

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Pat Wood, III, Chairman;
Nora Mead Brownell, Joseph T. Kelliher,
and Suedeen G. Kelly.

Alcoa Power Generating, Inc.

Project No. 2169-020

ORDER APPROVING SETTLEMENT AND ISSUING NEW LICENSE

(Issued January 25, 2005)

1. This order issues, pursuant to sections 15 and 4(e) of the Federal Power Act (FPA),¹ a new license to Alcoa Power Generating Inc. (APGI or licensee) for the 380.1- megawatt (MW) Tapoco Hydroelectric Project. The project is located on the Little Tennessee and Cheoah Rivers in Graham and Swain Counties in North Carolina, and Blount and Monroe Counties in Tennessee. Part of the project occupies federal lands within the Nantahala National Forest which are administered by the U.S. Department of Agriculture's Forest Service (Forest Service).²
2. This order also approves an offer of settlement filed by APGI on behalf of itself and most of the major parties to the relicensing proceeding.³ The new license issued in this order contains conditions incorporating, with certain exceptions discussed herein, the

¹ 16 U.S.C. §§ 808 and 797(e), respectively. The Little Tennessee is a navigable waterway of the United States. 13 F.P.C. 14 (1954).

² Section 4(e) of the FPA, 16 U.S.C. § 797(e), provides that the Commission may issue a license for a project located on a federal reservation (defined at FPA section 3(2), 16 U.S.C. § 794(2)) only after it finds that the license will not interfere or be inconsistent with the purpose for which the reservation was created or acquired. The Tapoco Project occupies 387 acres of land within the Nantahala National Forest. The Forest was established in 1920 pursuant to the Weeks Act, which provided that the purposes of national forests were timber production and the regulation of navigable streams. We find that the license will not interfere or be inconsistent with these purposes.

³ As discussed below, certain groups representing whitewater boating interests did not sign the settlement and oppose it in part.

terms of the settlement agreement, portions of which are attached as appendices to this order. This order is in the public interest because it provides for additional capacity, protects fish and wildlife affected by the project, and enhances recreation.

Background

3. The Tapoco Project was licensed by the Commission in 1955, for a 50-year term expiring February 28, 2005.⁴ As discussed below, APGI generates about 50 percent of the power needed to run Alcoa Inc.'s aluminum smelting and rolling mill (Tennessee Operations), with the balance of the power needs met by purchases from the Tennessee Valley Authority (TVA).

4. The project operates under a 1983 power exchange agreement (the Fontana Agreement) with TVA.⁵ The Fontana Agreement defines the responsibilities of TVA and APGI in managing stream flows in the Little Tennessee River. The agreement also specifies the arrangements whereby power generated by the project is dispatched by TVA. Accordingly, the project is operated as an integral part of the TVA system. TVA schedules the Tapoco power station generators based on its planned schedule for operating the Fontana Dam, with consideration for the Santeetlah Reservoir operating guide curve. TVA forecasts Fontana Dam operations and provides APGI with a flow/generation schedule for the next day at 6:00 pm each day. APGI adheres to the flow and operation schedule provided by TVA.

Project Description

5. The Tapoco Project includes four developments, as described below, all of which are operating as daily peaking facilities.

6. Farthest upstream and located on the Cheoah and Little Tennessee Rivers, the *Santeetlah development* includes: (1) a 1,054-foot-long, 216-foot-high dam on the Cheoah River; (2) two controlled spillway sections, each containing three remotely

⁴ See 14 F.P.C. 610.

⁵ TVA operates two dams, Fontana Dam and Tellico Dam, on the lower Little Tennessee River. Fontana Dam is approximately 7.5 miles upstream of the Cheoah Development. Tellico Dam is located approximately 33 miles downstream of the Chilhowee Development, near the confluence of the Little Tennessee and Tennessee Rivers. The Tellico Dam does not have power generating capability, but instead, serves to divert water through a short canal into Fort Loudoun Reservoir for hydroelectric generation at the Fort Loudoun Dam.

operated 25-foot-wide by 12-foot-high Taintor gates; (3) a 2,881-acre reservoir on the Cheoah River; (4) an intake and trash rack in the dam located between the right wing wall and the right thrust block; (5) six pipelines and five tunnel sections that carry the water about five miles from the intake in the dam to the powerhouse, which is located on the Little Tennessee River and contains two turbine-generator units with a total existing installed capacity of 49.2 MW; and (6) a 161-kV primary transmission line that runs about 750 feet from the powerhouse to a switchyard.

7. Next downstream on the Little Tennessee River is the *Cheoah development*, which includes: (1) a 750-foot-long, 229-foot-high dam; (2) a controlled spillway section containing 19 remotely operated 25-foot-wide by 19-foot-high Taintor gates; (3) a 644-acre reservoir; (4) an intake at the left abutment for four turbine-generator units and an intake at the left end of the spillway for the fifth turbine-generator unit; (5) a 27-foot-diameter tunnel that carries water about 450 feet from the intake to four turbine-generator units; (6) a penstock with a 17-foot-upper diameter and a 16-foot-lower diameter that carries water about 490 feet from the second intake to the fifth turbine-generator unit; and (7) a powerhouse containing five turbine-generator units with a total existing installed capacity of 118 MW.

8. On the Little Tennessee River below the Cheoah development is the *Calderwood development*, which includes: (1) a 916-foot-long, 230-foot-high dam; (2) twenty-four 24-foot-wide by 20-foot-high Stoney gates; (3) a 570-acre reservoir; (4) an intake located on the west bank of the dam adjacent to the right abutment; (5) a 6-foot-wide by 5-foot-high trash gate on the right side of the dam; (6) a 2,050-foot-long tunnel that carries water from the intake to the powerhouse; and (7) a powerhouse containing three turbine-generator units with a total existing installed capacity of 140.4 MW.

9. On the Little Tennessee River immediately below Calderwood is the *Chilhowee development*, which includes: (1) a 1,483-foot-long, 88.5-foot-high dam; (2) a controlled spillway section containing six 35-foot-wide by 38-foot-high Taintor gates; (3) a 1,734-acre reservoir; (4) an intake between the controlled spillway section and left non-overflow section; and (5) a powerhouse integral to the dam located immediately downstream of the intake, containing three turbine-generator units with a total existing installed capacity of 52.2 MW.

Procedural History

10. APGI filed its application for a new license for the Tapoco Project on February 21, 2003. Public notice of the application and the accompanying applicant-prepared environmental assessment was issued, and September 22, 2003, was the deadline to file

comments, protests, and motions to intervene.⁶ Timely motions to intervene were filed by: Forest Service; U. S. Department of the Interior's (Interior) Fish and Wildlife Service (FWS), National Park Service, and Bureau of Indian Affairs; North Carolina Department of Environment and Natural Resources; North Carolina Wildlife Resources Commission (North Carolina Wildlife); Graham County, North Carolina Government; Carolina Canoe Club; American Whitewater Affiliation; Western Carolina Paddlers; World Wildlife Fund; and the Nature Conservancy. The Tennessee Department of Environment and Conservation (Tennessee DEC), Tennessee Wildlife Resources Agency (Tennessee Wildlife), and, jointly, American Rivers and the Tennessee Clean Water Network filed late motions to intervene. These late motions were granted by notice dated March 22, 2004.

11. On March 15, 2004, the Commission issued for comment a draft environmental assessment (EA) that evaluated the potential environmental impacts of continued operation of the Tapoco Project. On April 8, 2004, the 30-day comment deadline was extended by an additional 30 days until May 14, 2004. Comments on the draft EA were filed by Interior; Forest Service; North Carolina Wildlife; Tennessee Wildlife; jointly by American Whitewater Affiliation, Carolina Canoe Club, East Tennessee Whitewater Club, Endless Rivers Adventures, Nantahala Gorge Association, Nantahala Outdoor Center, Outdoor Adventure Rafting, Western Carolina Paddlers, and Wildwater Limited (collectively, Paddlers); Nature Conservancy; World Wildlife Fund (Wildlife Fund); and APGI.

12. On May 7, 2004, APGI amended its relicense application with the filing of an offer of settlement, including an explanatory statement and a comprehensive relicensing settlement agreement, agreed to by APGI and all of the major stakeholders to the relicensing with the exception of the Paddlers. The settlement agreement included proposed license articles which APGI asked the Commission to incorporate in the new license.

13. The Commission issued public notice of the settlement on May 18, 2004. Paddlers filed comments arguing that the settlement did not adequately provide for whitewater recreation, and suggesting related license conditions.

⁶ See notice issued July 24, 2003.

14. On September 10, 2004, the Commission issued a final EA for the project.⁷
15. The Commission has considered all the comments and interventions filed in this proceeding in determining whether, and under what conditions, to issue a new license for the Tapoco Project.

Relicensing Proposal

16. APCI proposes to continue to operate the four developments as daily peaking facilities. It intends to upgrade the turbines and generators at the Santeetlah, Cheoah, and Chilhowee developments. The result of the changes would be to decrease installed capacity at Santeetlah from 49.2 to 47 MW, increase installed capacity at the Cheoah development from 118 to 144.7 MW, and decrease capacity at the Chilhowee development from 52.2 to 48 MW. No upgrades or changes in capacity are proposed at the Calderwood development. Following these modifications, the project's total installed capacity will increase from 359.8 to 380.1 MW.

17. APCI also proposes, pursuant to the settlement, to implement a large number of measures for the protection and enhancement of project area resources. These measures are summarized generally below.

A. Operational Requirements

- maintain and monitor reservoir surface elevations at the Santeetlah development to protect aquatic resources and recreation within the Santeetlah Reservoir;
- release monthly aquatic base flows from the Santeetlah development to protect aquatic resources, including the Appalachian elktoe in the Cheoah River downstream of Santeetlah Dam, and add structures necessary to accommodate these releases;
- provide for high flow events at the Santeetlah development within specified flow ranges to enhance aquatic habitat diversity and provide whitewater boating opportunities in the Cheoah River downstream of the Santeetlah Dam;

⁷ In a letter dated September 15, 1998, during the pre-filing period, TVA requested cooperating agency status for the environmental review of the Tapoco Project. Following the filing of the application and the applicant-prepared EA, staff, in a letter dated December 15, 2003, granted TVA's request. TVA's activity as a cooperating agency was limited to reviewing drafts of the environmental documents with respect to issues touching on that agency's responsibilities.

- establish flow protocol for low-flow periods to protect the resources of Santeetlah Reservoir and the Cheoah River bypassed reach;
- continue maximum drawdown limits for Cheoah, Calderwood, and Chilhowee Reservoirs to maintain operational flexibility and existing power generation; and
- release continuous minimum flows from Calderwood dam to protect aquatic resources in the bypassed reach of the Little Tennessee River, and make modifications necessary to accommodate these releases.

B. Recreation and Land Management

- upgrade existing and construct additional recreational facilities, including campgrounds, boat launches, fishing piers, day-use facilities, and other areas;
- provide funds for recreation facilities on Forest Service lands and for fish stocking in Calderwood Reservoir;
- include within the project boundary five parcels of land owned by the licensee;
- lease lands to the Forest Service for a boat take-out on the Cheoah River and an overflow parking area;
- monitor flow and post on the internet flow information for the Cheoah River; and
- develop a Shoreline Management Plan⁸ and a Historic Properties Management Plan.

C. Fish and Wildlife Mitigation and Enhancement Measures

- provide fish passage for four target species at the Chilhowee Development;
- provide funding for seasonal trapping and relocation of target fish species;
- downstream of Chilhowee Dam, study potamodromous and diadromous fishes and periodically sample benthic macroinvertebrate resources;

⁸ On October 1, 2004, APGI filed a proposed Shoreline Management Plan. This satisfies the requirement in this license that such a plan be filed. Because the plan was submitted after issuance of the final EA, Commission staff will conduct a separate analysis of the plan, and we will then act on it.

- fund natural resource activities, including the monitoring of biotic and abiotic parameters, large woody debris, and vegetation and gravel below Santeetlah Dam; and
- fund threatened and endangered species recovery efforts, ecosystem enhancements and restoration, management and control of exotic species, and environmental outreach and education.

D. Consultation

- meet annually with federal and state resource agencies and the Eastern Band of Cherokee Indians to consider any proposed water reallocation; and
- consult annually with specified entities to consider whether to provide whitewater-boating flows on a trial basis.

Discussion

A. Intervenor Concerns

18. The settlement provides that APGI will: (1) implement high flow releases of 1,000 cfs, 850 cfs, and 300 cfs; (2) install and maintain a staff gage at Joyce Kilmer Bridge on the Cheoah River; (3) continue to fund the existing Bearpen Gap USGS gage (Gage No. 0351706800), located in the Cheoah River bypassed reach; and (4) keep the public informed of the releases by making the flow data from the gages available on the internet. These high flow releases are provided primarily to provide ecological benefits in a 9.1-mile-long bypassed reach of the Cheoah River, but will also provide between 15 and 17 days of boatable flows within the reach, annually, for rafters, canoeists, and paddlers.

19. Paddlers contend that the settlement flows do not adequately provide for river recreation on the Cheoah River downstream of the Santeetlah Dam, especially during the warm weather periods that would make boating opportunities more attractive to commercial rafting customers. They argue for a minimum of 30 scheduled recreational flow releases annually, of between 850 and 1,500 cfs in the Cheoah River.⁹

20. As noted above, the settlement's high flow release schedule was developed primarily to provide ecological benefits in the Cheoah River bypassed reach. To assess ecological benefits, four flows were evaluated: 670 cfs; 950 cfs; 1,010 cfs; and 1,130 cfs. Flow releases of 850 cfs and 1,000 cfs were selected because they fall within the range of those evaluated and provide the ecological benefits for which they were designed,¹⁰ while also providing flow releases within the range that provides a good to excellent boating experience.¹¹

21. While the settlement's high-flow release schedule, which the license adopts, will provide about half as many days of high flows annually as advocated by the Paddlers, most of those scheduled days will be at the preferred higher flow of 1,000 cfs. Between 6 and 9 of the total scheduled days will occur during May through September, about half

⁹ Paddlers suggest that the flow releases be maintained at full flow from 9:00 am to 5:00 pm and reduced by at least 50 percent of full flow overnight. In order to protect the elktoe mussel, they propose that flows below 200 cfs be down ramped at a rate of about 2 inches per hour. Paddlers also request that unscheduled releases be made at more than 850 cfs, targeting 1,000 to 2,000 cfs, whenever possible. In addition, they ask that instream vegetation be removed, and that flow information be made available by e-mail subscription and toll-free telephone as well as at an internet website.

¹⁰ High flow releases tend to increase diversity in the environment and more closely mimic natural conditions if they are released in the spring and late fall when flows would naturally be high.

¹¹ In the final EA, it was determined that flows of 950 and 1,130 cfs provided a good to excellent experience for rafting, canoeing and kayaking. Final EA at 105. Nevertheless, 90 percent of canoeists and kayakers indicated that they would return to paddle the Cheoah River at flows of 950 or 1,010 cfs.

at the preferred 1,000 cfs flows, and half at 850 cfs. This flow schedule provides boating opportunities that will appeal to the widest segment of whitewater boating enthusiasts while protecting the Appalachian elktoe mussel.¹²

22. On the other hand, the number and timing of high flow events requested by Paddlers (30 events, at least half of which would occur during late spring and summer) may disrupt the reproduction and larvae dispersal of the Appalachian elktoe mussel, which occurs during that same period (late spring and summer). Their proposal also could lower the surface elevation of Santeetlah reservoir and thus limit reservoir boating opportunities, especially during the warmer, drier months. Furthermore, while limiting other forms of boating recreation, only the most experienced high flow boaters would be able to make use of flows above 1,000 cfs.¹³

23. Finally, increasing the number of flow releases during the warmer and drier months between May and September, and increasing the flow rate to about 1,500 cfs as advocated by Paddlers would cost an additional \$650,000 in lost generation annually. Under the circumstances discussed above, that additional cost is disproportionate to the benefits of the additional high water flows.¹⁴

¹² Under the license and the settlement agreement, the stakeholder team will be assessing the effects of the adopted high-flow events on these resources. If the adopted high flow releases provide ecological benefits such that it appears the environment can sustain more or greater releases, and if the high flow events are sufficiently used by boaters, the Commission can revisit the high flow event schedule. In any event, numerous other rivers in the region, including the Nantahala, Tuckaseegee, Ocoee, Hiwassee, Big Laurel, Pigeon, Nolichucky, French Broad, Chattooga, and Tellico rivers, provide whitewater boating opportunities, and two (the Chattooga and Tellico) provide an experience comparable to that on the Cheoah River.

¹³ The high flows in our required flow event schedule create International River Difficulty Classification System ratings of Class III and IV. The greater flows requested by Paddlers would create a rating of V and V+.

¹⁴ Paddlers also object to a settlement proposal that a requesting party pay APGI for any additional high flows beyond those in the settlement. This proposal has not been adopted. Should the Commission determine, during the new license term, that more high flow boating days are needed for recreation, APGI will bear the cost.

24. Article 403 requires the licensee to monitor the aquatic resources of the Chilhowee tailwaters in the third and fifteenth year of the license. In addition, Articles 404 (minimum flows and ramping rates), 405 (gravel enhancement), and 406 (endangered species) provide for the monitoring of project effects in the Cheoah River over the term of the license.

25. The Wildlife Fund suggests that, if operations at TVA's Fontana Dam change, the flow regime requirement for Tapoco's Calderwood bypassed reach should be re-evaluated and modified. It also argues that, if water temperatures rise because of any TVA re-operation at Fontana dam, additional studies should be conducted in the river reach immediately below the Tapoco project's Chilhowee development to determine the effects of the change on macroinvertebrate and fish communities. The monitoring requirements of the new license are sufficient. In any event, the new license for the Tapoco project reserves the Commission's authority to address any changed impacts of the Tapoco project.

26. The Wildlife Fund requests the installation of new USGS staff gages and water quality monitoring stations in the bypassed reach of the Little Tennessee River at the Calderwood development, and in the bypassed reach of the Cheoah River at the Santeetlah development, in order to monitor water temperature, dissolved oxygen, pH, or conductivity.¹⁵

27. Neither the requested gages nor additional water quality monitoring will be required. Water quality in these bypassed reaches, and in the Calderwood and the Santeetlah Reservoirs is very good, and the Wildlife Fund provides no information suggesting that the proposed changes to the operation of either development would affect water temperature, dissolved oxygen, pH, and conductivity.

28. Wildlife Fund requests that APGI be required to install and maintain a USGS staff gage to record flows in the bypassed reaches of the Little Tennessee and Cheoah Rivers at the Calderwood and Santeetlah developments, respectively. APGI proposes to modify and automate a Taintor gate at the Santeetlah and Calderwood developments to provide the bypassed reach flows. The discharge rates into each bypassed reach will be determined by gate height opening and reservoir surface elevation which will then be used to calculate the flow rate. This method is one of the more accurate methods for determining flow rate. Therefore, we conclude that the additional gages requested by Wildlife Fund would be redundant and less accurate than the method proposed by APGI.

¹⁵ They request that these gages be installed in each bypassed reach at points as close as possible to the dams.

In addition, APCI will be maintaining the Bearpen Gap USGS gage and a staff gage visible to public on the Cheoah River. The purpose of those gages is to inform the recreating public (primarily boaters) about flows in the Cheoah River.

29. Finally, the Wildlife Fund requests that non-governmental organizations with aquatic resource expertise be included in the development of any drought, vegetation, threatened and endangered species, shoreline, and other plans developed for the project; and, in particular, on teams conducting the benthic macroinvertebrate studies and Appalachian elktoe studies required by the license. The federal and state resource agencies (FWS, Forest Service, Tennessee DEC, Tennessee Wildlife, Park Service, etc.) with whom the license requires consultation on these matters have expertise on aquatic issues, and the study teams will include representatives of these agencies.

B. Approval of Settlement Agreement

30. The Commission strongly favors settlement agreements, which provide the opportunity to eliminate the need for more lengthy proceedings if the parties reach an agreement on the issues that is in the public interest. The Tapoco settlement addresses the signatories' various concerns related to fisheries, water quality, recreation, and land management, while preserving power production at the project. Overall, the terms in the agreement achieve an appropriate balance between continued project generation and the protection, mitigation, and enhancement of environmental resources. Moreover, as discussed below, most of the terms of the agreement are contained in the various mandatory conditions submitted by the agencies and must therefore be included in any license we issue for this project. We find that the agreement is in the public interest and have included in the license conditions to implement the various provisions of the agreement, as clarified below.

31. The settlement agreement provides that APCI fund improvements to specified recreation areas and the construction of new recreation facilities. According to the settlement, APCI commits to funding a portion of these activities, and additional funds will be provided by the Forest Service, North Carolina Wildlife Resources, and Tennessee Wildlife Resources. While it is not unusual for licensees to arrange for other entities to undertake certain required measures, or to share the expense of those measures, we remind APCI that, as our licensee, and thus the only entity of the settling parties subject to our jurisdiction, it bears the ultimate responsibility for the performance of all license requirements. In Article 408, we are requiring APCI to file for Commission approval, a final recreation plan, providing specifics with respect to the proposed recreation enhancements for which APCI will be responsible.

32. The settlement agreement provides for APCI to establish two environmental funds, the North Carolina Fund and the Tallassee Fund, to be used by resource agencies and other entities to pay for various environmental activities. The funds are required, respectively, by the Forest Service's 4(e) conditions and by the Tennessee water quality certification. Thus, we must include them in the license. We note, however, that we generally do not favor such funds, preferring to require licensees to undertake specific measures to resolve specific project impacts. This is particularly true where, as with the funds at issue here, it is not clear to what extent the funds will be used for activities that are related to the project.

C. The Land Exchange

33. During the course of the relicensing proceeding, it was determined that the Tapoco Project occupied approximately 100 acres of lands within the Great Smoky Mountains National Park.¹⁶ While section 4(e) of the FPA authorizes the Commission to issue licenses within reservations of the United States, the FPA defines "reservations" as excluding national parks.¹⁷

34. In order to allow the project to be relicensed without the need to address the issue of a portion of it being located within a national park, APCI and the National Park Service negotiated the terms of a land exchange, whereby the land at issue could be removed from the national park, in exchange for other lands. In 2004, Congress enacted legislation authorizing the exchange.¹⁸

35. On January 14, 2005, APCI and the National Park Service signed documents completing the land exchange. As a consequence, the project's former location on national park land is no longer an issue.

¹⁶ It is not clear how this occurred. The 1955 license order did not state that the project would occupy national park land, and nothing in the record indicates that the Commission was aware of this issue. Indeed, the October 25, 1954, license application stated that "[n]o lands or reservations of the United States will be affected by the . . . [p]roject."

¹⁷ See FPA section 3(2), 16 U.S.C. § 796(2).

¹⁸ See Pub. L. 108-343, 118 Stat. 1372.

Threatened and Endangered Species

36. Section 7(a) of the Endangered Species Act of 1973 (ESA)¹⁹ 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.

37. Two federally-listed species (Appalachian elktoe mussel and Virginia spiraea plant) are known to occur within the project. Two other listed species, the bald eagle and the red-cockaded woodpecker, historically have been found in the project area. Another federally-listed species, the Indiana bat, has been found in areas adjacent to the project and may occur within the project boundary. Four federally-listed fish species, the spotfin chub, yellowfin madtom, smoky madtom, and duskytail darter have been reintroduced into Abrams Creek, and therefore may occur within the project boundary.

38. By letter issued September 10, 2004, Commission staff requested FWS to concur with staff's finding that the proposed project would not be likely to adversely affect the Appalachian elktoe, Virginia spiraea, Indiana bat, spotfin chub, yellowfin madtom, smoky madtom, duskytail darter, and would have no effect on the red-cockaded woodpecker and bald eagle. In a letter filed on October 18, 2004, FWS concurred with staff's conclusions.²⁰

Section 18 Fishway Prescription

39. Section 18 of the FPA²¹ provides that the Commission shall require the construction, operation, and maintenance by a licensee of such fishways as the Secretaries of Commerce or the Interior may prescribe.

40. Interior timely submitted a fishway prescription for the Tapoco Project. The prescription consists of reservations of authority to prescribe fishways at all four project developments, as well as specific measures with respect to passage at the Chilhowee Development of the four federally-listed fish species discussed above. These measures are consistent with the terms of the settlement agreement. Article 402 of the license reserves Interior's authority to prescribe fishways, and the prescription itself is attached to this order as Appendix D.

¹⁹ 16 U.S.C. § 1536(a).

²⁰ See letter to Magalie R. Salas from Brian P. Cole.

²¹ 16 U.S.C. § 810.

Section 4(e) Conditions

41. FPA section 4(e) provides that licenses issued on any reservation of the United States shall include such conditions as the Secretary of the department under whose supervision the reservation falls deems necessary for the adequate protection and utilization of the reservation. As noted above, a portion of the Tapoco Project occupies lands within the Nantahala National Forest. In consequence, the Secretary of Agriculture is authorized to provide conditions pursuant to section 4(e) applicable to those lands.

42. In September 2003, the Forest Service timely filed nine 4(e) conditions. The first condition states that the following conditions are based on agreements in principle among the parties to the relicensing, and that the Forest Service reserves the right to alter the conditions to be consistent with the final settlement agreement.²² The remaining conditions require APGI to obtain Forest Service approval of changes to the project and to consult annually with the Forest Service; release specified minimum flows below the Santeetlah Dam; establish a schedule of high-flow events; create a process for water reallocation; establish a low flow protocol and a Cheoah River flow regime; and establish a mitigation trust fund. Inasmuch as the Santeetlah Dam is not on Forest Service lands, the Forest Service may not impose section 4(e) conditions that relate to the dam's operation. We therefore do not include under section 4(e) conditions 4 through 8. We note however that these conditions are nevertheless included in the license through the North Carolina water quality certification and as a condition of the settlement adopted pursuant to FPA section 10(a)(1).

43. The section 4(e) conditions are attached to this order as Appendix G and made a part of the license. To the extent, if any, that the specifics of the conditions are not consistent with the provisions of the settlement and license articles incorporating them, we presume that it is the Forest Service's intent that the settlement provisions govern.

Water Quality Certification

44. Under section 401(a)(1) of the Clean Water Act (CWA),²³ the Commission may not issue a license for a hydroelectric project unless the state water quality certifying agency has issued water quality certification for the project or has waived certification by failing to act within a reasonable period of time, not to exceed one year. Section 401(d)

²² On January 11, 2005, the Forest Service filed a letter stating that its section 4(e) conditions may no longer be necessary, but it did not expressly withdraw them.

²³ 33 U.S.C. § 1341(a)(1).

of the CWA provides that state certification shall become a condition of any federal license or permit that is issued.²⁴ Only a reviewing court can revise or delete these conditions.²⁵

45. On February 19, 2003, APGI filed requests for water quality certifications from the states of North Carolina and Tennessee. On December 17, 2003, and on February 11, 2004, respectively, the North Carolina State Division of Water (NC Division of Water) and the Tennessee DEC issued timely water quality certifications for the Tapoco Project. On November 8, 2004, NC Division of Water issued a consent decree which amended its certification to contain the same terms and conditions as outlined in the settlement agreement.²⁶

46. The North Carolina certification includes 14 conditions, 11 of which mirror the settlement agreement. Conditions 12, 13, and 14 are provisions which are in addition to, although not inconsistent with, the settlement agreement. These conditions require APGI to report consumptive withdrawal of water from Santeetlah Reservoir and conduct all activities in a manner consistent with state water quality standards and any other state and federal law, and provide that the certification does not grant or affirm any property rights, license, or privilege in any water or any right of use in any water.

47. The Tennessee certification contains 21 conditions, 16 of which mirror the settlement agreement. The remaining five conditions are in addition to, but are not inconsistent with, the agreement. They (1) require the conformance of approved plans, specifications, agreements, data and other information submitted in support of APGI's application; (2) prohibit the release of pollutants in flowing water from construction or maintenance activities associated with the project; (3) require that project-related work be carried out in such a manner as will prevent violations of water quality criteria rules; (4) bar any petroleum products or other chemical pollutants from entering state waters; and (5) make the terms and conditions of the certification applicable to any contractors.

²⁴ 33 U.S.C. § 1341(d).

²⁵ See *American Rivers v. FERC*, 129 F.3d 99 (D.C. Cir. 1997).

²⁶ The settlement agreement was developed after issuance of the North Carolina certification. The NC Division of Water amended condition 2 of its certification to allow APGI to provide additional days of high flow events for recreational boating over the minimum required by the settlement agreement.

48. The water quality certifications, including the consent decree, are attached as Appendices E and F to this order. Ordering paragraph (D) incorporates the certifications' conditions as conditions of the license.

Recommendations Pursuant to Section 10(j) of the FPA

49. Section 10(j)(1) of the FPA, 16 U.S.C. § 803(j)(1), requires the Commission, when issuing a license, to include conditions based on recommendations of federal and state fish and wildlife agencies submitted pursuant to the Fish and Wildlife Coordination Act²⁷ to "adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat) affected by" a project.

50. For the Tapoco Project, FWS and North Carolina Wildlife submitted recommendations that fall within the scope of section 10(j).

51. The aforementioned agencies, which have the authority to recommend terms and conditions under section 10(j), are signatories to the agreement. Although these agencies did not file modified section 10(j) recommendations subsequent to signing the agreement, we assume the terms of the agreement supersede their earlier section 10(j) recommendations.

Historic Properties

52. On August 25, 2004, the North Carolina and Tennessee State Historic Preservation Officers and the Commission's Office of Energy Projects executed a Programmatic Agreement for managing historic properties that may be affected by the relicensing and continued operation of the Tapoco Project. Article 409 requires APGI to implement the PA. The agreement serves to satisfy the Commission's responsibilities under section 106 of the National Historic Preservation Act. By executing the PA and incorporating it by reference herein, the Commission has evidenced its compliance with section 106 of the National Historic Preservation Act.²⁸

²⁷ 16 U.S.C. § 661, *et seq.*

²⁸ 16 U.S.C. § 470s. The Advisory Council on Historic Preservation declined to participate in the execution of the PA and thereby, in accordance with 36 C.F.R. Part 800, the PA was executed without its participation.

State and Federal Comprehensive Plans

53. Section 10(a)(2)(A) of the FPA requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project. Staff identified nine comprehensive plans²⁹ applicable to the Tapoco Project and found no conflicts.

Applicant's Plans and Capabilities

54. In accordance with sections 10(a)(2)(C) and 15(a) of the FPA,³⁰ we have evaluated APGI's record as a licensee with respect to the following: (A) conservation efforts; (B) compliance history and ability to comply with the new license; (C) safe management, operation, and maintenance of the project; (D) ability to provide efficient and reliable electric service; (E) need for power; (F) transmission services; (G) cost effectiveness of plans; and (H) actions affecting the public.

²⁹ (1) North Carolina Department of Environment and Natural Resources. 2000. Basinwide assessment report: Little Tennessee River. Raleigh, North Carolina. April 2000; (2) North Carolina Department of Environment and Natural Resources. 2002. Little Tennessee River Basinwide water quality management plan. Raleigh, North Carolina. April 2002; (3) North Carolina Department of Environment and Natural Resources. 2004. Little Tennessee River Basin & Savannah River Drainage Area (Classifications and Water Quality Standards). Raleigh, North Carolina. August 1, 2004; (4) North Carolina Department of Environment and Natural Resources. 2000. Water Quality Progress in North Carolina 1998-1999 305(b) Report. Raleigh, North Carolina. April 2000; (5) North Carolina Department of Environment and Natural Resources. 1995. North Carolina Outdoor Recreation Plan, 1995—2000. Raleigh, North Carolina. September 1995; (6) Forest Service. 1994. Nantahala and Pisgah National Forests land and resource management plan - Amendment 5. Department of Agriculture, Asheville, North Carolina. March 1994; (7) Forest Service. September 2002. Cherokee National Forest land and resource management plan. Department of Agriculture, Cleveland, Tennessee; (8) Tennessee Department of Conservation. 1984. Tennessee State Outdoor Recreation Planning Report. Nashville, Tennessee. December 1984; (9) Tennessee Valley Authority. 1965. Development of the water resources of the Bear Creek watershed. Planning Report No. 59-100-1. Knoxville, Tennessee.

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

A. Conservation Efforts, Section 10(a)(2)(C)

55. Section 10(a)(2)(C) of the FPA requires the Commission to consider the extent of electric consumption efficiency programs in the case of license applicants primarily engaged in the generation or sale of electric power. APGI is engaged in the generation of electric power for its own industrial purposes and has no regular external customers. Since all of the project's power is used at Alcoa's Tennessee Operations plant and because of the energy intensive nature of the aluminum smelting process, Alcoa makes energy conservation and efficiency practices a high priority in its production processes. Therefore, we find that APGI adequately considers electric consumption efficiency in its use of the project power.

B. Compliance History and Ability to Comply with the New License, Section 15(a)(2)(A)

56. Based on a review of APGI's compliance with the terms and conditions of the existing license, we find that APGI's overall record of making timely filings and of compliance with its license is satisfactory. We conclude that APGI has or can acquire the resources and expertise necessary to carry out its plans and comply with all articles and terms and conditions of a new license.

C. Safe Management, Operation, and Maintenance of the Project, Section 15(a)(2)(B)

57. We reviewed APGI's management, operation, and maintenance of the Tapoco Project pursuant to the requirements of 18 C.F.R. Part 12 and the Commission's Engineering Guidelines and periodic Independent Consultant's Safety Inspection Reports. We conclude that the dams and other project works are safe, and that there is no reason to believe that APGI cannot continue to safely manage, operate, and maintain these facilities under a new license.

D. Ability to Provide Efficient and Reliable Electric Service, Section 15(a)(2)(C)

58. We reviewed APGI's plans and its ability to operate and maintain the project in a manner most likely to provide efficient and reliable electric service. We find that APGI has been operating the project in an efficient manner within the constraints of the existing license and is likely to continue to do so under a new license.

E. Need for Power, Section 15(a)(2)(D)

59. The Tapoco Project, with a rated capacity of 359.8 MW, historically has generated about 1,445,582 megawatt-hours (MWh) of electricity annually. The generating capacity of the Tapoco Project is insufficient to meet the energy requirements of Alcoa's Tennessee operations alone. As a result, power is purchased from TVA to supplement this need. If a new license for APGI is denied, the amount of power needed to be purchased would more than double. Without the Tapoco Project, Alcoa would have to either: (1) purchase power; (2) install additional fossil-fuel generators; or (3) purchase other hydroelectric facilities.

60. In addition to APGI's need for power, we looked at the regional need for power. The Tapoco Project is located within the Southeastern Electric Reliability Council (SERC) region of the North American Electric Reliability Council (NERC). NERC annually provides public information relative to projected increases in energy demand as well as capacity demand and peak capacity demand. NERC's most recent reliability report (December 2003) indicates that during summer, which is the most critical electric generation season for SERC region, demand for electric capacity will increase by 20.3 percent between 2003 and 2012 with an average annual increase in demand of 2.3 percent. The growth rate for the last ten years averaged 2.9 percent.

61. We conclude that the region has a need for power over the near term and that the Tapoco Project would help meet a part of the current regional electricity demand by supplying Alcoa with power for the Tennessee Operations so Alcoa would not have to purchase it elsewhere. We conclude further that present and future use of the project's power, its low cost, its displacement of nonrenewable fossil fired generation, and its contribution to a diversified generation mix support a finding that the power from the Tapoco Project will help meet a need for power in the southeast and throughout the entire SERC region in both the short and long term.

F. Transmission Services, Section 15(a)(2)(E)

62. The project's transmission facilities that are required to be licensed include a 161-kV primary transmission line which runs about 750 feet from the Santeetlah powerhouse to a nearby switchyard. APGI proposes no changes that would affect transmission facilities.

G. Cost Effectiveness of Plans, Section 15(a)(2)(F)

63. APGI's proposed action consists of an increase of installed capacity from 359.8 MW to 380.1 MW resulting in an increase in generation, once system upgrades are completed, from 1,445,582 MWh to 1,513,714 MWh. Based on the available flow, we would not expect additional capacity to be cost effective at this site. We conclude that the project, as presently configured and as operated according to this order, is consistent with environmental considerations, and fully develops and uses the economical hydropower potential of the site in a cost-effective manner.

H. Actions Affecting the Public, Section 15(a)(3)(A) and (B)

64. The Tapoco Project generates electricity that is used by Alcoa's Tennessee Operation. APGI pays taxes annually to local and state governments, and the project provides employment opportunities. There is no reason to doubt that APGI will implement the various environmental enhancement measures approved in the license. These measures, discussed in the order and in the final EA, as well as the power to be generated by the project, will benefit the public.

Economic Benefits of Project Power

65. In determining whether a proposed project will be best adapted to a comprehensive plan for developing a waterway for beneficial public purposes, the Commission considers a number of public interest factors, including the economic benefit of the project power. As was articulated in *Mead Corp.*,³¹ we employ an analysis that 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 analysis is to provide general estimates of the potential power benefits and costs of a project, and reasonable alternatives to project power.

66. Under the no-action alternative, the Tapoco Project would continue to operate under the current mode of operation, no new environmental measures would be implemented, and no project upgrades would take place. The project would continue to generate an annual average of 1,445,582 MWh at an average cost of \$19,555,541 (about 12.9 mills/kWh). The average annual power value would be \$50,860,787 (about 33.6 mills/kWh), producing a positive net annual benefit of \$31,305,246 (about 20.7 mills/kWh).

³¹ 72 FERC ¶ 61,027 (1995).

67. Based on current economic conditions and the costs for the enhancement included in this license, APCI's proposed alternative would generate an average of 1,513,714 MWh at a total annual average cost of \$25,928,602 (about 17.1 mills/kWh). The average annual value of power for the proposed alternative would be \$50,898,158 (about 33.5 mills/kWh). By subtracting the average annual cost from the average annual power value, we find that the proposed alternative would have positive average annual net benefits over the new license term of \$24,969,556 (about 16.4 mills/kWh).

License Term

68. Pursuant to section 15(e) of the FPA,³² relicensing terms shall not be less than 30 years nor more than 50 years from the date on which the license is issued. Our general policy is to establish 30, 40, and 50 year terms for projects with, respectively, little, moderate, or extensive redevelopment, new construction, new capacity, or additional environmental measures.³³

69. APCI has proposed, and we are requiring a moderate level of new construction and new environmental measures, as detailed above. The settlement calls for a 40-year term. Accordingly, we issue this new license for a 40-year term. Because the current license expires on February 28, 2005, the effective date of this license is March 1, 2005.

Conclusion

70. Based on our independent review of the record in this proceeding, and for the reasons discussed in the EA and this order, we conclude that the Tapoco Project, as proposed by APCI in the settlement agreement, and with the additional measures we are requiring, will be best adapted to the comprehensive development of the Cheoah and Little Tennessee Rivers for beneficial public uses. The project will provide 380.1 MW of electric energy generated from a renewable resource that continues to offset fossil-fueled, steam-electric generating plants, thereby conserving non-renewable resources, and protecting and enhancing fish, wildlife, recreation, and aquatic resources in the Project vicinity.

³² 16 U.S.C. § 808(e).

³³ See *Consumers Power Company*, 68 FERC ¶ 61,077, at 61,383-84 (1994).

The Commission orders:

(A) This license is issued to APCI (licensee) to operate and maintain the Tapoco Hydroelectric Project, for a period of 40 years, effective March 1, 2005. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, enclosed by the project boundary shown by Exhibit G;

<u>Exhibit G Drawings</u>	<u>FERC No. 2169</u>	<u>Showing</u>
Sheet 1 of 24	1025	Blount County, TN- Map of Project Area
Sheet 2 of 24	1026	Blount & Monroe Counties, TN- Map of Project Area
Sheet 3 of 24	1027	Blount & Monroe Counties, TN- Map of Project Area
Sheet 4 of 24	1028	Blount & Monroe Counties, TN- Map of Project Area
Sheet 5 of 24	1029	Blount & Monroe Counties, TN- Map of Project Area
Sheet 6 of 24	1030	Blount & Monroe Counties, TN- Map of Project Area
Sheet 7 of 24	1031	Omitted – No project lands
Sheet 8 of 24	1032	Blount & Monroe Counties, TN, Swain & Graham Counties, NC- Map of Project Area

<u>Exhibit G Drawings</u>	<u>FERC No. 2169</u>	<u>Showing</u>
Sheet 9 of 24	1033	Swain & Graham Counties, NC - Map of Project Area
Sheet 10 of 24	1034	Swain & Graham Counties, NC - Map of Project Area
Sheet 11 of 24	1035	Swain & Graham Counties, NC - Map of Project Area
Sheet 12 of 24	1036	Graham County, NC - Map of Project Area
Sheet 13 of 24	1037	Swain & Graham Counties, NC - Map of Project Area
Sheet 14 of 24	1038	Graham County, NC - Map of Project Area
Sheet 15 of 24	1039	Graham County, NC - Map of Project Area
Sheet 16 of 24	1040	Graham County, NC - Map of Project Area
Sheet 17 of 24	1041	Graham County, NC - Map of Project Area
Sheet 18 of 24	1042	Graham County, NC - Map of Project Area
Sheet 19 of 24	1043	Graham County, NC - Map of Project Area
Sheet 20 of 24	1044	Graham County, NC - Map of Project Area
Sheet 21 of 24	1045	Graham County, NC - Map of Project Area

<u>Exhibit G Drawings</u>	<u>FERC No. 2169</u>	<u>Showing</u>
Sheet 22 of 24	1046	Graham County, NC - Map of Project Area
Sheet 23 of 24	1047	Graham County, NC - Map of Project Area
Sheet 24 of 24	1048	Graham County, NC - Map of Project Area

(2) Project works consisting of the following four developments:

The Santeetlah development consisting of: (1) a 1,054-foot-long, 216-foot-high concrete arch dam; (2) two controlled spillway sections, each containing three remotely operated 25-foot-wide by 12-foot-high Taintor gates; (3) a 2,881 acre reservoir located in the Cheoah River upstream from the dam; (4) an intake and trash rack in the dam located between the right wing wall and the right thrust block; (5) six pipelines and five tunnel sections with an 11-foot diameter that conduct water a distance of about 5 miles from the intake in the dam to the powerhouse; (6) a brick masonry and steel powerhouse containing two turbine-generator units with a total existing installed capacity of 49.2 MW; and (7) a 161- kV primary transmission line that runs about 750 feet from the powerhouse to a switchyard.

The Cheoah development consisting of: (1) a 750-foot-long, 229-foot-high concrete gravity dam; (2) a controlled spillway section containing 19 remotely operated 25-foot-wide by 19-foot-high Taintor gates; (3) a 644-acre reservoir located on the Little Tennessee River upstream from the dam; (4) an intake at the left abutment for four turbine-generator units and an intake at the left end of the spillway for the fifth turbine-generator unit; (5) a 27-foot-diameter concrete-lined tunnel that conducts water a distance of about 450 feet from the intake to four turbine-generator units; (6) a concrete and steel penstock with a 17-foot-upper diameter and a 16-foot-lower diameter that conducts water a distance of about 490 feet from the second intake to the fifth turbine-generator unit; and (7) a reinforced concrete powerhouse containing five turbine-generator units with a total existing installed capacity of 140.4 MW.

The Calderwood development consisting of: (1) a 916-foot-long, 230-foot-high concrete arch dam; (2) twenty-four 24-foot-wide by 20-foot-high Stoney gates; (3) a 570 -acre reservoir located on the Little Tennessee River upstream from the dam; (4) an intake located on the west bank of the dam adjacent to the right abutment; (5) a 6-foot-wide by 5-foot-high trash gate on the right side of the dam; (6) a 2,050-foot-long tunnel

conducting water from the intake to the powerhouse; (7) a brick masonry and steel powerhouse containing three turbine-generator units with a total existing installed capacity of 140.4 MW.³⁴

The Chilhowee development consisting of: (1) a 1,483-foot-long, 88.5-foot-high concrete gravity dam; (2) a controlled spillway section containing six 35-foot-wide by 38-foot-high Taintor gates; (3) a 1,734-acre reservoir located on the Little Tennessee River upstream from the dam; (4) an intake between the controlled spillway section and left non-overflow section; (5) a powerhouse integral to the dam located immediately downstream of the intake, containing three turbine-generator units with a total existing installed capacity of 52.2 MW.

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

Exhibit A: Pages A-1 through A-28 filed on February 21, 2003.

Exhibit F: The following sections of Exhibit F filed on February 21, 2003:

<u>Exhibit F Drawings</u>	<u>FERC No. 2169</u>	<u>Showing</u>
Sheet 1 of 24	1001	Santeetlah General Layout
Sheet 2 of 24	1002	Santeetlah Plan and Elevation of Dam
Sheet 3 of 24	1003	Santeetlah Cross-Sections of Dam
Sheet 4 of 24	1004	Santeetlah Plan and Profile of Tunnel and Pipeline (1 of 2)

³⁴ The licensee is currently refurbishing the three generating units at the Calderwood development through upgrade of the runners and rewinding of the generators. Refurbishment of Unit 3 was completed in 2002, which is reflected in the given existing installed capacity value of 140.4 MW. Units 1 and 2 are scheduled to be upgraded in 2004 and 2005. The work was authorized by FERC in an October 2003 license amendment.

<u>Exhibit F Drawings</u>	<u>FERC No. 2169</u>	<u>Showing</u>
Sheet 5 of 24	1005	Santeetlah Plan and Profile of Tunnel and Pipeline (2 of 2)
Sheet 6 of 24	1006	Santeetlah Plan of Powerhouse
Sheet 7 of 24	1007	Santeetlah Cross-Section of Powerhouse
Sheet 8 of 24	1008	Santeetlah Longitudinal Section of Powerhouse
Sheet 9 of 24	1009	Cheoah General Layout
Sheet 10 of 24	1010	Cheoah Plan and Elevation of Dam
Sheet 11 of 24	1011	Cheoah Powerhouse Plan and Longitudinal Section
Sheet 12 of 24	1012	Cheoah Cross-Section of Powerhouse
Sheet 13 of 24	1013	Calderwood General Layout
Sheet 14 of 24	1014	Calderwood Plan of Dam
Sheet 15 of 24	1015	Calderwood Main Tunnel Plan and Profile
Sheet 16 of 24	1016	Calderwood Powerhouse Floor Plan
Sheet 17 of 24	1017	Calderwood Cross-Section of Powerhouse
Sheet 18 of 24	1018	Calderwood Longitudinal Section of Powerhouse
Sheet 19 of 24	1019	Chilhowee General Plan
Sheet 20 of 24	1020	Chilhowee Dam Sections (1 of 2)

<u>Exhibit F Drawings</u>	<u>FERC No. 2169</u>	<u>Showing</u>
Sheet 21 of 24	1021	Chilhowee Dam Sections (2 of 2)
Sheet 22 of 24	1022	Chilhowee Downstream Elevation
Sheet 23 of 24	1023	Chilhowee Cross-Section of Powerhouse
Sheet 24 of 24	1024	Chilhowee Plan of Powerhouse

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

(C) The Exhibits A, F, and G as designated in Ordering Paragraph (B) above, are approved and made part of this license.

(D) The following plans are approved and made a part of this license:

- (1) Appendix A - Santeetlah Reservoir Operating Plan, article OR-1 and OR-2 of the settlement agreement, as modified;
- (2) Appendix B – Cheoah, Calderwood, and Chilhowee Reservoir Operating Plan, articles OR-3, OR-4, OR-5, and OR-6 of the settlement agreement, as modified;
- (3) Appendix C – Maintenance and Emergency Protocol Plan, article OR-7 of the settlement agreement, as modified;

(E) This license is subject to the U.S. Department of the Interior's fishway prescription filed pursuant to section 18 of the Federal Power Act as set forth in Appendix D of this order.

(F) This license is subject to the conditions of the water quality certifications, submitted by the Tennessee Department of Environment and Conservation and the North Carolina Division of Water under section 401 of the Clean Water Act, as those conditions are set forth in Appendices E and F to this order.

(G) The license is subject to the U.S. Forest Service's conditions filed pursuant to section 4(e) of the Federal Power Act as set forth in Appendix G of this order.

(H) This license is subject to the articles set forth in Form L-5 (October 1975), entitled "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters and Lands of the United States," and the following additional articles:

Article 201. Administrative Annual Charges. The licensee shall pay the United States the following annual charges, effective March 1, 2005, for the purposes of:

- (1) Reimbursing the United States for the costs of administering Part I of the Federal Power Act, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time. The authorized installed capacity for that purpose is 359,800 kilowatts. This annual charge shall be effective as of March 1, 2005, until such time as subsection (2) becomes effective.
- (2) Reimbursing the United States for the costs of administering Part I of the Federal Power Act, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time. The authorized proposed additional capacity is 380,100 kilowatts. This annual charge shall be effective as of the date of commencement of construction of the new capacity.
- (3) Recompensing the United States for use, occupancy and enjoyment of 387 acres of its lands other than for transmission line right-of-way.

Article 202. Amortization Reserves. Pursuant to Section 10(d) of the Federal Power Act, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. The licensee shall set aside in a project amortization reserve account at the end of each fiscal year one half of the project surplus earnings, if any, in excess of the specified rate of return per annum on the net investment. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year, the license 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 203. 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 204. Exhibit Drawings. Within 60 days of the effective date of this license, the licensee shall file the revised exhibit drawings in aperture card and electronic file formats. The exhibit drawing shall reflect the 100 acres of land transferred to the licensee from the Park Service along the North side of the Chilhowee Reservoir, and the five parcels of land proposed by the licensee and approved by this order to be added to the project boundary

- a) Four sets of the approved exhibit drawings shall be reproduced on silver or gelatin 35mm microfilm. All microfilm shall be mounted on type D (3-1/4" X 7-3/8") aperture cards. Prior to microfilming, the FERC Drawing Number (*e.g.*, P-2169-1001 through P-2169-1010) 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 (*e.g.*, 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. The remaining set of aperture cards and a copy of Form FERC-587 shall be filed with the Bureau of Land Management office at the following address:

State Director – Eastern States
Bureau of Land Management
7450 Boston Boulevard
Springfield, Virginia 22153-3121
ATTN: FERC Withdrawal Recordation

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. The drawings must be 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 [*e.g.*, P-2169-1001, G-1, Project Boundary, 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, arranged in a triangular format. The latitude and longitude coordinates, or state plane coordinates, of each reference point must be shown and identified on the drawing.

c) The licensee shall file three separate sets of the project boundary data in a geo-referenced vector electronic file format (such as ArcView shape files, GeoMedia files, MapInfo files, or any similar format) with the Secretary of the Commission, ATTN: OEP/DHAC. The file name shall include: FERC Project Number, data description, date of this license, and file extension [*e.g.*, P-2169, boundary vector data, MM-DD-YYYY.SHP]. The geo-referenced 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. A single electronic boundary data file is preferred and must contain all reference points shown on the individual project boundary drawings. The latitude and longitude coordinates, or state plane coordinates of each reference point must be shown. The data must include a separate text file describing the 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 [*e.g.*, P-2169, boundary metadata, MM-DD-YYYY.TXT].

Article 301. Quality Control and Inspection Program. At least 60 days before starting construction on the minimum flow gates (“piggy-back gates”) for the Santeetlah development and gate modifications at the Calderwood development, the licensee shall submit one copy to the Division of Dam Safety and Inspections, Atlanta Regional Engineer, and two copies to the Commission (one of these shall be a courtesy copy to the Director, Division of Dam Safety and Inspections), of the Quality Control and Inspection Program (QCIP) for the Commission's review and approval. The QCIP shall include a sediment and erosion control plan.

Article 302. Final contract plans and specifications. At least 60 days before starting construction on the minimum flow gates (“piggy-back gates”) for the Santeetlah development and gate modifications at the Calderwood development, the licensee shall submit one copy to the Division of Dam Safety and Inspections - Atlanta Regional Engineer and two copies to the Commission (one of these shall be a courtesy copy to the Director, Division of Dam Safety and Inspections), of final contract plans and specifications along with an accompanying supporting design report. The Commission may require changes to the plans and specifications to assure the work is completed in a safe and environmentally sound manner. If the licensee plans substantial changes to the location, size, type, or purpose of project features, the plans and specifications must be accompanied by revised Exhibit F and G drawings, as necessary. Construction may not commence until authorized by the Regional Engineer.

Article 303. Reservoir Drawdown Evaluation Report. Within 60 days of the date of this license, the licensee shall submit one copy to the Division of Dam Safety and Inspections - Atlanta Regional Engineer and two copies to the Commission (one of these shall be a courtesy copy to the Director, Division of Dam Safety and Inspections), of a report describing the effects of limiting reservoir drawdowns on local flooding and spillway adequacy of the Santeetlah Dam.

The report shall include a flood routing study that evaluates the ability of the developments to safely pass flows up to the Inflow Design Flood and a comparison of the frequency that the non-overflow structures would be overtopped under the historical and limited drawdowns. The report shall assess if there would be an increased likelihood of low-lying structures located upstream and downstream of the reservoir being flooded under the new operating scenario. If necessary, the report shall include a plan and schedule for performing any remedial measures necessary to ensure the continued safe operation of the developments during high flows.

The licensee shall not implement the revised reservoir operation plan for the Santeetlah development until the Division of Dam Safety and Inspections' Atlanta Regional Engineer determines that these altered project operations have no adverse impact on dam safety and issues a letter indicating such.

Article 401.

Requirement to File Plans for Commission Approval and Requirement to Consult

Appendix D requires the licensee to prepare a plan in accordance with the U.S. Department of the Interior's prescription of fishways under section 18 of the Federal Power Act. The plan shall also be submitted to the Commission for approval and shall include an implementation schedule. This plan is listed below.

Fishway Prescription	Plan	Due Date
Part I.	Fish Passage Translocation Plan	Within six months of the effective date of the license

The licensee shall prepare the plan after consultation with the U.S. Fish and Wildlife Service. The licensee shall include with the plan, documentation of its consultation, copies of comments and recommendations made in connection with the plan, and a description of how the plan 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 submitted. Upon Commission approval, the plan becomes a requirement of the license, and the licensee shall implement the plan, including any changes required by the Commission.

Article 402. *Reservation of Authority to Prescribe Fishways.* Authority is reserved by 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 under section 18 of the Federal Power Act for the Tapoco Project.

Article 403. *Chilhowee Development Tailwater Fish Monitoring.* Within six months of the effective date of the license, the licensee shall file for Commission approval, a tailwater fish monitoring plan for the Chilhowee Development that describes the methods to be used to determine the presence and status of lake sturgeon, black buffalo, smallmouth buffalo, river redhorse, sauger, and American eels in the upper end of the Tellico Reservoir in the vicinity of the Chilhowee Development dam tailrace. The plan shall be developed in consultation with the U.S. Fish and Wildlife Service (FWS), U.S. Forest Service (Forest Service), Tennessee Department of Environment and Conservation (Tennessee DEC), Tennessee Wildlife Resources Agency (Tennessee Wildlife), and the National Park Service (NPS).

The plan shall include, at a minimum:

- (1) a timetable that facilitates tailrace monitoring commencing within five years from the effective date of the license and thereafter in year 10 and 20 of the license;
- (2) a design that targets detection of the seasonal aggregations of potomadromous and diadromous fishes and includes a combination of sampling techniques, including electrofishing and net gear sampling;
- (3) reporting monitoring results to the FWS, Forest Service, Tennessee DEC, Tennessee Wildlife, NPS, and the Commission within six months of completing each monitoring effort; and
- (4) a schedule for implementing the fish monitoring plan.

The licensee shall include with the plan documentation of agency 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 the agencies' 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 plan. The tailwater fish monitoring shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 404. *Chilhowee Development Benthic Macroinvertebrate Study Plan.*

Within two years of the effective date of the license, the licensee shall file for Commission approval, a plan to periodically sample benthic macroinvertebrates in the tailwaters of the Chilhowee Development. The plan shall be developed in consultation with the U.S. Fish and Wildlife Service (FWS), U.S. Forest Service (Forest Service), Tennessee Department of Environment and Conservation (Tennessee DEC), Tennessee Wildlife Resources Agency (Tennessee Wildlife), and the National Park Service (NPS).

The plan shall include, at a minimum:

- (1) a sampling and study design that would be substantially similar to the benthic macroinvertebrate resource sampling plan that was used by the licensee for the 2004 relicensing of the Tapoco Project Developments of Santeetlah, Cheoah, and Calderwood;
- (2) a description of the methods to be used to determine the status of benthic macroinvertebrate community health and species assemblages for the upper, middle, and lower sections of the Chilhowee Development tailwaters;
- (3) benthic sampling techniques that include kicknet, airlift, sweepnet, ponar or Peterson grabs, and/or visual collection techniques for each sampling site within the tailwaters reach;
- (4) a timetable that facilitates benthic macroinvertebrate monitoring commencing in year 3 of the license and during year 15 of the license if warranted by significant or questionable results from the initial sampling or as a result of significant improvements in water quality or thermal regime in the Chilhowee Development tailwaters;
- (5) reporting monitoring results to the FWS, Forest Service, Tennessee DEC, Tennessee Wildlife, NPS, and Commission within six months of the completion of each sampling effort; and
- (6) a schedule for implementing the macroinvertebrate study plan.

The licensee shall include with the plan documentation of agency 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 the agencies' 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 plan. The benthic macroinvertebrate study shall not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 405. *Monitoring Plan for the Cheoah River Bypassed Reach Minimum Flows and Ramping Rates at Santeetlah Development.* Within 24 months of the effective date of the license, the licensee shall file for Commission approval, a plan to monitor the minimum flows from the Santeetlah Development dam into the Cheoah River bypassed reach and the effects of the ramping rates required by the North Carolina 401 Water Quality Certificate for the project. This plan shall be prepared after consultation with the North Carolina Department of Environment and Natural Resources, U.S. Fish and Wildlife Service, U.S. Forest Service, and the National Park Service.

The monitoring plan shall include as a minimum:

- (1) a schedule for implementing the plan;
- (2) identification of the Taintor gates to be used to release the minimum flows;
- (3) a description of any periodic maintenance or calibration procedures necessary to ensure the flow release mechanisms work properly;
- (4) a description of how project operations data shall be recorded to verify proper operations and minimum flow releases;
- (5) a description of how project operations data shall be maintained and available for inspection by the resource agencies and the Commission;
- (6) a method of reporting any deviations in the required minimum flow releases;
- (7) methods of consulting with the resource agencies concerning the results of the monitoring of the minimum flows;

- (8) the location(s) to measure compliance with the ramping rates;
- (9) the steps to be taken when the ramping rate needs to be temporarily modified if required by operating emergencies beyond the control of the licensee and for short periods of time for project maintenance;
- (10) a study plan to monitor the effects of the ramping rates on aquatic resources in the bypassed reach that as a minimum includes: (a) defining the time table when the first monitoring of aquatic resources shall occur and when and how often, subsequent sampling under the monitoring plan shall occur and when monitoring shall end; (b) defining the aquatic resources to be monitored, including threatened and endangered species, and specific habitat types (*e.g.*, gravel beds, ledge habitat etc.); (c) defining the type of equipment to be used to accomplish the monitoring (*e.g.*, electrofishing, seining, trap nets, benthic collection equipment, etc.); (d) identifying the entities that shall conduct the monitoring; (e) reporting the monitoring results to the agencies and the Commission within six months of completing each monitoring effort; (f) methods of reporting any deviations in the required ramping flows; (g) methods of consulting with the resource agencies concerning the results of the monitoring of ramping rates; (h) a description of any periodic maintenance or calibration procedures necessary to ensure the mechanical facilities work properly to ensure the required upramping and downramping rates; and (i) how the ramping monitoring results shall be incorporated with the results of resource agencies assessment of the effects of the repeating 5-year high flow releases on aquatic and associated riparian habitats in the Cheoah River bypassed reach; and
- (11) provisions to keep accurate and sufficient records and to continue providing the minimum flows when there is any uncontrollable power outage or other unplanned event that affects the availability of water.

The licensee shall include with the plan 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 the agencies' 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 plan, schedule, and ramping rates. Upon Commission approval, the licensee shall implement the plan according to the Commission-approved schedule, including any changes required by the Commission.

Article 406. *Cheoah River Bypassed Reach Gravel Enhancement Plan.* Within six months of the effective date of the license, the licensee shall file for Commission approval, a Gravel Enhancement Plan for the Bypassed Reach of the Cheoah River. The plan shall be prepared after consultation with the North Carolina Wildlife Resources Commission, North Carolina Department of Environment and Natural Resources, U.S. Forest Service, and the U.S. Fish and Wildlife Service.

The Gravel Enhancement Plan shall include as a minimum: (1) methods to monitor the success or failure of the gravel introductions; (2) an introduction of 100 cubic yards (cy) of gravel at two sites within the bypassed reach during the first year of the new license; (3) the introduction of an additional 100 cy of gravel every other year after the initial introduction depending on the results of follow-up hydrologic and biological monitoring; (4) the type and frequency of techniques used to conduct hydrologic and biological monitoring; (5) the types of aquatic species to be monitored in the bypassed reach; (6) the source, type, size, and composition of the gravels to be used; and (7) a schedule for implementing the monitoring plan within one full construction season after the plan has been approved by the Commission.

The licensee shall include with the monitoring plan documentation of agency consultation, copies of comments and recommendations on the plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' 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 plan. The Gravel Enhancement Plan shall not be implemented until the licensee is notified that the plan is approved. Upon Commission approval, the licensee shall implement the plan according to the approved schedule, including any changes required by the Commission.

Article 407. *Endangered Species Management Plan.* Within 30 months of the effective date of the license, the licensee shall file with the Commission, for approval, an Endangered Species Management Plan to protect and enhance federally-listed threatened or endangered species and their critical habitat associated with the Tapoco Project. The plan shall include, but not be limited to, measures for the protection of the endangered

Appalachian elktoe (Alasmidonta raveneliana) and the threatened Virginia spiraea (Spiraea virginiana). The plan shall include, but not be limited to, the following:

- (1) measures necessary to protect listed species and their habitat in the project area;
- (2) an implementation schedule for the protective measures;
- (3) a monitoring plan to identify when the listed species becomes established on project lands and waters; and,
- (4) the potential effects of flow regimes in the Cheoah River on listed species.

For the Appalachian elktoe, the plan shall also describe the methods for vegetation removal in the bypassed Cheoah River, including the linear distance that vegetation shall be removed as well as the distance from the center line of the bypassed reach.

For the Virginia spiraea, the plan shall also address monitoring the five known occurrences of this species along the Cheoah River bypassed reach. The information collected shall include, but not be limited to, the following:

- (a) a linear extent (length and width) of the species;
- (b) the presence/absence of flowering;
- (c) management needs, including the presence/absence of invasive nonnative vegetation; and
- (d) a description of the substrate, position relative to stream flow, and the relationship between natural materials in the river channel and non-natural material outside, but adjacent to, the river channel.

The licensee shall prepare the plan after consultation with the U.S. Fish and Wildlife Service, U.S. Forest Service, Great Smoky Mountains National Park, North Carolina Wildlife Resources Commission, North Carolina Department of Environmental Resources, and Tennessee Department of Environment and Conservation. The licensee shall include with the plan documentation of agency 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 the agencies' comments and recommendations 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 plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 408. Recreation Plan. Within one year of the effective date of the license, the licensee shall file, for Commission approval, a final recreation plan to enhance recreation resources at the Tapoco Project. The licensee shall develop the plan after consultation with the North Carolina Wildlife Resources Commission, the North Carolina Department of Environment and Natural Resources, Tennessee Department of Environment and Conservation, Tennessee Wildlife Resources Agency, U.S. Fish and Wildlife Service, the National Park Service, the U.S. Forest Service and the State Historic Preservation Officer, as appropriate. In addition, the licensee shall develop the final recreation plan in conjunction with the Historic Properties Management Plan required as part of the Programmatic Agreement under this license, so that recreational enhancements do not conflict with historic properties in the project area.

The final recreation plan shall address, at a minimum, the specific measures that the licensee is responsible for at the following sites:

Santeetlah Reservoir:

- (1) Massey Branch Boat Launch: improve the boat ramp and expand the parking area.
- (2) Cheoah Point Access: improve the boat ramp and dock.
- (3) Improve the reservoir bank for public fishing.
- (4) Cooperate in the improvements at Cheoah Point campground.

Cheoah River:

- (1) Provide for an accessible fishing pier.
- (2) Provide for boater put-in and take-out facility or facilities.
- (3) Cooperate in the development of the approximate 9-mile-long trail along the Cheoah River.

Cheoah Reservoir:

- (1) Construct a canoe portage around Cheoah Dam.
- (2) Panel Branch Boat Access Area: cooperate in the relocation of the Panel Branch boat access area to Lewellyn Branch.
- (3) Improve the reservoir bank for public fishing.

Calderwood Reservoir:

- (1) Develop five primitive campsites at Calderwood Reservoir.
- (2) Canoe/Kayak Take-Out Area: develop a canoe/kayak take-out area near Calderwood Dam.
- (3) Contribute to the efforts for recreational fish stocking in Calderwood Reservoir.

Chilhowee Reservoir

- (1) Develop a canoe portage around Chilhowee Dam.
- (2) Develop two accessible fishing piers on Chilhowee Reservoir.
- (3) Day Use Areas: in cooperation with the Department of Transportation, as appropriate, improve the public day use areas located along US 129.

The final recreation plan shall also include: (1) a map(s) that clearly identifies all existing and proposed recreation sites and public access, in relation to the existing Tapoco Project boundary; (2) a construction schedule; (3) the length and width of any project-related recreation trail, canoe portage, etc.; (4) a description of soil erosion and sediment control measures to be used during construction of the recreation facilities and public access; (5) a discussion of how the needs of the disabled were considered in the planning and design of the recreation facilities and public access; (6) identification of appropriate sign(s), such as directions, at the recreation sites; and (7) an implementation schedule.

To provide for future recreation needs based on information collected and filed pursuant to the reporting requirements for FERC Form 80-Recreation Report, section 8 of the Commission's regulations (18 CFR 8.11) and applicable existing management plans, the licensee shall consult with the aforementioned agencies in year 31 of the license term (see relicensing settlement agreement, section 2.1.5). Within 30 days of agency consultation, the licensee shall file with the Commission a summary of the consultation, including any proposal for future recreation measures.

The licensee shall include with the final recreation plan documentation of agency 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 the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment prior to filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission. Any structure or facility constructed or installed in accordance with this plan shall be shown on as-built drawings filed pursuant to this license.

Article 409. Implementation of the Programmatic Agreement. The Licensee shall implement the "Programmatic Agreement Among the Federal Energy Regulatory Commission; the Advisory Council on Historic Preservation; the State of North Carolina, State Historic Preservation Officer; and the State of Tennessee, State Historic Preservation Officer for Managing Historic Properties that May be Affected by a License Issuing to Alcoa Power Generating, Inc. for the Continued Operation and Maintenance of the Tapoco Hydroelectric Project in Graham and Swain Counties, North Carolina, and Blount and Monroe Counties, Tennessee," executed on August 25, 2004. In the event that the Programmatic Agreement is terminated, the licensee shall implement the provisions of its approved Historic Property Management Plan (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 the Commission's approval 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 410. Development of a Shoreline Management Plan. Within three months of the effective date of this license, the licensee shall develop and file with the Commission a Shoreline Management Plan for the Project. The Licensee shall prepare the Shoreline Management Plan in consultation with North Carolina Department of Environment and Natural Resources, North Carolina Wildlife Resources Commission, North Carolina State Historic Preservation Office, U.S. Forest Service, U.S. Fish and Wildlife Service, Bureau of Indian Affairs, Great Smoky Mountains National Park, Eastern Band of Cherokee Indians, Cross Creek Property Owners Association, Friends of Lake Santeetlah, Town of Lake Santeetlah, Town of Robbinsville, Graham County, Sierra Club, American Rivers, Tennessee Clean Water Network, The Nature Conservancy, Tennessee Department of Environment and Conservation, Tennessee Wildlife Resources Agency, Tennessee Historic Commission and Tennessee State Historic Preservation Office.

The Licensee shall provide the consulted parties with a 30-day period to review and comment on a draft Shoreline Management Plan. The Licensee shall also provide the public an opportunity to comment on the draft Shoreline Management Plan by holding a public meeting on the draft Plan at least 30 days prior to filing the Plan with the Commission.

The Licensee shall include with its filing copies of all comments received on the draft Plan and a discussion of those comments, including whether the Licensee adopted the comments or the Licensee's rationale for not incorporating the comments into the final Plan.

Article 411. The Licensee shall consult with the U.S. Fish and Wildlife Service (FWS) regarding the presence of any federally listed threatened or endangered species prior to beginning any future land-disturbing activities within the project boundary, if listed species or critical habitat are affected in a manner not previously considered, a new species is listed, or critical habitat is determined during the term of the license. After consultation, the licensee will determine the presence of the listed species in the affected area and develop measures, if necessary, to avoid or mitigate potential effects on such species.

If the FWS determines that any of the above conditions may affect a federally listed threatened or endangered species, the licensee shall inform the Commission to ensure that consultation under the Endangered Species Act is initiated and shall file a management plan for Commission approval before beginning the action. The plan shall include: (1) a description of the action, (2) a description of the affected area, (3) a description of the habitat requirements of the species, (4) a description of the potential impacts to the species, (5) a description of the measures to avoid or mitigate potential adverse impacts to the species, and (6) the comments of the FWS on the management plan. The Commission reserves the right to require changes to the plan.

Article 412. Use and Occupancy. (a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee shall also have continuing responsibility to supervise and control the use and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The type of use and occupancy of project lands and waters for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 water craft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the 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 that can accommodate no more than 10 water craft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved Exhibit R or 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 Exhibit R or approved report on recreational resources of an Exhibit E; or, if the project does not have an approved Exhibit R or approved report on recreational resources, that the lands to be conveyed do not have recreational value.
- (3) The instrument of conveyance must include the following covenants running with the land: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (ii) the grantee shall take all reasonable precautions to ensure that the construction, operation, and maintenance of structures or

facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project; and (iii) the grantee shall not unduly restrict public access to project waters.

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

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

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

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

(J) This order is final unless a request for rehearing is filed within 30 days from the date of its issuance, as provided in section 313(a) of the FPA. 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, except as specifically ordered by the Commission. The licensee's failure to file a request for rehearing shall constitute acceptance of this license.

By the Commission.

(S E A L)

Linda Mitry,
Deputy Secretary.

APPENDIX A SANTEETLAH RESERVOIR OPERATING PLAN

Commission additions to the plan are shown in *italic* and deletions to the plan are shown in ~~strikeout~~.

1.0 OPERATIONAL REQUIREMENTS

1.1 *Article OR-1. Santeetlah Reservoir*

1.1.1 Santeetlah Reservoir Operating Curve

The Licensee shall operate Santeetlah Reservoir at or above the minimum levels as depicted on the Santeetlah Reservoir Operating Curve (Figure OR-1.1).

1.1.2 Planning Period

Each Friday the Licensee will project the inflow for the next 10 days, the “planning period”. The water requirement for the planning period is the volumetric sum of base flows; high flow events, if any; flood discharge flows, if any; Santeetlah Reservoir Operating Curve increase, if any; and generation. The water available for the planning period is the volumetric sum of storage above the Santeetlah Reservoir Operating Curve and the planning period projected inflow. During normal operations the Licensee will adjust generation to maintain Santeetlah Reservoir elevations at or above the Santeetlah Reservoir Operating Curve. Generation is not restricted for normal operations.

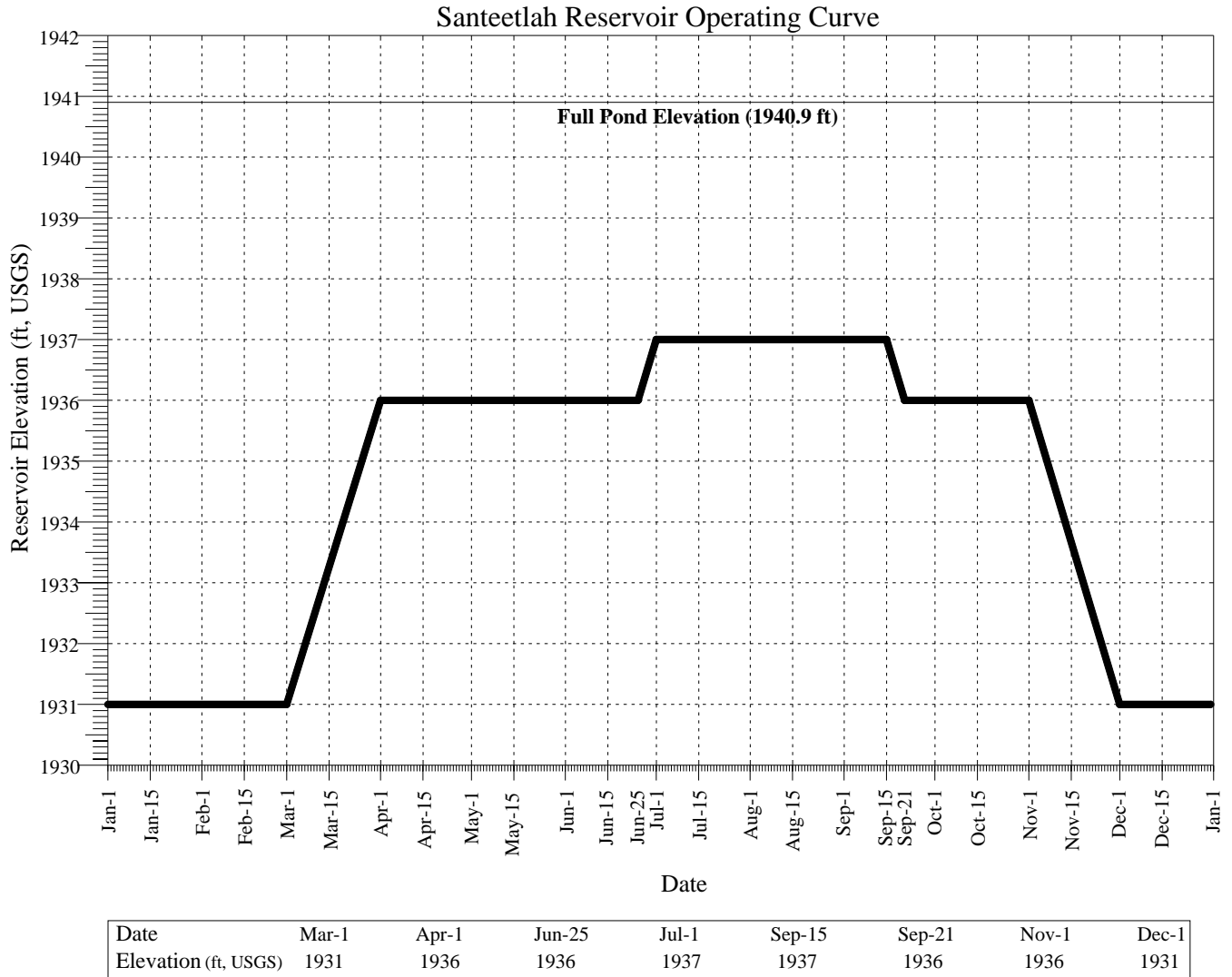
1.1.3 Reservoir Elevation Monitoring

The Licensee shall monitor the elevation of Santeetlah Reservoir on an hourly basis using a water level sensor located upstream of the gatehouse, on the upstream face of the intake. The water level data recorded by the sensor will be transmitted electronically to the dispatcher’s office in Alcoa, Tennessee. The Licensee shall make available electronically (*e.g.*, the Internet) the hourly Santeetlah Reservoir elevation data.

Based on actual experience, the Licensee may consult with the Parties to the Tapoco Project Settlement Agreement on the actual water level results at Santeetlah Reservoir from the management practices implemented. After such consultation, the Licensee may request Commission approval of minor adjustments to the Santeetlah Reservoir Operating Curve, provided that such adjustments have been first approved by applicable state and

federal agencies.

Figure OR-1.1 Santeetlah Reservoir Operating Curve



1.2 Article OR-2. Cheoah River Flow Regime

1.2.1 Aquatic Base Flows

In order to enhance, maintain, and protect fish and wildlife habitat and biological integrity and water quality in the Cheoah River bypass reach, the Licensee shall release aquatic base flows from Santeetlah Dam in the magnitude and for the duration described in Table OR-2.1. The Licensee shall determine the aquatic base flow for each month by

calculating the average daily inflow (ADI) value for the three preceding months. The Licensee shall calculate the ADI using its recorded measures of daily change in reservoir elevation and total discharge (generation flows, instream flow releases, high flow events, and flood discharge flows). If the ADI is greater than the historic 25th percentile average flow for that month (Table OR-2.2.), the Licensee shall release flows according to Tier A and if the ADI is less than or equal to the historic 25th percentile average flow for that month, the Licensee shall release flows according to Tier B.

In order to allow state and federal agencies to complete the collection of three full years of baseline data in the Cheoah River below Santeetlah Dam, the Licensee shall release aquatic base flows starting September 1, 2005.

Table OR-2.1 Aquatic Base Flows

Month	Tier A Flowrate (cfs)	Tier B Flowrate (cfs)
January	50	50
February	100	90
March	100	90
April	100	90
May	90	80
June	60	60
July	60	50
August	50	40
September	50	40
October	50	40
November	50	40
December	60	50

Table OR-2.2 Historic 25th Percentile Average Flows Based on 31-year Period of Record (1971-2001)

Month	Threshold Flow (cfs)
Jan	256
Feb	446
Mar	484
Apr	615
May	617
Jun	526
Jul	403
Aug	289
Sep	208
Oct	141
Nov	116
Dec	148

1.2.2 High Flow Events

The Licensee shall provide high flow events, which follow a repeating five-year schedule for the term of the License according to Table OR-2.3.

In order to allow state and federal agencies to collect three full years of baseline data in the Cheoah River below Santeetlah Dam, the Licensee shall provide high flow events starting September 1, 2005.

1.2.2 High Flow Events

The Licensee shall provide high flow events, which follow a repeating five-year schedule for the term of the License according to Table OR-2.3.

In order to allow state and federal agencies to collect three full years of baseline data in the Cheoah River below Santeetlah Dam, the Licensee shall provide high flow events starting September 1, 2005.

When implementing the high flow events, the following conditions apply:

1. Use the Tainter gates at Santeetlah Dam for the high flow events. The Licensee shall use the headwater elevation of Santeetlah Reservoir to determine the gate opening necessary to make the required high flow release from Santeetlah Dam. The downstream gage at Bearpen Gap shall be used during the initial system set up to confirm the required gate positions to make the high flow releases;
2. Schedule all high flow events on weekend days (Saturday and Sunday); schedule three day events on Saturday, Sunday, and Monday;
3. Schedule the March event for the third weekend in March and the November event for the first weekend in November;
4. Schedule one 3-day high flow event in April in years 1, 3, and 4 of the repeating sequence;
5. Utilize the downstream gage at Bearpen Gap during the initial system set up to confirm the required gate positions and gate change frequencies in order to ramp the high flow events. Ramp high flow events at a rate of 2-inches per hour for flows between the aquatic base flow and 100 cfs;
6. Release flows for 4 hours for day 1 high flow releases for 2-day events in February; releases are targeted to begin at hour 11;

7. Release flows for 8 hours for day 1 high flow releases for 1-, 2-, and 3-day events in March through November; releases on day 1 are targeted to begin at hour 8 in March, April, October, and November, and at hour 9 in May through September;
8. Release flows for 8 hours for day 2 high flow releases for 2-day events in April through July; releases on day 2 are scheduled to begin at hour 8 in April and at hour 9 in May, June, and July;
9. Reduce the flow to 500 cfs after the end of the 8 hours of high flow on day 1 until the beginning hour of high flow on day 2 for 2-day events in April through July;
10. Schedule single day high flow events from July through November with a minimum of 10 days between events.

The Licensee will provide 12 months prior notice to the *Commission*, USFWS, USFS, NCWRC, NCDENR, EBCI, and Graham County of the proposed schedule of high flow events.

Table OR-2.3 High Flow Events – 5-year Repeating Schedule

High Flows	Year 1		Year 2		Year 3		Year 4		Year 5		Magnitude (cfs) ³		
	Events	Total Days Per Month	Events	Total Days Per Month	Events	Total Days Per Month	Events	Total Days Per Month	Events	Total Days Per Month	Day 1	Day 2	Day 3
January													
February	1	2	1	2	1	2	1	2	1	2	1000	Var ¹	
March	1	3	1	3	1	3	1	3	1	3	1000	600 ²	300
April	2	5	3	6	2	5	2	5	3	6	1000	850	300
May	2	4	2	4	3	6	3	6	3	6	1000	850	
June	1	2	1	2					1	2	1000	850	
July					1	2					1000	850	
August							1	1			1000		
September	1	1			1	1					1000		
October	1	1	1	1			1	1			1000		
November	1	1	1	1	1	1	1	1	1	1	1000		
December													
Total Per Year:	10	19	10	19	10	20	10	19	10	20			

¹ 600 cfs from hour 15 to hour 19, 400 cfs from hour 20 to hour 34; 200 cfs from hour 35 to hour 47; 100 cfs for hour 48
² 600 cfs from hour 16 to hour 36; 300 cfs from hour 37 to hour 48
³ 12:00 a.m. (midnight) shall be the starting point for determining the appropriate time for initiating and changing flow releases

1.2.3 Reallocation of Flows

The Licensee shall convene an annual planning meeting in early October each year which shall include the U.S. Fish and Wildlife Service (USFWS), the U.S. Forest Service (USFS), the North Carolina Wildlife Resources Commission (NCWRC), the North Carolina Department of Environment and Natural Resources (NCDENR), and the Eastern Band of Cherokee Indians (EBCI). If the USFWS, USFS, NCWRC, NCDENR, and EBCI notify the Licensee prior to the annual meeting that they have determined by consensus that unanticipated circumstances have arisen that indicate that additional aquatic habitat enhancement would result from the reallocation of water previously committed to the aquatic base flows and/or high flow event schedule as required in sections 1.2.1 and 1.2.2 above, then the Licensee shall discuss with these entities the reallocation of water for aquatic habitat enhancement purposes within the aquatic base flow regime and/or the high flow event schedule for any year. The Licensee shall cooperate with the USFWS, USFS, NCWRC, NCDENR, and EBCI in evaluating any requested water reallocation, with due consideration given to the following factors:

1. Any reallocation requests shall be based on periodic (*i.e.* every several years) re-evaluations of aquatic conditions in the Cheoah River by the above-listed entities;
2. Any requested reallocation shall be designed to minimize any additional lost generation (either in lost megawatts and/or lost value) and operating costs;
3. Under no circumstances shall water allocated as part of the aquatic base flow regime be utilized for high flow events and vice versa nor shall water from one calendar year be reallocated to any other calendar year;
4. Any requested reallocation of water must be able to be accommodated with the gate structures in existence at that time.

If agreement is reached on reallocation, the Licensee shall make a filing with the Commission requesting the approval of the requested revised allocation of flows for that calendar year, and upon Commission approval will implement the revised aquatic base flow regime and/or high flow event schedule *including any changes required by the Commission*.

1.2.4 Potential Modifications to Repeating Five Year Schedule of High Flow Events

Starting in October 2010, in conjunction with the annual planning meeting required in section 1.2.3 above, the Licensee will consult with the U.S. Fish and Wildlife Service

(USFWS), the U.S. Forest Service (USFS), the North Carolina Wildlife Resources Commission (NCWRC), the North Carolina Department of Environment and Natural Resources (NCDENR), the Eastern Band of Cherokee Indians (EBCI), and Graham

County regarding the possibility of providing high flow events for whitewater boating purposes on a trial basis in addition to the high flow events contemplated in the repeating five year schedule included in section 1.2.2 above.

If the USFWS, USFS, NCWRC, NCDENR, and EBCI notify the Licensee that they are in full concurrence that biological recovery in the Cheoah River has proceeded to a point that additional high flow events should be scheduled and evaluated on a trial basis, then the Licensee will consult with USFWS, USFS, NCWRC, NCDENR, EBCI and Graham County, to determine the specific number, magnitude and timing of such additional trial high flow events. ~~The Licensee will provide the additional high flow events upon Commission approval and if (i) the requesting entity has agreed, in writing to, and does compensate the Licensee for its costs incurred as a result of the additional high flow events, (ii) the requesting entity has agreed to and in fact does fully fund the expenses incurred for additional monitoring of resources in the Cheoah River associated with the evaluation of the biological effects of the additional high flow events, and (iii) the additional high flow events can be provided~~ *The Licensee may provide additional high flow events* in a manner consistent with other requirements of the License (including but not limited to the Santeetlah Reservoir Operating Curve, the Low Inflow Protocol, and the Maintenance and Emergency Protocol).

In the event that the Licensee, USFWS, USFS, NCWRC, NCDENR, EBCI, and Graham County agree on the provision of additional trial high flow events, then no later than 60 days prior to the anticipated start of the additional high flow events, the Licensee shall file for Commission approval a plan of the proposed revisions to the repeating five year schedule of high flow events.

In conjunction with subsequent annual planning meetings, the Licensee will consult with the USFWS, USFS, NCWRC, NCDENR, and EBCI in order to determine whether to terminate, continue, or modify the additional trial high flow events, or to recommend to FERC a permanent change in the repeating five year schedule of high flow events. The determination shall be based on USFWS, USFS, NCWRC, NCDENR, and EBCI's assessment of the effects of the additional trial high flow events on the Cheoah River aquatic and associated riparian biological communities, on other recreational uses of the Cheoah River, on water levels in Santeetlah Reservoir, and of cumulative and secondary effects on the ecological and aesthetic resources of the Cheoah River corridor. ~~The determination will also be based upon the Licensee's assessment of the performance of the requesting entity in reimbursing the Licensee and the agencies for costs associated~~

~~with the additional releases, and any other factors associated with Project operations and other relevant License requirements that may be affected by the additional high flow events.~~

The Licensee shall make additional filings, as appropriate, notifying the Commission of any additional requested revisions to the repeating five year schedule of high flow events, and upon Commission approval will implement the revised high flow event schedule, *including any changes required by the Commission.*

1.2.5 Low Inflow Protocol

If inflow is not adequate to provide high flow releases and maintain required reservoir levels while maintaining instream flows, then equitable reductions in Santeetlah Reservoir water levels, and high flow releases to the Cheoah River will be made as follows. If the water available for the planning period (as defined in Appendix A section 1.1.2) is less than the water requirement with no generation for the scheduling period the following low flow stages will be implemented. The low flow stage will remain in effect until the next planning period when the water requirement is compared to the water available. If the water available is less than the water requirement, the next stage will be implemented. If the water available is greater than the water requirement the previous stage will be implemented or normal operations if at Stage 1. If the actual inflow is appreciably different than the projected inflow the Licensee may make adjustments to the low flow stage during the planning period.

Stage 1: Reduce high flow duration by 25% (2 hours for each day of the high flow event). Elevation minimum decreased by 0.25 feet below operating curve.

Stage 2: Reduce high flow duration by 50% (4 hours for each day of the high flow event). Elevation minimum decreased by 0.50 feet below the operating curve.

Stage 3: Reduce high flow duration by 100%. Elevation minimum decreased by 0.75 feet below the operating curve.

Stage 4: Elevation minimum decreased by 1.0 feet below operating curve. If continuous discharge is at Tier A reduce continuous discharge from Tier A to Tier B level.

Stage 5: Continue releasing Tier B continuous discharge through spillway gates until elevation reaches bottom of the spillway gates (or valve).

Stage 6: Reduce continuous discharge to inflow.

Based on actual experience, the Licensee may consult with state and federal agencies to modify the Low Inflow Protocol. If agreement is reached on modifying the protocol, the Licensee shall make a filing with the Commission requesting approval of the proposed modification and upon Commission approval will implement the modified protocol.

1.2.6 Gaging Requirements

The Licensee shall continue funding the existing U.S. Geological Survey (USGS) Bearpen Gap gage (Station No. 0351706800) on the Cheoah River below Santeetlah Dam. Additionally, the Licensee shall install and maintain a calibrated staff gage, or the equivalent, at the Joyce Kilmer Bridge to allow for visual confirmation of Cheoah River flows. The Licensee shall make available electronically (*e.g.*, the Internet) the calculated hourly Cheoah River flow release data (cfs).

1.2.7 Interim Implementation

Prior to the completion of the gate modifications required in section 1.2.8 below, the continuous base flow release shall consist of a flow of approximately 50 cfs released through an existing Tainter gate at Santeetlah Dam. Prior to the completion of the Tainter gate automation required in section 1.2.8 below, high flow events shall be made with consideration of the following factors:

1. Releases from November 1 through March 31 will be scheduled to occur during the regular work week (Monday through Friday) to minimize additional personnel costs associated with releases on weekends using the existing gates and related equipment; releases from April 1 through October 31 will occur on weekends;
2. Releases will be initiated using the “Year 1” release schedule in Table OR-2.3 and subsequent years will use “Year 2”, “Year 3” etc.;
3. Ramping rates will not apply;
4. The Licensee shall make a reasonable effort to provide the high flow events according to the high flow event schedule in Table OR-2.3, however some variation in terms of actual timing of events may occur during this interim period until the gate modifications are complete.

To accommodate release of the aquatic base flow and high flow events, the Licensee shall add “piggy-back” gates to, and automate, either two or three of the existing Tainter gates on Santeetlah Dam within 24 months of the effective date of this License. The Licensee may deviate from the Santeetlah Operating Curve, the aquatic base and high flow releases during the winter drawdown period to allow for construction in the field of

the modified Tainter gates. Within 90 days of the effective date of this License, the Licensee shall file, for approval by the Commission, a plan and schedule for modifying the Tainter gates.

1.2.9 Temporary Modifications

The flows and reservoir elevations may be temporarily modified if required by operating emergencies beyond the control of the licensee, or for short periods of time upon mutual agreement among the licensee, North Carolina Department of Environment and Natural Resources (NCDENR); North Carolina Wildlife Resources Commission (NCWRC); US Fish and Wildlife Service(USFWS);and US Forest Service(USFS).

**APPENDIX B
CHEOAH, CALDERWOOD, AND CHILHOWEE RESERVOIR
OPERATING PLAN**

Commission additions to the plan are shown in *italic* and deletions to the plan are shown in ~~strikeout~~.

1.3 Article OR-3. Cheoah Reservoir

The Licensee shall operate Cheoah Reservoir with no seasonal drawdown and maximum drawdowns of 7 feet from normal full pool elevation of 1276.8 feet USGS datum.

Article OR-4. Calderwood Bypass Flows

Minimum Flow Releases

Beginning with the effective date of this License, the Licensee shall release minimum instream flows in the Calderwood Bypass reach of the Little Tennessee River according to the repeating 10-year schedule shown in Table OR-4.1. The minimum flow regime shall vary annually in both discharge and timing (*i.e.* adjustments in flows will be made on the first Tuesday of the month, no later than 12:00 p.m., so as to not always occur at the end of one month and beginning of another). The Licensee shall use the gate position and headpond elevation to determine the magnitude of the flow release. The Licensee shall release water from the base of the gate, down approximately 6-ft from normal full pond elevation of 1087.8 feet USGS datum.

The Licensee shall make the determination to release minimum instream flows in the Calderwood Bypass according to Scenario A, B or C for each calendar year, so long as the required frequency of each of these scenarios is met within each ten-year period.

Table OR-4.1 Calderwood Bypass Instream Flows

Scenario	A	B	C
January	45	50	55
February	40	50	60
March	35	50	65
April	20	40	60
May	30	40	50
June	25	30	35
July	30	30	30
August	20	25	30
September	25	25	25
October	35	30	25

November	45	40	25
December	40	40	40
Average Annual Flow	32.5 cfs	37.5 cfs	41.5 cfs
Frequency	3/10 years	5/10 years	2/10 years

Target Flows

In order to reduce the potential for thermal impacts on stream biota, during the normally hot and dry months of July – September, the Licensee shall consider the flows in Table OR-4.1 for each month as target flows. The Licensee shall operate within a limited flow band around the flow values due to the variation in headpond elevations during normal operation and the small magnitude of some of the required flows. The Licensee may exceed target flows if water is released upstream or inflows exceed the turbine capacity of the Calderwood Powerhouse or as necessary to pass trash at the dam.

In releasing the target flows into the Calderwood Bypass reach consistent with Table OR-4.1, the Licensee shall ensure that the released flows are no greater than 50 cfs above the target flows, except as provided in the previous paragraph, and no lower than 5 cfs below the target flows.

Gate Modifications and Schedule

The Licensee shall complete gate modifications necessary to release Calderwood Bypass flows within 18 months of the effective date of this License. Within 90 days of the effective date of this License, the Licensee shall file for approval by the Commission a plan and schedule for modifying the gates.

Flow Data Recording

The Licensee shall record the flow data electronically using the control system at Calderwood Dam. The Licensee shall make available electronically (*e.g.*, the Internet) the calculated hourly Calderwood Bypass flow release data.

Reduction of Flows for Access to Goat Creek

1. The Licensee may temporarily reduce instream flows in the Calderwood Bypass as deemed necessary by the Licensee for the purpose of safely crossing the Little Tennessee River to utilize the Goat Creek access route to construct, reconstruct, inspect, maintain or perform related activities with respect to the Calderwood transmission lines. The maximum flow in the Calderwood Bypass that allows safe crossing has been determined to be approximately 20 cfs.

2. In order to allow the elevation of the Calderwood Bypass to stabilize for safe crossing, the Licensee may initiate the reduction of minimum flows in the Calderwood Bypass to approximately 20 cfs 18 hours before any planned crossing of the Calderwood Bypass.
3. The Licensee shall maintain the flow at approximately 20 cfs during the entire period that transmission line work is being performed.
4. The Licensee shall consult with the USFWS, TDEC, TWRA, and USFS prior to initiating any modifications or additions of material to the streambed to facilitate vehicle passage.
5. When access for planned maintenance on transmission lines will require deviation from the minimum flows in the Calderwood Bypass, the Licensee will provide 15 days prior notice to the Commission, USFWS, TDEC, TWRA, and USFS. The notice will include an estimate of the proposed starting date and duration of the reduced flow. To the extent practicable, the Licensee will conduct planned maintenance during months of the lowest required flows into the Calderwood Bypass, *i.e.*, June through October.
6. When access for unplanned transmission line maintenance or emergencies requires deviation from the minimum flows in the Calderwood Bypass, the Licensee will provide notice to the Commission, USFWS, TDEC, TWRA, and USFS as soon as practicable but not longer than five days after the initiation of the flow reduction.

1.5 Article OR-5. Calderwood Reservoir

The Licensee shall operate Calderwood Reservoir with no seasonal drawdown and maximum drawdowns of 6 feet from normal full pool elevation of 1087.8 feet USGS Datum.

1.6 Article OR-6. Chilhowee Reservoir

The Licensee shall operate Chilhowee Reservoir with no seasonal drawdown and maximum drawdowns of 5 feet from normal full pool elevation of 874.0 feet USGS datum.

1.7 Temporary Modifications

The flows and reservoir elevations of the Cheoah, Calderwood and Chilhowee development may be temporarily modified if required by operating emergencies beyond the control of the licensee, or for short periods of time upon mutual agreement among the licensee, North Carolina Department of Environment and Natural Resources (NCDENR); North Carolina Wildlife Resources Commission (NCWRC); Tennessee Wildlife Resources Agency (TWRA); Tennessee Department of Environmental

Conservation (TDEC) US Fish and Wildlife Service(USFWS);and US Forest Service(USFS).

**APPENDIX C
MAINTENANCE AND EMERGENCY PROTOCOL PLAN**

Commission additions to the plan are shown in *italic* and deletions to the plan are shown in ~~strikeout~~.

1.7 Article OR-7. Maintenance and Emergency Protocols

1.7.1 Maintenance and Emergency Situations

The following table (Table OR-7.1) identifies 1) the assumed most likely emergency, unplanned maintenance (*e.g.* equipment failure), and maintenance situations when certain license conditions may be impacted and 2) the potential actions to be taken by the Licensee for each situation. The Licensee shall determine the specific details of actions to be taken on a case-by-case basis, however, the Licensee shall place the highest priority on maintaining and restoring minimum flows in the bypass channels.

Table OR-7.1 Maintenance and Emergency Situations

Situation	Indications	Potentially Impacted License Conditions		
		Minimum Flows in Bypass Channels	High Flow Releases from Santeetlah Dam into the Cheoah River	Normal Operating Range for Reservoir Levels
Potential Actions to be Taken				
Outage of Tainter gate(s) at Santeetlah Dam	Maintenance or equipment failure prevents opening or closing one or more gates		Notify using High Flow Event Notification Procedure (HFENP). Release from alternate gate, delay start of event or reschedule, lower flow for event	Repair gate or operating mechanism to close gate ¹
Outage of aquatic flow gate(s)	Maintenance will require one or more aquatic flow gates to be inoperable	Release flow from Tainter gate		
Outage of gate control system	Maintenance or failure of control system	Control gate manually, release flow from Tainter gate	Notify using the HFENP. Open gate manually, release from alternate gate, delay start of event or reschedule, lower flow for event	
Voltage or capacity emergency (typically less than 24 hours in	TVA curtails delivery of power to Alcoa Inc. TN	Reduce Cheoah River continuous flow to 40 cfs.	Notify using HFENP. Reduce generation and	Reduce generation to allow reservoir to refill when normal

duration)	Operations, voltage or capacity conditions in the TVA system or larger regional electric system failure has occurred or is imminent, or releases from Fontana are reduced or curtailed.	Increase to Tier A or B when normal operations resume	resume event when normal operations resume	operations resume
-----------	---	---	--	-------------------

¹For notification procedures see Section 1.7.2 Notification Guidance

1.7.2 Notification Guidance

The Licensee shall notify the Commission, resource agencies, and other affected parties regarding emergency, unplanned maintenance (*e.g.*, equipment failure), and maintenance situations under which certain license conditions may need to be temporarily suspended or modified. Due to the potential variability of the situations, the Licensee shall determine the specifics of notifications on a case-by-case basis but shall follow the general guidance provided below.

1. **Planned Maintenance:** For planned maintenance on equipment that will require deviation from (i) the minimum flows in the bypass channels, (ii) the high flow releases from Santeetlah Dam into the bypass channel, or (iii) the normal operating range for reservoir elevations, the Licensee will provide a minimum of 15 days prior notice to the Commission, appropriate federal and state resource agencies, TVA and other parties whose interests the Licensee determines could be affected by the planned maintenance activity. The notice will include the planned starting date, expected duration of the activity, the expected deviation from requirements of the License, and the planned actions to minimize the need to deviate from the License requirements. In implementing the planned maintenance activity, the Licensee shall consider any comments received in response to the notification.

2. **Unplanned Maintenance:** For unplanned maintenance that will require deviation for a period of longer than 24 hours from (i) the minimum flows in the bypass channels, (ii) the high flow releases from Santeetlah Dam into the bypass channel, or (iii) the normal operating range for reservoir elevations, the Licensee will notify the Commission, appropriate federal and state resource agencies, TVA, and other parties whose interests the Licensee determines could be affected by the unplanned maintenance activity. The notification will occur as soon as practicable but not longer than five days after the initiation of the deviation.

3. Emergencies: For emergencies, the Licensee will notify the Commission, appropriate federal and state resource agencies, TVA, and other parties whose interests the Licensee determines could be affected by the emergency as soon as practicable but not longer than five days after the initiation of the deviation.
4. Within 120 days of the effective date of the License, the Licensee will develop and file with the Commission a High Flow Event Notification Procedure (HFENP) for situations when emergency, unplanned maintenance, and maintenance activities could affect high flow releases into the Cheoah River below Santeetlah Dam. The Licensee shall issue a draft HFENP to the appropriate federal and state resource agencies, TVA, and other parties for a minimum review period of 30 days. The HFENP shall include any comments received on the draft HFENP along with a discussion of how the Licensee addressed those comments.
5. *The Commission reserves the right to require changes to the HFENP. Upon Commission approval, the licensee shall implement the HFENP, including any changes required by the Commission.*

APPENDIX D
DEPARTMENT OF THE INTERIOR
SECTION 18 FISHWAY PRESCRIPTION

The United States Department of the Interior hereby submits its Prescription for Fishways for the Tapoco Project¹, pursuant to section 18 of the Federal Power Act, as amended. The Department is submitting this Decision Document to the Federal Energy Regulatory Commission, and will supplement this filing with its Administrative Record.

Statutory Authority

Section 18 of the Federal Power Act, 16 USC § 811, states in part:

“The Commission shall require the construction, maintenance, and operation by a licensee... such fishways as may be prescribed by the Secretary of Commerce or the Secretary of Interior.”

Section 1701(b) of the National Energy Policy Act of 1992, P.L. 102-486, Title XVII, § 1701(b), 106 Stat. 3008, states:

“The items which may constitute a ‘fishway’ under section 18 [16 USC § 811] for the safe and timely upstream and downstream passage of fish shall be limited to physical structures, facilities, or devices necessary to maintain all life stages of such fish, and project operations and measures related to such structures, facilities, or devices that are necessary to ensure the effectiveness of such structures, facilities, or devices for such fish.”

The Prescription for Fishways herein are issued under authority to the Southeast Regional Director from the Secretary of the Interior; the Assistant Secretary for Fish, Wildlife and Parks; and the Director of the U.S. Fish and Wildlife Service pursuant to section 18 of the Federal Power Act.

¹ The Tapoco Hydroelectric Project, FERC No. 2169, is located on the Little Tennessee River and the Cheoah River in Blount and Monroe Counties, Tennessee, and Graham and Swain Counties, North Carolina.

Part I. Prescription of a Fishway for the Chilhowee Development

A. General Terms and Conditions for Fishways

To ensure the immediate and timely contribution of any fishway to the Upper Tennessee River fish restoration effort, the following measures are included and shall be incorporated by the APGI (Licensee) to ensure the effectiveness of the fishway pursuant to section 1701(b) of the 1992 National Energy Policy Act (P.L. 102-0486, Title XVII, 106 Stat. 3008).

- a) A fishway shall be developed, operated and maintained to provide effective (safe, timely, convenient) passage for Spotfin Chub (*Erimonax (Cyprinella) monachus*), Yellowfin Madtom (*Noturus flavipinnis*), Smoky Madtom (*Noturus baileyi*), and Duskytail Darter (*Etheostoma percnurum*) between Citico Creek and Abrams Creek, and between Tellico River and Abrams Creek.
- b) The populations to be passed are those occurring at tributaries to the Little Tennessee River, including Abrams Creek (trib. at LT RM 37), Citico Creek (trib. at LT RM 31.8) and Tellico River (trib. at LT RM 19.2). The population of spotfin chubs at the Little Tennessee River (\geq LT RM 88.5) is also a source for augmentation of the populations.
- c) The design population to be “passed” between each of the three designated rivers for each target species is:

<u>Target Species</u>	<u>Fishway Exchange</u>
Spotfin Chub	100 per generation
Yellowfin Madtom	1 effective genome/generation
Smoky Madtom	1 effective genome/generation
Duskytail Darter	1 effective genome/generation

At this time, the best information available for rate of exchange indicates that naturally a few individuals per decade moved successfully between these populations. Movement of individuals probably comprised young-of-year dispersal movements during fall and winter, therefore translocations scheduled during this same time frame (August - May) would most closely mimic natural dispersal.

- d) The fishway identified in Article XX, as set forth in Part II(2) below, shall be fully operational at the Chilhowee Development as soon as possible but no later than 6 months after the effective date of the new license so that continuing impacts of the Project may be mitigated and benefits of passage realized as soon as practicable.

2) The FERC shall include the following license article language shall be included as part of the new license for the Project without material modification.

Within six (6) months of the effective date of the new license, the Licensee shall develop and file with the Commission a plan for fish passage at the Chilhowee Development. The plan shall be prepared in consultation with the U.S. Fish and Wildlife Service and shall provide for fish passage at the Chilhowee Development for four target fish species, the Spotfin Chub (*Erimonax monachus*), Yellowfin Madtom (*Noturus flavipinnis*), Smoky Madtom (*Noturus baileyi*), and Duskytail Darter (*Etheostoma percnurum*). Fish passage will entail annual funding by the Licensee for the trapping and relocation of certain numbers of each target fish species, each season. Actual numbers of each species will be determined annually in consultation with the U.S. Fish and Wildlife Service. Annual funding shall be used first to accomplish the primary fish passage objective of moving a certain number of each of the target fish species between Abrams Creek and Citico Creek, and between Abrams Creek and the Tellico River. Funding will be used secondarily to conduct associated sampling, marking and genetics testing to help to demonstrate that the Service's goal of genetic mixing between the sub-populations of the four fish species is being met. Funding can also be used to trap and transport fish between Tellico River and Citico Creek, to the extent that such efforts may also enhance the overall genetic health of the Abrams Creek populations. The Licensee shall develop in consultation with and submit for approval by the Service, all functional and final fishway plans, schedules, and effectiveness studies for the fishway described herein.

APPENDIX E
TENNESSEE 401 WATER QUALITY CERTIFICATION



DEPARTMENT OF ENVIRONMENT & CONSERVATION
Division of Water Pollution Control
401 Church Street
7th Floor, L & C Annex
Nashville, TN 37243-1534

April 29, 2004

Randall M. Overbey, President
Alcoa Power Generating Inc.
Tapoco Division
300 North Hall Road
Alcoa, Tennessee 37701-2516

SUBJECT: Revised §401 Water Quality Certification for the Federal Energy Regulatory Commission (FERC) Relicensing of Alcoa Power Generating Inc.'s Tapoco Hydroelectric Project
FERC Project Number 2169
State of Tennessee Application #NRS 03-055

Dear Mr. Overbey:

Pursuant to §401 of the Federal Clean Water Act (33 U.S.C. §1341), the State of Tennessee is required to certify whether the activity described below will violate applicable water quality standards. Accordingly, the Division of Water Pollution Control requires reasonable assurance that the activity will not violate provisions of *The Tennessee Water Quality Control Act of 1977* (T.C.A. § 69-3-101 et seq.) or of §§ 301, 302, 303, 306 or 307 of *The Clean Water Act*.

Subject to conformance with approved plans, specifications, and other information submitted in support of the referenced application, the State of Tennessee hereby certifies the proposed activity pursuant to 33 U.S.C. 1341. This shall serve as authorization pursuant to T.C.A. § 69-3-101 et seq.

This revised §401 certification replaces the one dated February 11, 2004. The

revisions contained in this certification represent technical corrections and clarifications that are considered to be minor in scope and within the intent of the originally issued certification to reflect the water quality-related terms of the Settlement Agreement.

This approval is only valid for the purpose and design that you submitted in your application, as described in the revised application. If you change your project, you must notify us and may be required to send us a new application for a new Certification. If the property is sold, the new owner must be given a copy of the Certification and approval letter and is thereby responsible for complying with all conditions. For this approval to be valid, you must follow the conditions listed below.

LOCATION: Little Tennessee River, Blount and Monroe Counties

DESCRIPTION: This §401 Water quality Certification is for the relicensing by the Federal Energy Regulatory Commission (FERC) and continuing operation of the Tapoco Project by Alcoa Power Generating Inc (APGI). The Tapoco Project consists of four impoundments and associated power generation and transmission facilities. Two of the impoundments (Chilhowee Reservoir and Calderwood

Reservoir) are in Tennessee, and two (Cheoah Reservoir and Santeetlah Reservoir) are upstream in North Carolina. To mitigate for ongoing damages to water resources resulting from continued operation of the project, the permittee will restore flow to the Calderwood bypass. Flows shall vary seasonally, with highs of 65 cubic feet per second (CFS) in winter months and low flows of 25-30 CFS in late summer and fall, except as provided for emergency or maintenance measures. A natural resource management fund of \$100,000 per year for the life of the FERC license will be established in part for the management of aquatic organisms adversely affected by the project. A permanent conservation easement will be placed on: (1) a buffer strip totaling approximately 181 acres which, together with project lands, provides a total of 200 feet of riparian protection; and (2) approximately 5,675 acres of land within the project watershed in Tennessee. Additionally, a term easement for the duration of the FERC license period will be placed on another approximately 3,906 acres of land within the watershed. This Certification is intended to reflect the water quality-related aspects of the *Agreement in Principle Between Tennessee Interest Groups and Resource Agencies (TIGRA) and Alcoa Power Generating Inc. (APGI) (Agreement in Principle)* and the draft Settlement Agreement. In the event that any terms in the final Settlement Agreement or FERC License differ from what is contained herein, the division will consider modifications to this certification.

EFFECTIVE DATE: February 11, 2004 (Revised April 29, 2004)

SPECIAL CONDITIONS:

- 1) The project shall be operated in conformance with the approved plans, specifications, agreements, data and other information submitted in support of the above application and the limitations, requirements, and conditions set forth herein.
- 2) Starting with the year in which the new license for the Tapoco Project is effective, APGI (Permittee/Licensee) will establish and maintain a watershed/conservation trust fund, to be known as the "Tallassee Fund," and as set forth in Proposed License Article F-2 in Appendix B of the Settlement Agreement, will contribute annually the amount of \$100,000, by January 31, adjusted annually thereafter for the Gross Domestic Product Implicit Price Deflator for the term of the new license to mitigate the continuing environmental impacts in Tennessee associated with the Project's operations and within the scope of subject matter of the Fish and Wildlife Coordination Act and section 10 of the FPA.
- 3) As described in Article FP-1 included in Appendix B of the Settlement Agreement, the Permittee/Licensee shall develop, operate, and maintain a fish passage program to provide effective (safe, timely, convenient) passage for Spottfin Chub (*Erimonax monachus*), Yellowfin Madtom (*Noturus flavipinnis*), Smoky Madtom (*Noturus baileyi*) and Duskytail Darter (*Etheostoma percnurum*) between Citico Creek and Abrams Creek, and between Tellico River and Abrams Creek.
- 4) The Permittee/Licensee shall release instream flows in the Calderwood Bypass reach of the Little Tennessee River consistent with a biologically diverse cool-warm water fishery, according to the repeating 10-year schedule shown in Table 1. The flow regime shall vary annually in both discharge and timing (*i.e.* adjustments in flows will be made on the first Tuesday of the month, no later than 12:00 p.m., so as to not always occur at the end of one month and beginning of another). The Permittee/Licensee may release instream flows in the Calderwood Bypass according to Scenario A, B or C, so long as the Permittee/Licensee ensures that the frequency of each of these scenarios is met over repeating ten-year periods.

Table 1. Calderwood Bypass Instream Flows

Scenario	A	B	C
January	45	50	55
February	40	50	60
March	35	50	65
April	20	40	60
May	30	40	50

June	25	30	35
July	30	30	30
August	20	25	30
September	25	25	25
October	35	30	25
November	45	40	25
December	40	40	40
Average Annual Flow	32.5 cfs	37.5 cfs	41.5 cfs
Frequency	3/10 years	5/10 years	2/10 years

- 5) In order to reduce the potential for thermal impacts on stream biota, during the normally hot and dry months of July – September, the Permittee/Licensee shall consider the flows in Table 1 for each month as target flows. The Permittee/Licensee shall operate within a limited flow band around the flow values due to the variation in headpond elevations during normal operation and the small magnitude of some of the required flows. The Permittee/Licensee may exceed target flows if water is released upstream or inflows exceed the turbine capacity of the Calderwood Powerhouse.
- 6) In releasing the target flows into the Calderwood Bypass reach consistent with Table 1, the Permittee/Licensee shall ensure that the released flows are no greater than 50 cfs above the target flows, except as provided in the previous paragraph, and no lower than 5 cfs below the target flows. Gate modifications are necessary in order to release Calderwood Bypass flows, and the Licensee shall complete gate modifications within 18 months of the effective date of the License. Within 90 days of the effective date of the FERC License, the Permittee/Licensee shall file for approval by the Commission a plan and schedule for modifying the gates.
- 7) The Permittee/Licensee shall use the gate position and headpond elevation to determine the magnitude of the flow release. The Permittee/Licensee shall release water from the base of the gate, down approximately 6-ft from normal full pond elevation of 1087.8 feet U.S. Geological Survey (USGS) datum.
- 8) The Permittee/Licensee shall record the flow data electronically for compliance purposes, using the control system at Calderwood Dam. The Licensee shall make available electronically (*e.g.* the Internet) the calculated hourly Calderwood Bypass flow release data.
- 9) The Licensee shall operate Calderwood Reservoir with no seasonal drawdown and maximum drawdowns of 6 feet from normal full pool elevation of 1087.7 feet USGS datum.
- 10) The Permittee/Licensee shall operate Chilhowee Reservoir with no seasonal drawdown and maximum drawdowns of 5 feet from normal full pool elevation of 874.0 feet USGS datum.

- 11) The Permittee/Licensee may modify instream flow releases required in Special Conditions 4 through 8, and may modify impoundment drawdowns required in Special Conditions 10 and 11 on a temporary basis for any of the following reasons:
- i) Maintenance, repair, or reconstruction of Project facilities.**
 - ii) Maintenance, repair, or reconstruction of non-Project facilities such as roads, bridges, or other structures in, or adjacent to, the Cheoah and/or Little Tennessee rivers.**
 - iii) Any emergency situations, including flood events, related to dam safety, human life and property, or rescue.
 - iv) For the purpose of safely accessing Goat Creek to maintain the Calderwood transmission lines.
- 12) Within two years of the effective date of the FERC License, the Permittee/Licensee shall develop and file with the Commission a sampling plan to periodically sample benthic macroinvertebrate resources in the tailwater area of the Chilhowee Development. At a minimum, the sampling plan shall include the following elements: the sampling study design will be substantially similar to the benthic macroinvertebrate resource sampling undertaken for the Santeetlah, Cheoah and Calderwood developments during the relicensing of the Project; benthic macroinvertebrate community health and species assemblages will be assessed at upper, middle, and lower sections of the Chilhowee tailwaters; and benthic samples will include kicknet, airlift, sweepnet, ponar or Peterson grabs, or visual collection techniques at each sampling site. The sampling plan shall require that sampling occur during year 3 of this License and during year 15 of the FERC License if warranted by significant or questionable results of the initial sampling or by significant improvements in the water quality or thermal regime of the Chilhowee tailwater. The sampling plan shall also require that, within six months of completion of each sampling effort, the Permittee/Licensee prepare and file with the Tennessee Department of Environment and Conservation a report documenting the results of the sampling. The Permittee/Licensee shall include with its filing copies of all comments received on the draft sampling plan and a discussion of those comments, including whether Permittee/Licensee adopted the comments or Permittee/Licensee's rationale for not incorporating the comments into the final sampling plan.
- 13) In the event that the issues related to the FERC jurisdiction over existing Tapoco Project lands lying within the current legislative boundary of GSMNP are finally resolved, as evidenced by appropriate documentation ("Final Jurisdictional Resolution"), then within six months from the date that the New License becomes Final and Non-Appealable, APGI will grant and convey a permanent conservation easement (the "Bulge Easement"), consistent with the terms of the Agreement in

Principle and the terms of the draft Settlement Agreement, to TNC on a tract south of US Highway 129, known as “The Bulge,” which lies within the current authorized legislative boundary of the GSMNP, except for a portion of this tract adjacent to the current Project boundary, which will serve as a safety, management and operational buffer for the Project and related purposes (the “Bulge Lands”) [see map developed as an attachment to the *Agreement in Principle Between Tennessee Interest Groups and Resource Agencies (TIGRA) and Alcoa Power Generating Inc. (APGI)*, parcel P-1].

In the event that the Final Jurisdictional Resolution is achieved, APGI will also grant to TNC the option to purchase the remaining fee simple interest underlying the Bulge Lands (the “Bulge Option”), in accordance with the terms of the Agreement in Principle and the terms of the draft Settlement Agreement, or as subsequently modified in any final Settlement Agreement.

- 14) Within six months from the date that the New License becomes Final and Non-Appealable, APGI will grant and convey a permanent conservation easement on current APGI non-project lands to TNC that creates a total of 200 feet of protection based on a horizontal projection as measured from the normal full pool reservoir elevation on the shorelines of the Chilhowee and Calderwood reservoirs (the “Shoreline Easement”). In certain areas, this 200-foot area will include land already protected by the Corridor Easement or already included in the Project boundary [see map developed as an attachment to the *Agreement in Principle Between Tennessee Interest Groups and Resource Agencies (TIGRA) and Alcoa Power Generating Inc. (APGI)*, Permanent Easement, 200 ft buffer (Non-Project Tapoco Property)].
- 15) In the event that the Final Jurisdictional Resolution is achieved, then within six months from the date that the New License becomes Final and Non-Appealable, APGI will grant and convey a permanent conservation easement (“Corridor Easement”) to TNC for its non-Project lands within a corridor adjacent to the Calderwood Bypass [see map developed as an attachment to the *Agreement in Principle Between Tennessee Interest Groups and Resource Agencies (TIGRA) and Alcoa Power Generating Inc. (APGI)*, parcels P-2, P-3, P-4 and P-5] (“Corridor Lands”), less APGI's retained fee simple ownership and full use of (including the right to construct, reconstruct, replace, manage, maintain, repair and operate) all powerlines, including the property upon which the powerlines are located, and rights-of-way (collectively, “Powerline Areas”) as well as properties providing access to Powerline Areas consistent with the terms of the Agreement in Principle and the terms of the draft Settlement Agreement. APGI will also grant to TNC the option to purchase the remaining fee simple interest underlying the Corridor Lands (the “Corridor Option”) in accordance with the terms of the Agreement in Principle and the terms of the draft Settlement Agreement, or as subsequently modified in any final Settlement Agreement.

- 16) So long as the fee interest in the Corridor Lands is owned by APGI or TNC and so long as the Shoreline Easement (called Tennessee Riparian Lands Easement in the Settlement Agreement) is in effect, APGI will cooperate with TWRA in maintaining public access to the Corridor Lands and the property covered by the Shoreline Easement, including access for hunting on those portions of this property not required for maintaining an adequate safety buffer between hunting activity and Project operations. In the event that any of the Conditions cited in the first sentence of paragraph B. 2) c) of the Agreement in Principle occur, APGI's responsibilities for maintaining public access to this property will cease.
- 17) In the event that the Final Jurisdictional Resolution is achieved, then within six months from the date that the New License becomes Final and Non-Appealable, APGI will grant and convey a conservation easement (the "Term Conservation Easement") to TNC, consistent with the terms of the Agreement in Principle and the terms of the draft Settlement Agreement, over all remaining APGI-owned non-project lands in Tennessee in the vicinity of the Project (the "Remaining APGI Lands") (see map, Term Easement) which shall be in effect for the term of the new license for the Project issued by FERC as a resolution of the currently on-going relicensing process (the "New License") provided that APGI or any successor-in-interest holds the New License.
- In the event that the Final Jurisdictional Resolution is achieved, then within six months from the date that the New License becomes Final and Non-Appealable, APGI will grant TNC a permanent right of first refusal to purchase some or all of the Remaining APGI Lands in accordance with the terms of the Agreement in Principle and the terms of the draft Settlement Agreement, or as subsequently modified in any final Settlement Agreement.
- 18) Construction or maintenance activities associated with project operation that are likely to release pollutants may not take place in flowing waters. Grading or excavation and fill activities shall be separated from the water column. All surface water flowing toward the grading or excavation work shall be diverted through utilization of cofferdams, berms, or temporary channels. Temporary diversion channels must be protected by non-erodible material and lined to the expected high water level. Cofferdams must be constructed of sandbags, clean rock, steel sheeting or other non-erodible material. Excavated material must be removed to a location that will prevent its reentry into any waters of the State. All stockpiles must be temporarily seeded and separated from the waters by entrenched silt fence. The silt fence must be maintained at all times.
- 19) All work shall be carried out in such a manner as will prevent violations of water quality criteria as stated in Rule 1200-4-3.03 of the Rules of the Tennessee Department of Environment and Conservation. This includes but is not limited to the prevention of any discharge, which causes a condition in which visible solids, bottom

deposits, or turbidity impairs the usefulness of waters of the State for any of the uses, designated by Rule 1200-4-4. These uses include fish and aquatic life, livestock watering and wildlife, recreation, irrigation, industrial water supply, and domestic water supply. If the division determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use or to comply with any new or amended water quality standards or other appropriate requirements of State or federal law) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, the division may reevaluate and modify this Certification to include conditions appropriate to assure compliance with such standards and requirements in accordance with *The Tennessee Water Quality Control Act of 1977* and any regulation promulgated thereunder. Before modifying the Certification, the division will notify the Permittee/Licensee and FERC and provide public notice and opportunity for public hearing in accordance with the Rules of the Tennessee Water Quality Control Board. Any new or revised conditions will be provided to the Permittee/Licensee in writing, will be provided to the U.S. Army Corps of Engineers for reference in any permit issued pursuant to section 404 of the Federal Water Pollution Control Act, 33 U.S.C. § 1344, for the project, and shall also become conditions of the License. The conditions of this Certification are not modified or superseded by any condition or article of the License.

- 20) Appropriate steps shall be taken to ensure that petroleum products or other chemical pollutants are prevented from entering waters of the state. All spills must be reported immediately to the appropriate emergency management agency. Measures shall be taken immediately to prevent the pollution of waters of the State, including groundwater.
- 21) The Permittee/Licensee is responsible to convey all terms and conditions of this permit to the contractor(s). A copy of this permit along with approved plans must be present on site during all phases of construction.

This does not obviate requirements of other federal, state or local laws. The State of Tennessee reserves the right to modify or revoke this permit or to seek modification or revocation should the State determine that the activity results in more than an insignificant violation of applicable water quality criteria or violation of the Act. Failure to comply with permit terms may result in penalty in accordance with § 69-3-115 of the Act. An appeal of this action may be made to the Water Quality Control Board. In order to appeal, a petition requesting a hearing before the Board must be filed within 30 days after receipt of the permit action. In such petition, each contention should be stated in numbered paragraphs that describe how the proposed activity would be lawful and the action of the state is inappropriate. The petition must be prepared on 8½" by 11" paper, addressed to the Water Quality Control Board and filed in duplicate at the following

address: Paul E. Davis, Director, Division of Water Pollution Control, 6th Floor L & C Annex, 401 Church Street, Nashville, Tennessee 37243-1534. Any hearing would be in accordance with T.C.A. §69-3-110 and 4-5-301 et seq. Questions concerning this certification should be addressed to Dan Eagar at 615/532-0708.

Sincerely,

Paul E. Davis
Director

APPENDIX F**NORTH CAROLINA 401 WATER QUALITY CERTIFICATION**

THIS CERTIFICATION is issued in conformity with the requirements of section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality (“DWQ”) Regulations in 15 NCAC 2H, section .0500. It is issued to Alcoa Power Generating, Inc. - Tapoco Division (“the applicant”) in Graham and Swain Counties pursuant to a revised application filed on the 19th day of February, 2003 with a revision dated March 18, 2003 (extension to October 20, 2003) to, among other things, retain the Santeetlah and Cheoah Dams on the Cheoah and the Little Tennessee Rivers.

The application provides adequate assurance that the retention of fill material into the waters of the Cheoah and Little Tennessee Rivers in conjunction with retention and operation of these dams and other project activities will not result in a violation of applicable Water Quality Standards, discharge guidelines and other applicable State laws. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your application, as described in the revised application. If you change your project, you must notify us and may be required to send us a new application for a new Certification. If the property is sold, the new owner must be given a copy of the Certification and approval letter and is thereby responsible for complying with all conditions. For this approval to be valid, you must follow the conditions listed below. The issuance of this Certification shall not exempt the applicant from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (local, state and federal) which have jurisdiction, including but not limited to applicable river buffer rules in 15A NCAC 2B .0200, erosion and sedimentation control requirements in 15A NCAC Chapter 4 and under the Division’s General Permit NCGO10000, and any requirements pertaining to wetlands under 15A NCAC 2B .0200, 15A NCAC 2H .0500 and 15A NCAC 2H .1300.

Conditions(s) of Certification:

1. The Applicant shall release aquatic base flows from Santeetlah Dam in the magnitude and for the duration described in Table 1. The Applicant shall determine the aquatic base flow for each month by calculating the average daily inflow (AIM) value for the preceding three months. The Applicant shall calculate the ADI using its recorded measures of daily change in reservoir elevation and total discharge (generation flows plus

instream flow releases, high flow event releases and flood discharge flows). If the ADI is greater than the historic 25th percentile average flow for that month (Table 2), the Applicant shall release flows according to Tier A. If the ADI is less than or equal to the historic 25th percentile average flow for that month, the Applicant shall release flows according to Tier B.

Each Friday, the Applicant shall project inflow for the next ten days, which is the “planning period.” The water requirement for the planning period is the volumetric sum of base flows; high flow event releases, if any; flood discharge flows, if any; Santeetlah Reservoir

Operating Curve increase, if any; and generation. The water available for the planning period is the volumetric sum of storage above the Santeetlah Reservoir Operating Curve and the planning period projected inflow. During normal operations, generation will be adjusted to maintain Santeetlah Reservoir elevations at or above the Santeetlah Reservoir Operation Curve. Except as necessary to meet other requirement of this Certification, such as aquatic base flows and the Santeetlah Reservoir Operating Curve, generation is not restricted for normal operations.

In order to allow state and federal agencies to complete the collection of three full years of baseline data in the Cheoah River below Santeetlah Dam, subject to the determination of the Federal Energy Regulatory Commission (“FERC”) in issuing a new license for P-2169, the Applicant shall release aquatic base flows starting September 1, 2005 or starting in the month after the effective date of the License, whichever is later.

Table 1. Aquatic base flow releases from Santeetlah dam into the Cheoah River.

Month	Flow Rate (cfs)	
	Tier A	Tier B
January	50	50
February	100	90
March	100	90
April	100	90
May	90	80
June	60	60
July	60	50
August	50	40
September	50	40
October	50	40
November	50	40
December	60	50

Table 2. Historic 25 percentile average flow for Cheoah River

Month	Threshold Flow (cfs)
January	256
February	446
March	484
April	615
May	617
June	526
July	403
August	289
September	208
October	141
November	116
December	148

2. The Applicant shall provide high flow events, which follow a repeating five-year schedule for the term of the License according to Table 3.

In order to allow state and federal agencies to collect three full years of baseline data in the Cheoah River below Santeetlah Dam, subject to the determination of FERC in issuing a new license for the project, the Applicant shall provide high flow events starting September 1, 2005 or in the month after the effective date of the License, whichever is later.

Table 3. High flow releases for the Cheoah River.

High Flows	Year 1		Year 2		Year 3		Year 4		Year 5		Magnitude (cfs) ³		
	Event s	Days	Event s	Days	Event s	Days	Event s	Days	Event s	Days	Day 1	Day 2	Day 3
January													
February	1	2	1	2	1	2	1	2	1	2	1000	Var ¹	
March	1	3	1	3	1	3	1	3	1	3	1000	600 ²	300
April	2	5	3	6	2	5	2	5	3	6	1000	850	300
May	2	4	2	4	3	6	3	6	3	6	1000	850	
June	1	2	1	2					1	2	1000	850	
July					1	2					1000	850	
August							1	1			1000		
September	1	1			1	1					1000		
October	1	1	1	1			1	1			1000		
November	1	1	1	1	1	1	1	1	1	1	1000		
December													
Total:	10	19	10	19	10	20	10	19	10	20			

¹ 600 cfs from hour 15 to hour 19, 400 cfs from hour 20 to hour 34; 200 cfs from hour 35 to hour 47; 100 cfs for hour 48

² 600 cfs from hour 16 to hour 36; 300 cfs from hour 37 to hour 48

³ 12:00 a.m. (midnight) shall be the starting point for determining the appropriate time for initiating and changing flow releases

- a. The Applicant shall release high flows via the Tainter gates at Santeetlah Dam. The Applicant shall use the headwater elevation of Santeetlah Reservoir to determine the gate opening necessary to make the required high flow release from Santeetlah Dam. The Applicant shall use the downstream gage at Bearpen Gap during the initial system set up to confirm the required gate positions to make the flow releases;
 - b. The Applicant shall schedule high flow events on weekend days (Saturday and Sunday); schedule three day events on Saturday, Sunday and Monday;
 - c. The Applicant shall schedule the March event for the third weekend in March and the November event for the first weekend in November;
 - d. The Applicant shall schedule one 3-day high flow event in April in years 1, 3, and 4 of the repeating sequence;
 - e. The Applicant shall ramp high flow events at 2-inches per hour for flows between the aquatic base flow and 100 cfs. The Applicant shall use the downstream gage at Bearpen Gap during the initial system set up to confirm the required gate positions and gate frequencies in order to ramp the high flow events;
 - f. For 2-day events in February, the release duration is 4 hours for day 1; releases are targeted to begin at hour 11;
 - g. For 1-, 2-, and 3-day events in March through November, the release duration is 8 hours for the day 1 high flow releases; releases on day 1 are targeted to begin at hour 8 in March, April, October, and November, and at hour 9 in May through September;
 - h. For 2-day events in April through July, the release duration is also 8 hours for the day 2 high flow releases; releases on day 2 are scheduled to begin at hour 8 in April and at hour 9 in May, June, and July;
 - i. For 2-day events in April through July, after the end of the 8 hours of high flow on day 1, the flow will be reduced to 500 cfs until the beginning hour of high flow on day 2;
 - j. The Applicant shall schedule single day high flow events between September and November with a minimum of 10 days between events.
 - k. The Applicant will provide 12 months prior notice to the U.S. Fish and Wildlife Service (USEWS), the U.S. Forest Service (USFS), the North Carolina Wildlife Resources Commission (NCWRC), the North Carolina Department of Environment and Natural Resources (NCDENR), the Eastern Band of Cherokee Indians (EBCI), and Graham County of the proposed schedule of high flow events.
3. The Applicant shall convene an annual planning meeting in early October of each year which shall include NCDENR, NCWRC, USFS, USFWS and EBCI. If NCDENR, NCWRC, USFS, USFWS and EBCI notify the Applicant prior to the annual meeting that they have determined by consensus that unanticipated circumstances have arisen that

indicate that additional aquatic habitat enhancement would result from the reallocation of waste previously committed to the aquatic base flows and/or high flow event schedule as required in Conditions 1 and 2, then the Applicant shall discuss with these entities the reallocation of water for aquatic habitat enhancement purposes within the aquatic base flow regime and/or the high flow event schedule for the year. The Applicant shall cooperate with NCDENR, NCWRC, USFS, USFWS, and EBCI in implementing any requested water reallocation, with due consideration given to the following factors.

- a. Any reallocation requests shall be based on periodic (*i.e.* every several years) re- evaluations of aquatic conditions in the Cheoah River by the above-listed entities;
- b. Any requested reallocation shall be designed to minimize any additional lost generation (either in lost megawatts and/or lost value) and operating costs;
- c. Under no circumstances shall water allocated as part of the aquatic base flow regime be utilized for high flow events and vice versa; nor shall water from one year be reallocated to any other calendar year;
- d. Any requested reallocation of water must be able to be accommodated with the gate structures in existence at that time;

If agreement is reached on reallocation, the Applicant shall take all reasonable and necessary actions to implement the agreement on reallocation. The Applicant shall make a filing with FERC requesting the approval of the requested revised allocation of flows for that calendar year, and upon FERC approval will implement the revised aquatic base flow regime and/or high flow event schedule.

4. Starting in October 2010, in conjunction with the annual planning meeting required in Condition 3 above, the Applicant will consult with USFWS, USFS, NCWRC, NCDENR, EBCI and Graham County regarding the possibility of providing additional high flow events on a trial basis in addition to the high flow events contemplated in the repeating five year schedule included in Condition 2 above.

If, NCDENR notifies the Applicant that they are in full concurrence that biological recovery in the Cheoah River has proceeded to a point that additional high flow events should be scheduled and evaluated on a trial basis, then the Applicant will consult with USFWS, USFS, NCWRC, NCDENR., EBCI and Graham County, to determine the specific number, magnitude and timing of such additional trial high flow events.

In the event that the Applicant and NCDENR agree on the provision of additional trial high flow events, then no later than 60 days prior to the anticipated start of the additional high flow events, the Applicant shall file for FERC approval a plan of the proposed revisions to the repeating five year schedule of high flow events.

In conjunction with the subsequent annual planning meetings, the Applicant will consult with the USFWS, USFS, NCWRC, NCDENR, and EBCI in order to determine whether to terminate, continue, or modify the additional trial high flow events, or to recommend to FERC a permanent change in the repeating five year schedule of high flow events. The determination shall be based on USFWS, USFS, NCWRC, NCDENR, and EBCI's assessment of the effects of the additional trial high flow events on the Cheoah River aquatic and associated riparian biological communities, on water levels in Santeetlah Reservoir, and other water-quality related issues.

The Applicant shall make additional filings, as appropriate, notifying FERC of any additional requested revisions to the repeating five year schedule of high flow events, and upon FERC approval will implement the revised high flow event schedule.

5. If inflow is not adequate to provide high flow releases and maintain required reservoir levels while maintaining instream flows, then equitable reductions in Santeetlah Reservoir water levels, and high flow releases to the Cheoah River will be made as follows. If the water available for the planning period (as defined in Condition 1) is less than the water requirement with no generation for the scheduling period the following low flow stages will be implemented. The low flow stage will remain in effect until the next planning period when the water requirement is compared to the water available. If the water available is less than the water requirement, the next stage will be implemented. If the water available is greater than the water requirement the previous stage will be implemented or normal operations if at Stage 1. If the actual inflow is appreciably different than the projected inflow the Applicant may make adjustments to the low flow stage during the planning period.

Stage 1: Reduce high flow duration by 25% (2 hours for each day of the high flow event). Elevation minimum decreased by 0.25 feet below operating curve.

Stage 2: Reduce high flow duration by 50% (4 hours for each day of the high flow event). Elevation minimum decreased by 0.50 feet below the operating curve.

Stage 3: Reduce high flow duration by 100%. Elevation minimum decreased by 0.75 feet below the operating curve.

Stage 4: Elevation minimum decreased by 1.0 feet below operating curve. If continuous discharge is at Tier A reduce continuous discharge from Tier A to Tier B level.

Stage 5: Continue releasing Tier B continuous discharge through spillway gates until elevation reaches bottom of the spillway gates (or valve).

Stage 6: Reduce continuous discharge to inflow.

Based on actual experience, the Applicant may consult with state and federal agencies to modify the Low Inflow Protocol. If agreement is reached with NCDENR on modifying the protocol, the Applicant shall make a filing with FERC requesting approval of the proposed modification and upon FERC approval will implement the modified protocol.

6. The Applicant shall continue funding the existing U.S. Geological Survey (USGS) Bearpen Gap gage (Station No. 0351706800) on the Cheoah River below Santeetlah Dam. Additionally, the Applicant shall install and maintain a calibrated staff gage, or the equivalent, at the Joyce Kilmer Bridge to allow for the visual confirmation of Cheoah Rivers flows. The Applicant shall also make available the calculated release to the Cheoah River at the Santeetlah darn on an hourly basis via the Internet.

7. Prior to the completion of the gate modifications required in Condition 8 below, the continuous base flow release shall consist of a flow of approximately 50 cfs released through an existing Tainter gate at Santeetlah Dam. Prior to the completion of the Tainter gate automation required in Condition 8 below, high flow events shall be made with consideration of the following factors:

- a. Releases from November 1 through March 31 will be scheduled to occur during the regular work week (Monday through Friday) to minimize additional personnel costs associated with releases on weekends using the existing gates and related equipment; releases from April 1 through October 31 will occur on weekends;
- b. Releases will be initiated using the “Year 1” release schedule in Table 3 and subsequent years will use “Year 2”, “Year 3” etc.;
- c. Ramping rates will not apply;
- d. The Applicant shall make reasonable effort to provide the high flow events according to the high flow event schedule in Table 3, however some variation in terms of actual timing of events may occur during this interim period until the gate modifications are complete.

8. To accommodate release of the aquatic base flow and high flow events, the Applicant shall add “piggy-back” gates to, and automate, either two or three of the existing Tainter gates on Santeetlah Dam within 24 months of the effective date of the new license. The Applicant may deviate from the Santeetlah Operating Curve, the aquatic base and high flow releases during the winter drawdown period to allow for

construction in the field of the modified Tainter gates. Within 90 days of the effective date of the new license, the Applicant shall file, for approval by FERC, a plan and schedule for modifying the Tainter gates.

9. The Applicant shall operate Santeetlah Reservoir according to the following operating rules except when operating under the Low Inflow Protocol (Condition 5):
 - a. From January 1 to March 1, the elevation of Santeetlah Reservoir shall not drop below elevation 1931 ft.
 - b. From March 1 to April 1 the elevation of Santeetlah Reservoir shall not drop below the line between elevation 1931 ft. on March 1 and elevation 1936 ft. on April 1.
 - c. From April 1 to June 23, the elevation of Santeetlah Reservoir shall not drop below elevation 1936 ft.
 - d. From June 23 to July 1 the elevation of Santeetlah Reservoir shall not drop below the line between elevation 1936 ft. on June 23 and elevation 1937 ft. on July 1.
 - e. From July 1 to September 8, the elevation of Santeetlah Reservoir shall not drop below elevation 1937 ft.
 - f. From September 8 to September 16 the elevation of Santeetlah Reservoir shall not drop below the line between elevation 1937 ft. on September 8 and 1936 ft. on September 16.
 - g. From September 16 to November 1, the elevation of Santeetlah Reservoir shall not drop below elevation 1936 ft.
 - h. From November 1 to December 1 the elevation of Santeetlah Reservoir shall not drop below the line between elevation 1936 ft. on November 1 and elevation 1931 ft. on December 1.
 - i. From December 1 through December 31, the reservoir elevation shall not drop below elevation 1931-ft.

10. The Applicant shall monitor the elevation of Santeetlah Reservoir on an hourly basis using a water level sensor located upstream of the gatehouse, on the upstream face of the intake. The Applicant shall electronically transmit the water level data recorded by the sensor to the dispatcher's office in Alcoa, Tennessee. The Applicant shall make available Santeetlah Reservoir elevation data on an hourly basis via the Internet.

Based on actual experience, the Applicant may consult with interested parties on the actual water level results at Santeetlah from the management practices implemented. The Applicant may implement only minor adjustments of the Santeetlah Reservoir Operating Curve, and only after such consultation and approval by the North Carolina Division of Water Quality (DWQ).

11. During emergencies and for planned project maintenance or inspection activities, the Applicant may vary from the reservoir operating curve, vary flows below the required aquatic base flows or lake levels, or vary from the high flow release schedule. Under such conditions, the Applicant shall notify the NCDENR, NCWRC, USFS and USFWS in writing and via telephone according to the following schedule. For planned project maintenance or inspection activities, the Applicant shall notify said agencies no less than 15 days prior to the variance. For unforeseen circumstances required by an operating emergency, the Applicant shall notify the same agencies in writing as soon as practical, but not more than 7 days after the beginning of the event. If requested by DWQ, the Applicant shall expeditiously consult with any concerned agency to discuss the Applicant's emergency, maintenance and inspection activities, and the Applicant shall give due regard to any agency's recommendations. In lieu of the aforesaid requirements in this paragraph, the Applicant may develop and implement a protocol to manage reservoir levels and flows during emergency, maintenance and inspection activities. If DWQ determines that any recurring variances may have an adverse effect on water quality, DWQ may require the Applicant to develop and implement a protocol to minimize the impacts of the Applicant's emergency, maintenance and inspection activities on water quality. No protocol will become effective without approval by DWQ. The Applicant shall take all reasonable and necessary actions to implement any such protocol.

12. The Applicant shall identify and report in writing existing and proposed consumptive uses to DWQ and the N.C. Division of Water Resources (DWR). The Applicant shall report the existing or projected (as appropriate) average consumptive withdrawal and maximum capacity for each withdrawal. The Applicant shall report existing consumptive uses to DWQ and DWR within 60 days of the acceptance of the License and shall report proposed new or expanded consumptive uses to DWQ and DWR within 30 days of receiving a request for the proposed new or expanded withdrawal and before submitting any requests to FERC.

13. The Applicant shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with section 303(d) of the Clean Water Act, 33 U.S.C. § 1313(d)) and any other appropriate requirements of State law and federal law. If DWQ determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use or to comply with any new or amended water quality standards or other appropriate requirements of State or federal law) or that State or federal law is being violated, or that further conditions are necessary to assure compliance,

DWQ may reevaluate and modify this Certification to include conditions appropriate to assure compliance with such standards and requirements in accordance with 15A NCAC 2H.0507(d). Before modifying the Certification, DWQ will notify the Applicant and FERC, provide public notice in accordance with 15A NCAC 2H.0503 and provide opportunity for public hearing in accordance with 15A NCAC 211.0504. Any new or revised conditions will be provided to the Applicant in writing, will be provided to the U.S. Army Corps of Engineers for reference in any permit issued pursuant to section 404 of the Federal Water Pollution Control Act, 33 U.S.C. § 1344, for the project, and shall also become conditions of the License. The conditions of this Certification are not modified or superseded by any condition or article of the License.

14. This Certification does not grant or affirm any property right, license or privilege in any waters or any right of use in any waters. This Certification does not authorize any person to interfere with the riparian rights, littoral rights or water use rights of any other person, and this Certification does not create any prescriptive right or any right of priority regarding any usage of water. No person shall interpose this Certification as a defense in any action respecting the determination of riparian or littoral rights or other water use rights. No consumptive user is deemed by virtue of this Certification to possess any prescriptive or other right of priority with respect to any other consumptive user regardless of the quantity of the withdrawal or the date on which the withdrawal was initiated or expanded. This Certification issues on the express understanding of DENR that, pursuant to Federal Power Act section 27, 16 U.S.C. § 821, the License does not establish or determine a proprietary right to any use of water. It establishes the nature of the use to which a proprietary right may be put under the Federal Power Act.

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and civil penalties or other enforcement action. This Certification shall become null and void unless the above conditions are made conditions of the FBRC Permit. This Certification shall expire upon expiration of the FERC permit.

If this Certification is unacceptable to you, you have the right to an adjudicatory hearing upon written request within sixty (60) days following receipt of this Certification. This request must be in the form of a written petition conforming to Chapter 150B of the North Carolina General Statutes and filed with the Office of Administrative Hearings, P.O. Box 27447, Raleigh, N.C. 27611-7447. If modifications are made to an original Certification, you have the right to an adjudicatory hearing on the modifications upon written request within sixty (60) days following receipt of the Certification. Unless such demands are made, this Certification shall be final and binding.

This is the 8th day of November 2004
DIVISION OF WATER QUALITY

S/ by John R. Dorney

Alan Klimek, P.E. Director

Certification Number 3447 modified

APPENDIX G

II. FOREST SERVICE SECTION 4(e) PROVISIONS

Condition No. 1 - Implementation and Modification of Forest Service Conditions

The following conditions are based on the Agreement in Principle signed on September 8, [2004]³⁵ between the U.S. Forest Service, APGI, federal and state resource agencies, and other stakeholders in the licensing process. The Forest Service, upon completion of the settlement agreement process, may require modification of the 4(e) conditions to be consistent with the final settlement agreement. The Commission reserves the right, after notice and opportunity for hearing, to require changes in the project and its operation based on Forest Service modifications of the 4(e) conditions.

Condition No. 2 - Approval of Changes

Notwithstanding any license authorization to make changes to the project, the licensee shall get written approval from the Forest Service prior to making any changes in the uses of project lands and waters that directly affect National Forest System lands or resources, or any departure from the requirements of any approved exhibits filed with the Commission. Following receipt of such approval from the Forest Service and at least 60 days prior to initiating any such changes or departure, the Licensee shall file a report with the Commission describing the changes, the reasons for the changes, and showing the approval of the Forest Service for such changes. The licensee shall file an exact copy of this report with the Forest Service at the same time it is filed with the Commission. This article does not relieve the Licensee from the amendment or other requirements of Article 2 or Article 3 of this License.

Condition No. 3 - Consultation

Each year during the 60 days preceding the anniversary date of the license, the Licensee shall consult with the Forest Service with regard to measures stipulated to ensure the protection and utilization of National Forest System lands directly affected by the operation of the project. Within 60 days following such consultation, the Licensee shall file with the Commission evidence of the consultation with any recommendations made by the Forest Service. Based on this consultation, the Forest Service reserves the right to

³⁵ Year added by FERC Staff

petition the Commission regarding proposed changes in the project and its operation that may be necessary to ensure adequate protection and utilization of the land and related resources in accordance with approved Land and Resource Management Plans.

Condition No. 4 through Condition No. 8 [deleted]

Condition No. 9 - Mitigation Trust Fund

Starting with the year in which APGI is granted a new license for the Tapoco Project, APGI will establish a trust fund by contributing the amount of \$100,000 in year one of the new license and \$25,000 annually thereafter, adjusted annually for the Gross Domestic Product Implicit Price Deflator, for the duration of the term of the New License, minus three years at the end of the license term, to mitigate the continuing environmental and social impacts associated with the Project's operations, in particular the Santeetlah and Cheoah developments, and the portion of the Calderwood Development in North Carolina, on the Cheoah River and Little Tennessee River during the new license term. The fund will be structured to accommodate any restrictions on how funds intended for use by or on behalf of the federal agencies must be handled and shall, to the extent allowed by law, be managed by agreement of the resource agencies (NCWRC, NCDENR, USFS, and USFWS). Funds will be available to the NCWRC, NCDENR, USFS and USFWS for monitoring of biotic and abiotic parameters, addition of large woody debris and gravel management in the Cheoah River below Santeetlah Dam, and for other natural resource stewardship activities, including but not limited to, threatened and endangered species recovery efforts, control of exotic species and environmental outreach and education directly related to those Cheoah River and Little Tennessee River basin resources affected by ongoing Tapoco Project operations.

Use of APGI funds for activities not directly related to ongoing Project operations will require unanimous consent of the resource agencies and APGI. A primary objective of the board will be to use the APGI funds to leverage other funding (for example, through matching requirements) to expand the benefits of the combined funding in the Cheoah River and Little Tennessee River watershed. Mechanisms for managing this fund will require further negotiation amongst APGI and the other signatories to the Agreement in Principle and will be included in the final agreement.

This annual APGI funding commitment represents APGI's total financial obligation for measures related to ongoing operation of the Project in North Carolina, in particular the Santeetlah and Cheoah developments, and the portion of the Calderwood Development

located in North Carolina, on the Cheoah River and Little Tennessee River during the new license term, other than as specifically required for providing the Santeetlah Reservoir levels and the Cheoah River base and high flows and related gaging as set forth above.

Notwithstanding the annual funding limitation, APGI shall continue to be responsible for any fines, penalties or other costs that may be assessed in conjunction with the enforcement of State or federal law or permit(s) issued thereunder, including the terms of the new license. Detailed language concerning APGI's responsibilities under those laws or permit(s) will be incorporated into the final settlement agreement.