500 ⁴	1275	1200	1050

June	900 ^{1,5}	765 ^{2,6}	765 ^{3,6}	630 ³
July	700 ¹	595 ^{2,7}	560 ^{3,7}	490 ³
August	See note 1	570 ^{2,7}	570 ^{3,7}	420 ³
September	550	550 ⁷	550 ⁷	385
October	600	570 ⁷	570 ⁷	420
November	700	595 ⁷	560 ⁷	490
December	800	720	720	560

Notes:

1. Minimum release at Leesville of 650 cfs, in terms of an average hourly flow.
2. The minimum release of 650 cfs at Leesville will be made on Saturdays and Sundays and on Memorial Day, July 4th and on Labor Day for recreation. Appalachian shall time the release in an attempt to make it arrive at Long Island at 8 AM on Saturday and to subside at Brookneal at 8 PM on Sunday.
3. A minimum release of 650 cfs will be made at Leesville for 12 hours timed to arrive at approximately sunrise at Long Island on Saturdays and on Memorial Day, July 4th and on Labor Day.
4. Upon notification by the Department of Game and Inland Fisheries that striped bass spawning is complete, the permittee may reduce releases and only be required to make release for the June normal target flow of 900 cfs.
5. The maximum release that the permittee is required to release in attempting to hit the target flow at Brookneal is 700 cfs.
6. The maximum release that the permittee is required to release in attempting to hit the target flow at Brookneal is 650 cfs.
7. The maximum release that the permittee is required to release in attempting to hit the target flow at Brookneal is 480 cfs.

E. Adaptive Management

1. If required by operating emergencies beyond the control of the permittee, or when Trigger 3 events occur during drought or low inflow conditions, flows can be temporarily modified from those described in Section D upon mutual agreement between the licensee and DEQ, in consultation with the Virginia Department of Game and Inland Fisheries, following appropriate public input as determined by DEQ.
2. Within five years after the date that the instream flow conditions become effective, the permittee shall hold a public meeting in the vicinity of the project and accept comments on the performance of the project in maintaining lake levels and in providing flows necessary to protect instream beneficial uses. The permittee shall summarize the comments and provide them to DEQ along with any recommendations that the permittee might have. DEQ may, at its discretion, and

depending on the comments, elect to exercise its right to reopen the permit pursuant to State Law and Regulation.

F. Dissolved Oxygen Conditions, Monitoring and Reporting

1. The permittee shall operate the turbines at Smith Mountain Dam from July 1st through September 30th in a fashion that will minimize or eliminate violations of water quality standards for dissolved oxygen in the tail waters below Smith Mountain Dam. During this time period, the permittee will dispatch the turbines with intakes that are highest in the water column first and take those turbines off line last when generating.
2. Within 120 days of the effective date of the permit, the permit shall provide for DEQ approval a monitoring plan designed to determine the timing and extent of potential contraventions of the water quality standards for dissolved oxygen in Leesville Lake caused by late summer and fall hydroelectric generation from discharges from Smith Mountain Lake. The monitoring plan shall include but not be limited to the location of monitoring stations and the frequency of monitoring.
3. Within five years of the effective date of this permit, the permittee shall provide DEQ a report on Summer and Fall Dissolved Oxygen Monitoring in Leesville Lake during Generation at Smith Mountain Dam. The report shall summarize the effects of power generation on Leesville lake dissolved oxygen levels.
4. If the first on, last off generation practices required by condition F. 1, are not successful in eliminating dissolved oxygen contraventions of water quality standards caused by turbine discharge, the permittee shall submit a feasibility study and plan for physical or mechanical alterations of water release procedures that will eliminate violations of water quality standards for dissolved oxygen caused by turbine discharge from Smith Mountain Lake. The feasibility study will be due by December 31, 2015 unless the operational changes alone are sufficient to eliminate contraventions of the dissolved oxygen standard.

G. Instream Flow Monitoring and Reporting Conditions

1. The permittee shall monitor on a daily basis, adjusted storage levels in the project lakes, inflow to the project, downstream flows between Leesville Dam and Brookneal and releases from the project to the Staunton River.
2. The permittee shall file an annual report with DEQ that tabulates by date, the status of the project in terms of the trigger condition in effect, the adjusted elevation, the mean daily release at Leesville and the target flow required by the

table in condition D.5. The report shall be submitted by January 31st for the previous calendar year.

PART II– GENERAL CONDITIONS

A. Duty to Comply

The permittee shall comply with all conditions of the VWP permit. Nothing in the VWP permit regulations shall be construed to relieve the permittee of the duty to comply with all applicable federal and state statutes, regulations and prohibitions. Any VWP permit violation is a violation of the law, and is grounds for enforcement action, VWP permit termination, revocation, modification, or denial of an application for a VWP permit extension or reissuance.

B. Duty to Cease or Confine Activity

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the activity for which a VWP permit has been granted in order to maintain compliance with the conditions of the VWP permit.

C. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any impacts in violation of the permit which may have a reasonable likelihood of adversely affecting human health or the environment.

D. VWP Permit Action

1. A VWP permit may be modified, revoked and reissued, or terminated as set forth in 9 VAC 25-2 10 et seq.
2. If a permittee files a request for VWP permit modification, revocation, or termination, or files a notification of planned changes, or anticipated noncompliance, the VWP permit terms and conditions shall remain effective until the request is acted upon by the board. This provision shall not be used to extend the expiration date of the effective VWP permit. If the permittee wishes to continue an activity regulated by the VWP permit after the expiration date of the VWP permit, the permittee must apply for and obtain a new VWP permit or comply with the provisions of 9 VAC 25-210-185 (VWP Permit Extension).
3. VWP permits may be modified, revoked and reissued or terminated upon the request of the permittee or other person at the board's discretion, or upon board

initiative to reflect the requirements of any changes in the statutes or regulations, or as a result of VWP permit noncompliance as indicated in the *Duty to Comply* subsection above, or for other reasons listed in 9 VAC 25-210-180 (Rules for Modification, Revocation and Reissuance, and Termination of VWP permits).

E. Inspection and Entry

Upon presentation of credentials, any duly authorized agent of the board may, at reasonable times and under reasonable circumstances:

1. Enter upon any permittee's property, public or private, and have access to, inspect and copy any records that must be kept as part of the VWP permit conditions;
2. Inspect any facilities, operations or practices (including monitoring and control equipment) regulated or required under the VWP permit; and
3. Sample or monitor any substance, parameter or activity for the purpose of ensuring compliance with the conditions of the VWP permit or as otherwise authorized by law.

F. Duty to Provide Information

1. The permittee shall furnish to the board any information which the board may request to determine whether cause exists for modifying, revoking, reissuing or terminating the VWP permit, or to determine compliance with the VWP permit. The permittee shall also furnish to the board, upon request, copies or records required to be kept by the permittee.
2. Plans, specifications, maps, conceptual reports and other relevant information shall be submitted as required by the board prior to commencing construction.

G. Monitoring and Records Requirements

1. Monitoring of parameters, other than pollutants, shall be conducted according to approved analytical methods as specified in the VWP permit. Analysis of pollutants will be conducted according to 40 CFR Part 136 (2000), Guidelines Establishing Text Procedures for the Analysis of Pollutants.
2. Samples and measurements taken for the purpose of monitoring shall be representative of the monitoring activity.
3. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart or electronic

recordings for continuous monitoring instrumentation, copies of all reports required by the VWP permit, and records of all data used to complete the application for the VWP permit, for a period of at least three years from the date of the expiration of a granted VWP permit. This period may be extended by request of the board at any time.

4. Records of monitoring information shall include:

- a. The date, exact place and time of sampling or measurements;
- b. The name of the individuals who performed the sampling or measurements;
- c. The data and time the analyses were performed;
- d. The name of the individuals who performed the analyses;
- e. The analytical techniques or methods supporting the information such as observations, readings, calculations and bench data used;
- f. The results of such analyses; and
- g. Chain of custody documentation.

H. *Transferability*

This VWP permit may be transferred to a new permittee only by modification to reflect the transfer, by revoking and reissuing the permit, or by automatic transfer. Automatic transfer to a new permittee shall occur if:

1. The current permittee notifies the board within 30 days of the proposed transfer of the title to the facility or property;
2. The notice to the board includes a written agreement between the existing and proposed permittee containing a specific date of transfer of VWP permit responsibility, coverage and liability to the new permittee, or that the existing permittee will retain such responsibility, coverage, or liability, including liability for compliance with the requirements of any enforcement activities related to the permitted activity; and
3. The board does not within the 30-day time period notify the existing permittee and the new permittee of its intent to modify or revoke and reissue the VWP permit.

I. Property Rights

The issuance of this permit does not convey and property rights in either real or personal property, or any exclusive privileges, nor does it authorize injury to private property or any invasion of personal rights or any infringement of federal, state or local law or regulation.

J. Reopener

Each VWP permit shall have a condition allowing the reopening of the VWP permit for the purpose of modifying the conditions of the VWP permit to meet new regulatory standards duly adopted by the board. Cause for reopening VWP permits includes, but is not limited to when the circumstances on which the previous VWP permit was based have materially and substantially changed, or special studies conducted by the board or the permittee show material and substantial change, since the time the VWP permit was issued and thereby constitute cause for VWP permit modification or revocation and reissuance.

K. Compliance with State and Federal Law

Compliance with this VWP permit constitutes compliance with the VWP permit requirements of the State Water Control Law. Nothing in this VWP permit shall be construed to preclude the institution of any legal action under or relieve the permittee from any responsibilities, liabilities, and other penalties established pursuant to any other state law or regulation or under the authority preserved by § 510 of the Clean Water Act.

L. Severability

The provisions of this VWP permit are severable.

M. Permit Modification

A VWP permit may be modified, but not revoked and reissued except when the permittee agrees or requests, when any of the following developments occur:

1. When additions or alterations have been made to the affected facility or activity which require the application of VWP permit conditions that differ from those of the existing VWP permit or are absent from it;
2. When new information becomes available about the operation or activity covered by the VWP permit which was not available at VWP permit issuance and would

have justified the application of different VWP permit conditions at the time of VWP permit issuance;

3. When a change is made in the promulgated standards or regulations on which the VWP permit was based;
4. When it becomes necessary to change final dates in schedules due to circumstances over which the permittee has little or no control such as acts of God, materials shortages, etc. However, in no case may a compliance schedule be modified to extend beyond any applicable statutory deadline of the Act;
5. When changes occur which are subject to “reopener clauses” in the VWP permit; or
6. When the board determines that minimum instream flow levels resulting from the permittee’s withdrawal of water are detrimental to the instream beneficial use and the withdrawal of water should be subject to further net limitations or when an area is declared a Surface Water Management Area pursuant to § § 62.1-242 through 62.1-253 of the Code of Virginia, during the term of the VWP permit.

N. *Permit Termination*

After notice and opportunity for a formal hearing pursuant to Procedural Rule No. 1 (9 VAC 25-230-100) a VWP permit can be terminated for cause. Causes for termination are as follows:

1. Noncompliance by the permittee with any condition of the VWP permit;
2. The permittee’s failure in the application or during the VWP permit issuance process to disclose fully all relevant facts or the permittee’s misrepresentation of any relevant facts at any time;
3. The permittee’s violation of a special or judicial order;
4. A determination by the board that the permitted activity endangers human health or the environment and can be regulated to acceptable levels by VWP permit modification or termination;
5. A change in any condition that requires either a temporary or permanent reduction or elimination of any activity controlled by the VWP permit; and
6. A determination that the permitted activity has ceased and that the compensatory mitigation for unavoidable adverse impacts has been successfully completed.

O. Civil and Criminal Liability

Nothing in this VWP permit shall be construed to relieve the permittee from civil and criminal penalties for noncompliance.

P. Oil and Hazardous Substance Liability

Nothing in this VWP permit shall be construed to preclude the institution of legal action or relieve the permittee from any responsibilities, liability, or penalties to which the permittee is or may be subject under § 311 of the Clean Water Act or §§ 62.1-44.34:14 through 62.1-44.34:23 of the State Water Control Law.

Q. Unauthorized Discharge of Pollutants

Except in compliance with the VWP permit, it shall be unlawful for the permittee to:

1. Discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances;
2. Excavate in a wetland;
3. Otherwise alter the physical, chemical, or biological properties of state waters and make them detrimental to the public health, to animal or aquatic life, to the uses of such waters for domestic or industrial consumption, for recreation, or for other uses;
4. On or after October 1, 2001 conduct the following activities in a wetland:
 - a. New activities to cause draining that significantly alters or degrades existing wetland acreage or functions;
 - b. Filling or dumping;
 - c. Permanent flooding or impounding; or
 - d. New activities that cause significant alteration or degradation of existing wetland acreage or functions.

Document Content (s)

P-2210-169Order.DOC 1-82