



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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January 4, 2006

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SUBJECT: Draft License Application for the Yadkin Hydroelectric Project (FERC No. 2197)
Davidson, Davie, Montgomery, Rowan, and Stanly Counties, North Carolina

Dear Mr. Ellis:

The U.S. Environmental Protection Agency (EPA) has reviewed your Draft License Application (DLA) dated October 2005 for the federal relicensing of the Yadkin Hydroelectric Project, Federal Energy Regulatory Commission (FERC) Project Number 2197, located in the Yadkin-Pee Dee River Basin in Davidson, Davie, Montgomery, Rowan, and Stanly Counties, North Carolina. The Project is owned by Alcoa Power Generating Inc. (APGI), a wholly-owned subsidiary of Alcoa Inc. (Alcoa). APGI's Yadkin Division (Yadkin) is responsible for operation of the Project.

The Yadkin Project includes four hydroelectric dams with associated reservoirs in central North Carolina. The four hydroelectric developments, High Rock, Tuckertown, Narrows, and Falls, are located on a 38-mile stretch of the Yadkin River. High Rock Reservoir, the most upstream development, is located at mile 253 on the Yadkin River and serves as the principal storage facility for the entire Yadkin-Pee Dee River. Tuckertown, Narrows, and Falls Developments are located approximately 8.7 miles, 16.5 miles, and 19.0 miles downstream, respectively, of the High Rock Development. Progress Energy owns and operates two downstream hydropower facilities, Tillery and Blewett Falls, the licensing of which is occurring concurrently with the Yadkin Project. Tillery and Blewett Falls are located approximately 15 and 43 miles downstream, respectively, of the Falls Development.

EPA's statutory responsibilities in the FERC relicensing process include our role in accordance with the National Environmental Policy Act (NEPA) and overall administration of the Clean Water Act (CWA), which establishes a national goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters to provide for the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water. EPA's primary interests throughout this process have been to work to improve water quality in reservoirs, major tributaries, tailrace areas, and downstream river reaches and restore or increase downstream flows to better protect aquatic life. In particular, EPA is interested in continuing

long-term reservoir and downstream water quality monitoring to determine compliance with state water quality standards. Another EPA role in this process includes strong support and assistance to North Carolina and South Carolina in the CWA Section 401 Water Quality Certification process.

EPA has participated in APGI's enhanced-traditional FERC relicensing process since its inception in 2002 and is a designated Participant to the settlement agreement proceedings, as defined by the Meetings and Negotiations Protocol for the Yadkin Project. We have been involved with several issue advisory groups related to the development of specific study plans and have conducted reviews and submitted comments on draft study reports. Based on our review of the DLA, EPA supports some of the elements included in the DLA, particularly the proposed project modifications to increase dissolved oxygen (DO) concentrations and enhance water quality in the four Project tailwaters. However, we offer some additional comments to improve the current application and better address the FERC relicensing interests identified previously.

Water Quality

Section E.2.3 includes a fairly thorough summary of the final water quality monitoring study report. However, EPA recommends inclusion of summary tables in Section E.2.3.1.1 to show the monitoring results of various water quality parameters in the reservoirs and tailraces (similar to those presented in the study report). In addition, a summary table should be included that identifies the number and percentage of samples and days that violated state water quality standards, particularly related to DO violations in the tailraces. This information is important to include as there are significant violations of state water quality standards below all four dams.

As new measures to improve water quality, APGI proposes to undertake a series of Project modifications designed to increase DO concentrations and enhance water quality in the four Project tailwaters. The concept of APGI's proposed DO enhancement program will be to first increase DO concentrations below Narrows and High Rock dams and then to monitor to see what DO enhancements might still be needed at Tuckertown and Falls dams. APGI proposes to refurbish/upgrade Narrows Units 1 and 3 and High Rock Units 1, 2 and 3 between 2008 and 2012. There is no mention of any specific timeframes for DO improvements at Tuckertown or Falls, other than on an as needed basis, depending on the outcome of monitoring. EPA assumes that those improvements would occur in accordance with the proposed refurbishment and upgrade schedule included in Exhibit C (Tuckertown and Falls unit upgrades before the end of 2020). There is no information included in the DLA that suggests how this schedule was developed. This should be included in the Final License Application (FLA), including the estimated capital costs of the planned refurbishments and upgrades.

EPA supports this overall approach for a DO enhancement program. However, EPA recommends an expedited improvement schedule that would include the installation of aeration technology at High Rock and Narrows by 2011, with continued monitoring to determine the effectiveness of aeration on water quality below Tuckertown and Falls. If it is determined that additional turbine DO enhancements are needed at Tuckertown and Falls, these enhancements

should be completed by 2014. Water quality DO standards should be met at all developments by 2014.

The proposed future operation of the installed aeration technology at High Rock and Narrows is unclear. Exhibit B suggests that APGI will operate the aerating equipment between May 1 and November 30 of each year, as needed. What is meant by “as needed?” EPA concurs with the APGI proposal in Exhibit E that suggests APGI will continue to operate Narrows Unit 4 with both aeration valves open between May 1 and November 30 of each year to enhance tailwater DO conditions. However, EPA recommends a stronger commitment than “endeavor to use as practicable” Unit 4 on a “first on-last off” basis. This should become a regular part of the operations plan described in Exhibit B, including the operation of similar aeration technology as they are installed on the other generating units at Narrows and High Rock. This inconsistency should be addressed in both exhibits in the FLA.

With regards to monitoring, EPA recommends that APGI develop and implement an approved Quality Assurance Project Plan as part of the overall long-term water quality monitoring plan. This should hopefully ensure that any water quality monitoring data can be used in basinwide assessments and Total Maximum Daily Load (TMDL) development by the State of North Carolina. EPA would be happy to work with APGI to help identify the appropriate locations for long-term monitoring devices.

The Reservoir Fish and Aquatic Habitat Assessment Final Report included field mapping efforts to identify areas of significant erosion throughout the Project. Significant erosion was defined in the final study scope as areas that are observed to have active and ongoing erosion and observable impacts to important aquatic and terrestrial resources. This included: 1) areas where eroding shoreline has resulted in localized sediment deposits that are noticeably affecting water quality or aquatic habitats; 2) areas where eroding shoreline has resulted in the loss of vegetation from a significant community or habitat type; and 3) areas where eroding shoreline are impacting public recreation facilities. The report identified nearly 11 miles of areas of significant shoreline erosion throughout the Project, 85% of which was identified around High Rock Reservoir (which has 65% of the total project shoreline). This suggests that the historical (and proposed future) operations at High Rock are likely a contributing factor to the excessive shoreline erosion found throughout this reservoir. None of this information was included in the DLA and should be appropriately summarized in the FLA, including new measures to mitigate for these project-related impacts. EPA suggests mitigation for this operational effect by enhancing the shoreline stewardship program or creating a habitat enhancement program designed to restore some of these critical degraded shoreline areas.

Instream Flows

The APGI Yadkin Project and Progress Energy Yadkin-Pee Dee Project operations have significant control over instream flows in the Pee Dee River below Tillery and Blewett Falls entering South Carolina. Flows from these two projects are highly variable and frequently much lower than would occur under unregulated conditions. While the Progress Energy Project has most direct control over flows in these two riverine reaches, the major component of flow entering that Project is delivered from the APGI Project. Therefore, operation of the two

Projects together determines the amount and variability of flows in these critical reaches of the lower Pee Dee River.

The DLA indicates that, under normal flow conditions, APCI is proposing to operate the Yadkin Project with a year round weekly average minimum release for Falls Reservoir of 900 cubic feet per second (cfs). EPA is concerned that this operation schedule will not provide adequate downstream flows for Progress Energy to release sufficient flow for instream needs below Tillery and Blewett Falls. A number of methods are being used in the relicensing process to determine the appropriate levels of instream flows needed to protect downstream uses. Analyses are in progress to identify appropriate instream flows for aquatic habitat and diadromous fish migration. EPA has been somewhat involved in the instream flow study being conducted for the two projects and supports the flow recommendations of the North Carolina Division of Water Resources and South Carolina Department of Natural Resources. Based on these recommendations, it appears that higher releases from Falls with greater frequency than weekly average will be required. Until hydrologic modeling can demonstrate that downstream flow targets and reservoir levels can be maintained with a particular delivery interval, EPA's recommendation would be that flows released from Falls dam be provided on a daily average, rather than weekly. Additional evaluation utilizing the OASIS and/or CHEOPS operations models is needed to ensure sufficient water is delivered in such a manner that resource needs are met for reservoir levels and flows downstream of Tillery and Blewett Falls.

The DLA also indicates APCI plans to operate in accordance with a low instream flow protocol (LIFP) that has not yet been completed. The development of a LIFP is needed to quantify the magnitude, frequency and duration of low flow events to determine critical low flows necessary to continue to meet water quality standards and aquatic life use support. EPA supports the development of a LIFP in consultation with state and federal agencies, non-governmental organizations, and other water users within the basin.

Lake Levels

The DLA proposes an operating guide for High Rock that includes a "Hard Guide Curve" (drawdown limited to within 6 feet of full pond April 1 through October 31 and within 12 feet of full pond November 1 through March 31) except as needed to meet required downstream minimum flows or as outlined in the proposed LIFP, or in cases of system emergencies. The DLA also proposes a "Soft Guide Curve" for the same months and a soft "Recreation Season Guide Curve" from April 15 to September 15. Narrows Reservoir will be operated as it has in the past, typically maintaining reservoir water levels within 3 feet of full pond with a "Hard Curve" ability to go to 6.6 feet below normal full pond. Tuckertown and Falls would be operated as they have in the past.

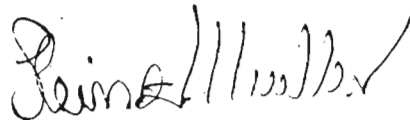
EPA is concerned that this operation schedule will negatively impact important littoral aquatic habitat, particularly in High Rock and Narrows. EPA supports a drawdown plan proposed by a number of state and federal agencies that includes a rule curve for High Rock and Narrows with an operating band (drawdown) of 3 feet below full pool in the spring, summer and fall; and an operating band of 6 feet below full pool in the winter. This approach will serve to inundate the majority of the high quality littoral aquatic habitat in both reservoirs, which is found

within the first two to four feet of the reservoir. This will also benefit wetland habitat types on both reservoirs. The operating curves for Tuckertown and Falls should be the same as current. Significant drawdowns of High Rock Lake drastically decrease the amount of year-round aquatic habitat area and can influence the relative abundance of fish species and their forage base of aquatic invertebrates. Other water quality related impacts of this include erosion of the drawdown zone between maximum pool elevation and winter pool elevation due to raindrop impact forces on bare unvegetated soils and from mass wasting of saturated soils from the drawdown action; and erosion of the shorelines at winter pool elevations, which may erode bare unvegetated shorelines (see previous comments on shoreline erosion).

Since 1997, APCI has worked with the North Carolina Wildlife Resources Commission (NCWRC) to develop a voluntary mode of reservoir operation that is designed to enhance fish spawning at the Yadkin Project reservoirs. During the prime fish spawning season (usually April 15 to May 15), APCI makes every effort to maintain reservoir water levels within + 1 foot of the elevation of the reservoir on April 15. APCI proposes to continue a similar mode of operation during the fish spawning season throughout the term of a new Project license. Based on recent recommendations by NCWRC, EPA supports expansion of this operating protocol for the period of March 1 through May 31, with a stronger implementation commitment than "voluntary." This expanded and dedicated operations protocol should maximize spawning success in the shallow water portions of the reservoirs, which provide the prime habitat for spawning.

EPA will continue to participate in the relicensing effort and is hopeful that continued discussion on these issues will result in a new FERC license that will allow successful operation of the APCI and Progress Energy hydroelectric facilities to protect water quality and restore or increase flows to better protect aquatic life in the Yadkin-Pee Dee River in both North Carolina and South Carolina. We appreciate the opportunity to participate in the Yadkin Project relicensing proceedings and provide comments on the DLA. We look forward to continued involvement in the overall process. If you have any questions or concerns about our comments, please contact Ben West at (404) 562-9643 or west.ben@epa.gov.

Sincerely,



Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management

cc: John Ellis – U.S. Fish and Wildlife Service
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