

# **COVER SHEET**

**FEDERAL ENERGY REGULATORY COMMISSION**

**FINAL ENVIRONMENTAL IMPACT STATEMENT  
FOR THE YADKIN AND YADKIN-PEE DEE RIVER  
PROJECTS**

**Docket Nos. P-2197-073 and 2206-030**

**Executive Summary**

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**FEIS**

## EXECUTIVE SUMMARY

This final environmental impact statement (final EIS) evaluates the potential effects on the environment associated with relicensing the four developments that make up the 210-megawatt (MW) Yadkin Hydroelectric Project No. 2197 (Yadkin Project) and the two developments that make up the 108.6-MW Yadkin-Pee Dee River Hydroelectric Project No. 2206 (Yadkin-Pee Dee River Project). The six developments of these two projects are located on the Yadkin and Yadkin-Pee Dee rivers in Davidson, Davie, Montgomery, Rowan, Stanly, Anson, and Richmond counties in central North Carolina. The current licenses will expire on February 10, 2008.

On April 25, 2006, Alcoa Power Generating, Inc. (Alcoa Generating) filed a license application with the Federal Energy Regulatory Commission (FERC or the Commission) for the Yadkin Project.

Carolina Power and Light, now operating as Progress Energy Carolinas (Progress Energy), filed a license application with the Commission for the Yadkin-Pee Dee River Project on April 26, 2006. Progress Energy's Yadkin-Pee Dee River Project is located on the Pee Dee River immediately downstream of the Yadkin Project.

Alcoa Generating filed an Agreement in Principle in June 2006, and Progress Energy filed an Agreement in Principle in September 2006. Both applicants requested that we consider measures included in these agreements as their proposed actions, which we did in our scoping documents. Subsequently, Alcoa Generating filed a comprehensive Offer of Settlement (Yadkin Settlement) with the Commission on May 17, 2007, and Progress Energy filed a comprehensive Offer of Settlement Agreement (Yadkin-Pee Dee Settlement) with the Commission on July 30, 2007. Both settlement agreements replace the proposed actions outlined in the Agreements in Principle and become the proposed measures evaluated in the EIS. The terms of the settlement agreements<sup>7</sup> include a wide range of environmental protection and enhancement measures.

In this final EIS, we analyze and evaluate the environmental effects associated with the issuance of new licenses for the existing and proposed hydropower projects, and we recommend conditions for inclusion in any licenses issued. For any licenses issued, the Commission must determine that the projects would be best adapted to a comprehensive plan for improving or developing the waterway. In addition to the power and development purposes for which licenses are issued, the Commission must give equal consideration to energy conservation and the protection and enhancement of fish and wildlife, aesthetics, cultural resources, and recreational opportunities. This final EIS

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<sup>7</sup>The settlement agreements are available on the Commission's website from the eLibrary feature at <http://www.ferc.gov/docs-filing/elibrary.asp>. Accession numbers are 20070507-5011 (P-2197) and 20070730-5021 (P-2206).

reflects the staff's consideration of these factors for the Yadkin and Yadkin-Pee Dee River Projects.

Under the Proposed Action for the Yadkin Project, Alcoa Generating would (a) maintain higher minimum reservoir water levels at High Rock reservoir during both the summer and winter months and reduced water level fluctuation during fish spawning periods; (b) provide a higher daily average minimum flow below the Falls development; (c) implement a Low Inflow Protocol and a Hydro Project Maintenance and Emergency Protocol in cooperation with Progress Energy and others; (d) monitor dissolved oxygen (DO) in the tailwaters; and (e) upgrade existing and add new recreational facilities. In addition, Alcoa Generating would develop and implement new or revised plans for flow and reservoir water elevation monitoring; rare, threatened, and endangered species management; historic properties management; recreation management; transmission line corridor management; and shoreline management. These environmental measures are described in detail in table 1 in section 2.2.3.1, *Proposed Environmental Measures: Yadkin Project*, of this final EIS.

Staff modified some of the measures proposed by Alcoa Generating in the Yadkin Settlement, and identified additional measures that we include in the Staff Alternative. These measures would have Alcoa Generating: (a) develop a sedimentation and flood protection plan that includes specific measures to ensure dredging of sufficient volume and frequency such that the city of Salisbury's water intake remains clear of sediments, physical modifications to the facilities such as a protective dike for the pump station, improved access to the pump station with the road consistent with the city of Salisbury's design specifications, or other feasible options for achieving a mutually beneficial and cost effective resolution to flood protection (e.g., relocating the pump station or providing an alternative emergency water supply); planning level capital and operation and maintenance cost estimates for all alternatives; and a recommendation as to which alternative to implement; (b) develop a flood protection plan for the Grant Creek wastewater treatment plant that provides flood protection measure that may include maintenance dredging, physical modifications to the existing facility such as installation of a flood protection berm and roadway modifications, or other feasible options for achieving a mutually beneficial and cost effective resolution to flood protection; and planning level capital and operation and maintenance cost estimates for all alternatives; (c) install equipment and implement measures designed to enhance DO conditions in the project tailwaters; (d) operate the generating units with DO enhancement equipment added on a first-on, last-off basis from no later than May 1 through November 30 of each year, subject to review and adjustments based on monitoring; and (e) develop and implement a DO monitoring plan for continuous monitoring in all four tailraces from May 1 through November 30 of each year. Staff's revised and additional recommended measures are described in section 2.3.3.1, *Staff's Modification to the Proposed Actions: Yadkin Project*, of this final EIS.

Under the Proposed Action for the Yadkin-Pee Dee River Project, Progress Energy would implement (a) higher minimum reservoir water levels and reduced water

level fluctuation during fish spawning periods; (b) higher minimum flows downstream of the Tillery and Blewett Falls developments; (c) a Low Inflow Protocol in cooperation with Alcoa Generating and others; (d) compliance monitoring of project operations; (e) the Yadkin-Pee Dee River Diadromous Fish Passage Plan Agreement (Fish Passage Agreement) to provide for fish passage for American shad and American eel at the Blewett Falls development; (f) a historic properties management plan; (g) upgrades to existing recreation facilities and construction of new facilities; (h) restrictive covenants on project lands along Blewett Falls reservoir for conservation purposes; and (i) a shoreline management policy for Blewett Falls reservoir. These environmental measures are described in detail in table 2 in section 2.2.3.2, *Proposed Environmental Measures: Yadkin-Pee Dee River Project*, of this final EIS.

Staff has modified some of the measures proposed by Progress Energy in the Yadkin-Pee Dee Settlement and identified additional environmental measures that we include in the Staff Alternative. These measures would have Progress Energy (a) develop and implement a shoreline erosion plan for Blewett Falls reservoir; (b) prepare and implement a diadromous fish monitoring plan; (c) develop and implement a bald eagle management plan that provides for annual monitoring; (d) develop and implement a Yadkin River goldenrod monitoring plan; (e) provide additional lighting and feasibility study for overnight campsites at the Pee Dee access area; (f) provide additional vault toilets, trash receptacles, lighting, and feasibility study for overnight campsites at the Grassy Islands access area; (g) provide a port-a-john at the Blewett Falls tailrace access area; (h) develop and implement a plan that provides an additional public access area on the west side of Blewett Falls reservoir; and (i) conduct a recreational boating study, and monitor boating use in the reach downstream of the Tillery dam as part of the proposed recreation flow release plan. Staff's revised and additional recommended measures are described in section 2.3.3.2, *Staff's Modification to the Proposed Action: Yadkin-Pee Dee River Project*, of this final EIS.

The Yadkin-Pee Dee Settlement includes measures to place restrictive covenants on and provide shoreline buffers along non-project lands downstream of the Blewett Falls development. We do not include these measures in the Staff Alternative because they affect lands that are currently outside the project boundary and are not needed for project purposes.

Under section 18 of the Federal Power Act, the U.S. Department of the Interior, on behalf of the U.S. Fish and Wildlife Service (FWS), and the National Marine Fisheries Service (NMFS) filed preliminary fishway prescriptions that differed in the types of facilities and timing for installation of the facilities than the fish passage facilities proposed by Progress Energy. Progress Energy filed alternative 4(e) prescriptions in response to the FWS and NMFS preliminary prescriptions. On September 12, 2007, Progress Energy, FWS, NMFS, North Carolina WRC, and South Carolina DNR signed the Fish Passage Agreement and Progress Energy withdrew its request for trial-type hearing and its proposed alternative prescriptions. On December 17, 2007, FWS filed a modified prescription for fishways that is consistent with the Fish Passage Agreement.

On February 5, 2008, NMFS also filed a modified fishway prescription that it states supports the Fish Passage Agreement, which is included as an attachment to the modified prescription.

We discuss the proposed, preliminary, and alternative fish passage including the Fish Passage Agreement measures in section 3.3.3, *Aquatic Resources*, of this final EIS.

Overall, the measures proposed by Alcoa Generating and Progress Energy under the terms of the Yadkin and Yadkin-Pee Dee Settlements, along with additional staff-recommended and revised measures, would protect and enhance existing water use, water quality, fish and wildlife, land use, aesthetics, recreational, and cultural resources.

The existing Yadkin Project generates an average of 814,306 megawatt-hours (MWh) annually, valued at \$35,322,770 (43.38 mills/kWh). The annual cost of producing this energy is \$24,845,270 (30.51 mills/kWh), which is \$10,477,500 (12.87 mills/kWh) less than the cost of the most likely alternative source of power. Under Alcoa Generating's proposal, the project would generate about 947,100 MWh annually, valued at \$40,309,100 (42.56 mills/kWh). The annual cost of producing this energy would be \$37,460,450 (39.55 mills/kWh), which would be \$2,828,650 (3.01 mills/kWh) less than the cost of alternative power. Adding the cost of the measures that were adopted by staff to the cost of the Proposed Action, the Staff-recommended Alternative would generate an average of 940,000 MWh of electricity annually, have an annual power value of \$39,965,530 (42.52 mills/kWh), and total annual costs of \$40,142,630 (42.70 mills/kWh), which is \$177,100 (0.18 mills/kWh) more than the cost of the most likely alternative source of power.

The existing Yadkin-Pee Dee River Project generates an average of 370,100 MWh annually, valued at \$15,957,500 (43.12/MWh). The annual cost of producing this energy is \$7,416,460 (20.04 mills/kWh), which is \$8,541,040 (23.08 mills/kWh) less than the cost of the mostly likely alternative source of power. Under Progress Energy's proposal, the project would generate about 362,900 MWh annually, valued at \$15,317,500 (42.21 MWh). The annual cost of producing this energy would be \$9,288,950 (25.60 mills/kWh), and would cost \$6,028,550 (16.61 mills/kWh) less than the cost of alternative power. Progress Energy's proposal with the staff-recommended modifications identified above would generate an average of 362,900 MWh of electricity annually; have an annual power value of \$15,317,500 (42.21 mills/kWh); and total annual costs of \$9,330,900 (25.71 mills/kWh), which is \$5,986,600 (16.50 mills/kWh) less than the cost of alternative power.

Based on our independent analysis of the Yadkin Project and the Yadkin-Pee Dee River Project, including our consideration of all relevant economic and environmental concerns, we conclude that issuing new licenses for the Projects as proposed by Alcoa Generating and Progress Energy, along with staff's modifications and additions to those proposals, would be best adapted to a comprehensive plan for the proper use, conservation, and development of the Yadkin and Pee Dee rivers.