

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426
March 17, 2010

OFFICE OF ENERGY PROJECTS

Project No. 485-063 – Georgia
and Alabama
Bartletts Ferry Hydroelectric
Project
Georgia Power Company

Charles H. Huling P.E., Vice President
Georgia Power Company
Environmental Affairs
241 Ralph McGill Boulevard, N.E., BIN 10221
Atlanta, GA 30308-3374
Attn: George A. Martin

**Reference: Study Plan Determination for the Bartletts Ferry Hydroelectric
Project**

Dear Mr. Huling:

Pursuant to 18 CFR § 5.13(c) of the Commission's regulations, this letter includes my study plan determination for the Bartletts Ferry Hydroelectric Project. This determination is based on staff's review of the revised study plan, comments on the proposed and revised study plan, and all other elements of the record.

While many issues associated with your proposed and revised study plan have been resolved, some unresolved issues remain. This letter includes modifications to your revised study plan necessary to resolve the outstanding issues, which are discussed in Appendix A. A list of the approved studies is attached as Appendix B.

Background

On October 19, 2009, you filed your proposed study plan, which included a total of eight studies for geology and soils resources, aquatic resources, wildlife resources, botanical resources, wetlands, threatened and endangered species, recreation and land use resources, and cultural resources. On November 17, 18, and 19, you held study plan meetings in Salem, Alabama to discuss the proposed

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study plan. On February 18, 2010, you filed a revised study plan, which modified seven of the proposed studies.

Study Plan Determination

Commission staff reviewed your proposed and revised study plans, comments on the plans, and other elements of the record. Based on that review, I am approving three of the study plans without modification and five of the study plans with modifications. I am also requiring an additional study plan to address project operations and drought management. The most significant modifications include requiring:

- an operation and drought management plan study to understand the existing project configuration, historic project flows, and project operation; and
- an increase in the number of days that water quality samples are collected in the project tailrace during June through September.

My reasons for modifying your revised study plan are explained in detail in Appendix A.

If you have any questions, please contact Janet Hutzler at (202) 502-8675.

Sincerely,

Jeff C. Wright
Director
Office of Energy Projects

Enclosures: Appendix A, Study Request Issues
Appendix B, Approved Studies

cc: Mailing List
Public File

APPENDIX A STUDY REQUEST ISSUES

Staff's Findings/Response to Comments on the Revised Study Plan

The following discusses Federal Energy Regulatory Commission (Commission) staff's findings on the revised study plan proposed by Georgia Power Company (Georgia Power) and comments on those plans based on criteria outlined in the Commission's regulations [18 CFR § 5.9(b)(1)-(7)]. Except as explained below, we concur with Georgia Power's conclusions and bases for its proposed studies and conclude that the revised study plan, as modified below, adequately addresses all study needs at this time.

1. Project Operations and Drought Management Plan Study

Scoping Document 2 states that we will prepare an environmental assessment which includes an assessment of "operation of the project during the recent droughts, low flow operations, drought operations, and evaluating the need for a drought management plan." We have reviewed the PAD; the Bartletts Ferry Operations Primer filed with the PAD; comment letters from Joe Maltese, the Apalachicola Riverkeeper, and the West Point Coalition concerning water allocation and cumulative effects; and Georgia Power's responses to these comments filed with the February 2010 revised study plan, and determined that the record currently provides insufficient information for us to conduct our analysis. Therefore, we are requiring that the following additional study be included in your study plan. The information will be used in our subsequent analysis to address water allocation and cumulative effects. As required in section 5.9 of the Commission's regulations, we have addressed the seven study request criteria for the study request which follows.

Criterion (1) – Describe the goals and objectives of each study proposal and the information to be obtained.

The goal of this study is to provide information in the record sufficient to understand the existing project configuration, historic project flows, and project operation. This information will enable us to assess the potential for the Bartletts Ferry Project to utilize existing storage in its reservoir (Lake Harding) and to supplement flows downstream of the project during periods of severe drought. The information is necessary to support our analysis of the need for a drought management plan at the Bartletts Ferry Project, should it be determined that such a plan is in the overall public interest. The following information is needed.

1. A detailed presentation of the physical characteristics of the Bartletts Ferry Project to include: (1) normal full pond water surface elevation, minimum pond elevation, maximum pond elevation, target elevation or target range for project operation; (2) critical elevations for any large water intake in the reservoir or other water use which may be affected by fluctuating water elevations; (3) the pool elevation, water surface area, and storage for the top of the dam, top of spillgates, top of power pool, spillway crest, flood control storage, power storage, and dead storage; (4) the elevation of the turbine intakes and minimum elevation in which generation is no longer feasible; and (5) area-capacity curve and elevation-capacity curve in graphic and tabular format.
2. Historic flow and water surface elevation data for three representative drought years, including the drought year 2007. For each year provide water surface elevations and inflow and outflow for Lake Harding in daily time steps. The information should be provided in graphic and tabular format.
3. Georgia Power's Operational Primer for the project provides general information on how the project currently operates, including historical reservoir elevations. The project currently balances the rolling 7-day average inflow and outflow so that on a weekly basis project inflow and outflow are about the same. Please provide a more detailed discussion of project operation to address the following:
 - (a) the current license requirements for day-to-day operation and reservoir levels, or lack of these requirements, needs to be explicitly stated so that we clearly understand the existing license requirements of the project;
 - (b) Georgia Power proposes to continue the current project operation, but the critical operation parameters are not stipulated. Georgia Power's operations proposal needs to be quantified and presented in a manner which is easily transferred into an enforceable license article. The proposed operation needs to identify the proposed mode of operation, reservoir elevations which will be maintained, and provisions for the periodic fall drawdowns. The operation proposal should also include provisions for determining whether the project is in compliance with the proposed operation and reservoir elevation limits. Finally, Georgia Power should

consider developing an operating reservoir elevation rule curve which includes compliance limits; and

- (c) Georgia Power needs to provide justification as to why licensing to elevation 510 feet mean sea level (msl) is necessary. Georgia Power currently can drawdown to elevation 510 feet msl, and proposes to continue this provision. The project, however, has effectively maintained a higher elevation (i.e., about 519-522 feet msl) throughout the year. Operating flexibility during unusual circumstances is typically accomplished by temporary waiver of the license requirement, and a decision to grant the waiver is based on the information available at that time.

Criterion (2) – If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resources to be studied.

Not applicable. The information will be used to support Commission staff's analysis.

Criterion (3) – If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study.

Sections 4(e) and 10(a) of the Federal Power Act require that the Commission give equal consideration to all uses of the waterway on which a project is located. When reviewing a proposed action, the Commission must consider the environmental, recreational, fish and wildlife, and other non-developmental values of the project, as well as power and developmental values.

Criterion (4) – Describe existing information concerning the subject of the study proposal and the need for additional information.

The existing information is limited to the PAD, Bartletts Ferry Operation Primer, and Georgia Power's response to comments on its revised study plan. These documents provide graphic summaries of the reservoir minimum and maximum water surface elevations, inflow duration curves, and a general description of project operation. There is no documentation in the record that contains detailed information on the Bartletts Ferry Project's reservoir physical characteristics or storage limits, or specific data on flows and operation during representative drought years.

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Criterion (5) – Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements.

We have determined that there is sufficient nexus between project operation (or alternative modes of operation) and several important resources such as reservoir recreation, hydropower generation, and downstream fish and wildlife resources. The Bartletts Ferry Project is not operated in strict run-of-river mode (i.e., instantaneous inflows equal instantaneous outflows), exhibits regular reservoir fluctuations up to 2 feet, and has 62,000 acre-feet of storage which could be utilized under alternative operations. Therefore, the project can potentially directly influence flows downstream from the project, and the reservoir elevations can be managed in a manner which affects important reservoir resources. The information requested would help us evaluate the feasibility of a change in operations at the Bartletts Ferry Project; identify the potential benefits of requiring a drought management plan, which includes a measure to utilize existing storage to supplement flows downstream of the project; and assist us in determining if such a plan is in the overall public interest.

Criterion (6) – Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.

Not applicable. The study requires providing existing information and no analysis is being requested.

Criterion (7) – Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.

No other studies have been proposed to address alternative modes of operation or drought management. The study consists of collecting existing historical and baseline information on the physical characteristics and operation procedures for the Bartletts Ferry Project. We estimate that assembling and preparing information, as requested in criterion (1), into a report would cost less than \$10,000.

Activity

Deadline

File Progress Report

July 30, 2010

File Final Study Report

January 18, 2011

2. **Geology and Soils Study**

Study Issue 1 – Methodology

Georgia Power proposes to record geographic coordinates of each visual shoreline assessment site via a portable Global Positioning System (GPS) unit and take digital photographs of *representative shorelines* within the project boundary, including any active erosion problem areas as well as least-disturbed shoreline conditions. We accept this approach to documenting the locations and conditions of each shoreline study site. However, we modify the methodology so as to include digital photos of all 60 reservoir shoreline study sites as well as the 2 tailrace shoreline sites (i.e., one on each side of the Chattahoochee River). Digital photos of each shoreline study site would provide a visual record of the existing physical conditions at each site. In combination with the qualitative and quantitative data collected during the shoreline reconnaissance survey, the digital photos would yield useful information upon which the Commission could base a licensing decision or inform the Commission in the development of license conditions (Study Criteria 5).

Study Issue 2 – Products of the Study

Georgia Power proposes to submit a study report compiling the data gathered from the shoreline reconnaissance survey and present analysis developed through the use of existing information and data. Ratings of shoreline characteristics and reservoir elevation fluctuation data would be summarized in graphical formats. No further detail on the graphical formats was provided.

We concur with this approach but modify the study plan to specify the anticipated graphical formats of the study results to be presented in the initial study report. The data formats should include, but not be limited to, the following: (1) color copies of photos taken at each shoreline survey site labeled with the site identification number; (2) color map(s) displaying the GPS coordinates of each shoreline survey site; and (3) tables and/or figures compiling the results of the shoreline reconnaissance survey forms and the aerial photography review. These data formats would yield useful information upon which the Commission could base a licensing decision or inform the Commission in the development of license conditions (Study Criteria 5).

3. Water Resources

Study Issue 1 – Study Area

Georgia Power proposes to study the effects of continued project operations on water resources in: (1) Lake Harding; (2) the tailrace within the project boundary; (3) the Chattahoochee River upstream of the project to the West Point Lake Dam; (4) tributary watersheds to the project reservoir and; (5) the Chattahoochee River downstream to the Goat Rock dam.¹

Columbus Water Works, in a letter filed March 4, 2010, recommends that the study area be expanded downstream beyond the Goat Rock dam in order to examine downstream effects from the Bartletts Ferry Project flows at the U.S. Geological Survey (USGS) stream flow gage at Columbus, GA (USGS gage no. 02341500). Columbus Water Works states that there must be sufficient water flowing in the Chattahoochee River to assimilate wastewater discharges.

The Columbus stream flow gage is located downstream of the Middle Chattahoochee Project (FERC No. 2177), thus flows at the Columbus gage are more directly related to operation of that project. An environmental assessment (EA) was issued for the Middle Chattahoochee Project on April 22, 2004, and a license was issued on December 27, 2004, which addresses project operation and minimum flows for the Middle Chattahoochee Project. The environmental analysis conducted for the Middle Chattahoochee Project relicense would likely provide adequate information to examine Columbus Water Works' issue. Therefore, we find that Georgia Power's plan, to study the effects of continued project operations on water resources in the Chattahoochee River downstream to the Goat Rock dam, is adequate.

As part of its final Water Resources Report, to be filed on January 18, 2011, we are requiring Georgia Power file copies of the EA and License for the Middle Chattahoochee River Project and a copy of the following report referenced in the 2002 Applicant Prepared Environmental Analysis for the Chattahoochee Project: CH2M HILL. 2001a. *Flow study report, Middle Chattahoochee Project (FERC No. 2177)*. Resource Study Report prepared for Georgia Power. August 2001.

¹ Goat Rock development is the first development of the Middle Chattahoochee Project (P-2177).

Study Issue 2 – Hourly Monitoring of Reservoir During Summer Peaking Event

During a normal summer hydropower peaking event between July and August 2010, Georgia Power proposes to measure hourly vertical profiles of dissolved oxygen (DO) and water temperature at 1 meter intervals throughout the water column at eight different locations in the project reservoir. This information would be collected to examine any changes in the water quality of the reservoir before, during, and after the passage of hydropower flows through the reservoir. In addition, this information would support the Gulf striped bass summer habitat analysis described in the Fish and Aquatic Resources Study Plan.

We accept Georgia Power's proposal to hourly monitor the reservoir's DO following the cycle of operation under normal summer peaking conditions. When combined with the proposed monthly sampling and historic water quality monitoring data, this information should qualitatively describe any water quality changes occurring as flows move through the reservoir during the summer critical period. However, we remind Georgia Power that additional monitoring may be required if temperature or water levels are abnormal due to unusual weather conditions, or if sampling on a single day proves insufficient to adequately describe the water quality in Lake Harding during the summer peaking event.

Study Issue 3 – Hourly Monitoring of Tailrace During Summer Peaking Event

During a normal summer hydropower peaking event between July and August 2010, Georgia Power proposes to measure dissolved oxygen and water temperature across three transects in the project tailrace. The data would be aligned with: (1) summer continuous DO data collected at station GR01 during 2008 through 2010; (2) cross sectional transect DO measurements collected on over 40 separate dates from April through October 1999, which includes summer critical conditions; and (3) real-time operational data for each powerhouse collected since July 2008. This information would be collected to examine the water quality of releases from each powerhouse separately and would support the Gulf striped bass summer habitat analysis described in the Fish and Aquatic Resources Study Plan.

In its letter filed March 5, 2010, the U.S. Environmental Protection Agency (EPA) recommends that Georgia Power: (1) hold an interagency meeting when the progress report is filed; (2) conduct a limited desktop analysis of the exiting generating units to determine the potential for utilizing equipment modifications (e.g., vacuum breakers, stay vanes) to increase DO concentrations in project discharges; and (3) increase the number of samples collected in the project tailrace

to seven days occurring consecutively or during different months during the summer critical period (June through September).

We accept Georgia Power's proposal to monitor DO and temperature hourly along three transects in the project tailrace area during the summer peaking event to examine the water quality of releases from each powerhouse separately. We also agree with EPA that hourly sampling along the three tailrace transects on a single day is insufficient to adequately describe water quality conditions. Additional monitoring is necessary for scientific accuracy and to account for the possibility of abnormal temperature or water levels that may occur due to unusual weather conditions or other operating abnormalities. Therefore, Georgia Power should increase the number of samples to seven days, occurring anytime during the critical summer period (June through September). This information would be used to inform the Commission's licensing decision and development of appropriate license requirements (Study Criteria 5). At this point, it is premature to request mitigation for DO concentrations in the tailrace. If the progress report (to be filed October 26, 2010) or the final study report (to be filed January 18, 2011) demonstrates that DO is being affected by project operations, then we may request that Georgia Power evaluate the units at Bartletts Ferry Project to determine if any changes to project operations are necessary.

We do not see the need for an interagency meeting at the time of the release of Georgia Power's progress report in October 2010. The stakeholders will have an opportunity to comment on the progress report and any concerns about the results can be addressed at that time.

During the study plan meeting on November 17, 2009, the EPA requested additional information about historic water quality data collected in the Bartletts Ferry Project tailrace. We would like to point out to all stakeholders that some of this information is available on the Commission's e-library web page² under the Middle Chattahoochee Project record (P- 2177), including: (1) a summary report of water quality data collected in the tailrace from 1999 through 2007,³ (2) a summary of water quality monitoring conducted from 1999 through 2001 reflecting drought conditions,⁴ and (3) raw water quality data collected from 2005

² <http://www.ferc.gov/docs-filing/elibrary.asp>.

³ See Georgia Power Company's, *Applicant Prepared Environmental Assessment for Hydropower License for the Middle Chattahoochee Project (FERC No. 2177)*, page 33-34 and appendix E, filed December 13, 2002.

⁴ See Georgia Power Company's, *Final Report, Dissolved Oxygen Monitoring in Upper Goat Rock Reservoir, 1999-2007*, filed May 5, 2008.

through 2007.⁵ However, we request that Georgia Power file copies of the following two reports referenced in the 2002 Applicant Prepared Environmental Analysis for the Middle Chattahoochee Project: (1) CH2M HILL. 2001b. *Water resources, Middle Chattahoochee Project (FERC No. 2177)*. Resource Study Report prepared for Georgia Power. March 2001; and (2) Ruane, J. 2002. *Assessment of low dissolved oxygen concentrations observed in the tailrace of Bartlett's Ferry Dam*. Prepared for Georgia Power. April 17, 2002. These reports should be filed as part of the final Water Resources Report.

4. Fish and Aquatic Resources

Study Issue 1 – Shoal Bass Spawning Habitat Surveys

In its letter filed January 19, 2010, the Georgia Department of Natural Resources - Wildlife Resources Division (Georgia WRD) recommends that Georgia Power conduct two additional fish sampling events from May through mid-June in the tailrace area to identify shoal bass spawning activity (for a total of three sampling events) and one sampling event in mid-July to identify age-0 shoal bass recruitment. Additionally, the Georgia WRD recommends that two reference sites where shoal bass are known to occur, such as Mulberry Creek or Riverview shoals, be sampled with the same methodologies to help validate collection methods and compare catch rates.

Georgia Power proposes to conduct two surveys during the May to mid-June 2010 timeframe, to specifically target and document potential shoal bass spawning habitats within the project boundary. Up to five locations would be sampled during each survey event, including the project tailrace, Riverview shoals, and the lower reaches of Flat Shoals Creek, Mountain Oak Creek and/or Halawakee Creek where the shoal bass enter the project reservoir. These two surveys would supplement the more detailed fisheries survey planned for Spring/Summer 2010. Georgia Power does not propose to survey Mulberry Creek for shoal bass, as requested by the Georgia WRD, because it is outside the project boundary and is not a tributary to the project reservoir. Georgia Power, however, does propose to survey Riverview shoals and use this area as a reference site.

We agree with Georgia Power's proposed addition of two fish surveys. These additional surveys will help determine if project operations, such as reservoir fluctuations, affect shoal bass spawning and movement. However, we

⁵ See Georgia Power Company's, *CD containing Dissolved Oxygen Monitoring Data for 2005–2007*, filed June 4, 2008 (Accession No. 20080610-0221).

are concerned that these surveys may not occur during the period when age-0 shoal bass are present in the project area and, therefore, there will be little, if any, information available to address concerns about shoal bass recruitment. This information would be used to inform the Commission's licensing decision and development of appropriate license requirements (Study Criteria 5). Therefore, the study is modified to include an additional shoal bass survey during the mid-July timeframe to target the age-0 year class. The more detailed fishery survey planned for Spring/Summer 2010 can be used, provided that it accounts for sampling during the mid-July timeframe.

With regard to reference reaches, we note that Mulberry Creek is outside the project boundary and has no direct connection to the Bartlett Ferry Project. However, Riverview shoals alone would likely not adequately represent reference conditions for shoal bass spawning habitat. Although it is a known location for shoal bass, this area is inside the project boundary and likely is affected by the operation of the Bartlett's Ferry Project. Therefore, in consultation with the Georgia WRD, identify one additional reference site, in addition to Riverview shoals, that is not influenced by project operations (e.g., Mulberry Creek or some other suitable location where shoal bass are known to occur). This information would be used to inform the Commission's licensing decision and development of appropriate license requirements (Study Criteria 5).

5. Wildlife and Botanical Resources Study

Study Issue 1 – Products of the Study

Georgia Power proposes to prepare a wildlife and botanical resources study report and provide it to stakeholders for review and comment at the conclusion of the one year study period. In the study report, Georgia Power proposes to compile the information gathered from the field survey, provide the review of existing information and data, and summarize its upland management techniques within the project boundary.

We accept Georgia Power's proposed products but modify the study plan to specify what the summary of upland management techniques should include. The summary of upland management techniques should: (1) clearly describe each land and vegetation management technique; (2) identify the locations where each technique is used; and (3) provide the acreage for each technique that is currently implemented or proposed within the project boundary. This information would help to determine how Georgia Power's maintenance of the Bartletts Ferry Project may effect wildlife and botanical resources and thereby provide useful information upon which the Commission could base a licensing decision or inform the Commission in the development of license conditions (Study Criteria 5).

6. Cultural Resources

Georgia Power propose that the area of potential effect (APE) for archeological resources include: (1) the area between a low water pool elevation and the 521-foot contour, which defines the boundary for much of the project and (2) the parcels added to the project in 1993 as mitigation land, located primarily on Osanippa Creek. For historic resources, Georgia Power proposes that the APE include the: (1) immediate area around the dam, powerhouses, and operations areas; (2) surrounding viewshed; and (3) the project works within the project boundary.

At the study plan meetings, we informed Georgia Power that the Georgia State Historic Preservation Officer (SHPO) and the Alabama SHPO needed to concur with the proposed APE and methodology referenced in section 9.5 of the revised study plan prior to any surveys being conducted. Appendix C of the revised study plan contains information that the Georgia and Alabama SHPOs have reviewed the methodology and determined it is adequate, but there is no documentation that the Georgia and Alabama SHPOs have concurred with the proposed APEs for archeological and historic resources. Therefore, we modify the study plan so that prior to any surveys being conducted, Georgia Power should consult with the Georgia and Alabama SHPOs and seek concurrence on the proposed APEs. Please provide consultation documentation in the progress report filed in October 2010. Concurrence on the APEs from the Georgia and Alabama SHPOs would ensure that management goals of these agencies are addressed in accordance with Study Criterion 2.

**APPENDIX B
APPROVED STUDIES**

No.	Study Name
2.0	Geology and Soils (as modified)
3.0	Water Resources (as modified)
4.0	Fish and Aquatics Resources (as modified)
5.0	Wildlife and Botanical Resources (as modified)
6.0	Wetlands, Riparian, and Littoral Habitat
7.0	Rare, Threatened, and Endangered Species
8.0	Recreation and Land Use
9.0	Cultural Resources (as modified)
10.0	Project Operations and Drought Management Plan Study (staff recommended)

Document Content(s)

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