

Study Plan 4 - Water Quantity, Water Use, and Water Withdrawals

1.0 GOALS AND OBJECTIVES OF STUDY

In preliminary consultation with various agencies and stakeholders, the following issues were identified: the amount of water being withdrawn from Lake Martin and the correlation with population; limiting future water withdrawals, especially for municipalities; and accommodating/increasing permitted withdrawals for riparian use.

The goal of this study is to produce a white paper detailing Alabama Power Company's (APC) water withdrawal policy, current known water withdrawals from the Martin Project, ecological and navigational flow requirements in the Tallapoosa River basin, and drought contingency operations at the Martin Project.

2.0 RELEVANT RESOURCE MANAGEMENT GOALS

During the summer of 2007, Alabama experienced the worst drought in recorded history. During August 2007, nearly three-fourths of the state was classified as "exceptional," the highest drought level issued by the U.S. Drought Monitor. As a result of this drought, APC reservoirs experienced the lowest inflows in recorded history, which significantly curtailed hydroelectric generation at the Martin Project, except for the flows passed necessary to meet downstream requirements. Understanding how and why APC manages this water resource is imperative because of the impact that water scarcity may have on other resources at the Project.

3.0 BACKGROUND AND EXISTING INFORMATION

Over the last decade, there have been a growing number of new demands placed on APC's water resources. These additional demands have been for such uses as residential water supply, industrial growth, agriculture, recreational use, and environmental stewardship. Since large storage reservoirs provide a constant and reliable water supply, many water withdrawers have sought approval from APC to use its hydroelectric reservoirs as a source of water.

APC's existing policy was first developed in 1989 to manage water withdrawals and give consideration to the economic impacts of water withdrawals from its reservoirs. Consistent with Federal Energy Regulatory Commission (FERC) precedent on compensation for water withdrawals from federally-licensed hydroelectric projects, APC developed a water withdrawal policy designed to prevent APC's ratepayers from subsidizing the withdrawals from the reservoirs.

In 1993, the Alabama Legislature enacted the Alabama Water Resources Act, which created the Office of Water Resources (OWR). The OWR's primary purpose was to create a system for tracking the various uses of Alabama's waters. This system was intended to help the state develop plans and strategies for the management of its waters. The Alabama Water Resources Act also required that a declaration of beneficial use be submitted to the OWR by each public water system that regularly serves, individually or in combination with other such systems, more than 10,000 households and by each person who diverts, withdraws, or consumes more than 100,000 gallons of water a day from the waters of the state. Thus, this law requires

that a prospective withdrawer of water from an APC reservoir must file a declaration with the OWR.

In 2001, the OWR requested that APC implement measures to provide incentives to promote conservation of water resources. In response to this request, APC has implemented a process requiring applicants to demonstrate that they have initiated and obtained the necessary approvals from the OWR prior to granting permission to withdraw from APC's reservoirs.

[Water use and drought management have been studied in the Alabama-Coosa-Tallapoosa Comprehensive Study done in the 1990's. Data and models from that study are currently being updated to include the 2000 and 2007 droughts as part of the development of new U.S. Army Corps of Engineering basin manuals.](#)

4.0 PROJECT NEXUS

Availability of water is of utmost concern to the future operation of the Martin Project. Understanding how much water is available and the various competing interests will provide valuable information for deciding how this scarce resource is managed.

5.0 STUDY AREA AND STUDY SITES

The study area will encompass Lake Martin, APC-owned lands within the Project Boundary, and specific tributaries as they pertain to water withdrawals.

6.0 PROPOSED METHODOLOGY

The identification of water withdrawers on APC reservoirs will be accomplished through the use of secondary data sources.

6.1 Data Collection Techniques

Existing information will be used to facilitate data collection for this study. First, a request for up-to-date "Declaration of Beneficial Use" data from the OWR will be made. APC records on those withdrawals approved by the FERC will also be collected.

Other reports will be consulted during the collection of known withdrawal locations. There were a number of studies related to the Alabama-Coosa-Tallapoosa (ACT) Draft Environmental Impact Statement that will be found and reviewed (See Section 11.0). Information pertinent to APC's water withdrawal policy can also be found in the "E4-Water Quantity, Water Use and Water Withdrawals" report finalized during the Coosa/Warrior relicensing process. Other literature will be gathered and reviewed on an as needed basis.

Once a list of known withdrawal locations is complete and other existing literature has been reviewed, a draft report will be issued to Martin Issue Group (MIG) 2 for their input. Comments received from MIG-2 will be incorporated into a final report.

6.2 Data Analysis

Other than a literature review, there will be no data analysis associated with this study.

7.0 CONSISTENCY WITH GENERALLY ACCEPTED SCIENTIFIC PRACTICE

The planned study methods discussed above are consistent with the methods followed in the Coosa and Warrior relicensing projects and have been accepted by the federal and state agencies and other interested stakeholders in those projects.

8.0 PRODUCTS

Once this study is completed, a draft white paper detailing APC water withdrawal policy, current known water withdrawals from the Martin Project, ecological and navigational flow requirements in the Tallapoosa River basin, and drought contingency operations at the Martin Project will be available to the MIG 2 for review and comment. Upon review and discussion, a Final white paper will be filed with the Martin License Application.

9.0 SCHEDULE

APC files Final Study Plan	November 2008
Anticipated FERC Approval	April 2009
Consult with and Obtain OWR and other withdrawal data	May 2009
Report to MIG-2 for discussion	September 2009
Draft Report	February 2010
Final Report	December 2010

10.0 LEVEL OF EFFORT AND COST

APC estimates the cost of consulting on the study plan, collecting and reviewing existing information, and reporting is approximately \$25,000.

11.0 REFERENCES

Alabama Power Company (APC). 2003. Coosa/Warrior Relicensing Project: E4 – Water Quantity, Water Use and Water Withdrawals. Alabama Power Company, Birmingham, AL.

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Freeman, M. C., J. M. Nestler, and P. N. Johnson. 1997. Riverine Resources: Water Needs and Environmental Effects Analyses in the Alabama-Coosa-Tallapoosa and Apalachicola-Chattahoochee-Flint River Basins. Final Report to the Technical Coordinating Group of the ACT-ACF Comprehensive Study. U.S. Geological Survey, Biological Resources Division, Patuxent Wildlife Research Center, Athens, GA.

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