

ALABAMA POWER COMPANY BIRMINGHAM, ALABAMA

📥 Alabama Power

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ALABAMA POWER COMPANY BIRMINGHAM, ALABAMA

R. L. HARRIS HYDROELECTRIC PROJECT FERC NO. 2628

WATER QUALITY STUDY PLAN

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WATER QUALITY STUDY PLAN

1.0 INTRODUCTION

Alabama Power Company (Alabama Power) is initiating the Federal Energy Regulatory Commission (FERC) relicensing of the 135-megawatt (MW) R.L. Harris Hydroelectric Project (Harris Project), FERC Project No. 2628. The Harris Project consists of a dam, spillway, powerhouse, and those lands and waters necessary for the operation of the hydroelectric project and enhancement and protection of environmental resources. These structures, lands, and water are enclosed within the FERC Project Boundary. Under the existing Harris Project license, the FERC Project Boundary encloses two distinct geographic areas, described below.

Harris Reservoir is the 9,870-acre reservoir (Harris Reservoir) created by the R.L. Harris Dam (Harris Dam). Harris Reservoir is located on the Tallapoosa River, near Lineville, Alabama. The lands adjoining the reservoir total approximately 7,392 acres and are included in the FERC Project Boundary. This includes land to 795 feet mean sea level (msl)¹, as well as natural undeveloped areas, hunting lands, prohibited access areas, recreational areas, and all islands.

The Harris Project also contains 15,063 acres of land within the James D. Martin-Skyline Wildlife Management Area (Skyline WMA) located in Jackson County, Alabama. These lands are located approximately 110 miles north of Harris Reservoir and were acquired and incorporated into the FERC Project Boundary as part of the



FERC-approved Harris Project Wildlife Mitigative Plan and Wildlife Management Plan. These lands are leased to, and managed by, the State of Alabama for wildlife management and public hunting and are part of the Skyline WMA (ADCNR 2016b).

For the purposes of this study plan, "Lake Harris" refers to the 9,870-acre reservoir, adjacent 7,392 acres of Project land, and the dam, spillway, and powerhouse. "Skyline" refers to the 15,063 acres of Project land within the Skyline WMA in Jackson County. "Harris Project" refers to all the lands, waters, and structures enclosed within the FERC Project Boundary, which includes both Lake Harris and Skyline. Harris Reservoir refers to the 9,870-acre reservoir only; Harris Dam refers to the dam, spillway, and powerhouse. The Project Area refers to the land and water in the Project Boundary and immediate geographic area adjacent to the Project Boundary (Alabama Power Company 2018).

Lake Harris and Skyline are located within two river basins: the Tallapoosa and Tennessee River Basins, respectively. The only waterbody managed by Alabama Power as part of their FERC license for the Harris Project is the Harris Reservoir.

¹ Also includes a scenic easement (to 800 feet msl or 50 horizontal feet from 793 feet msl, whichever is less, but never less than 795 feet msl)

Background and Existing Information

An extensive amount of water quality data exists for the Harris Project. In preparation for the relicensing process, Alabama Power prepared a *Baseline Water Quality Report* (Kleinschmidt 2018c) that summarized water quality data collected by the Alabama Department of Environmental Management (ADEM) between 2005 and 2016. The report included data from six monitoring sites on Harris Reservoir, three sites on the Tallapoosa River below Harris Dam, and six sites on three streams that drain portions of Skyline.

Available data for Harris Reservoir sites consisted of vertical profiles of water temperature, dissolved oxygen, pH, and conductivity, which was collected at regular depth intervals (approximately 3 feet) from April to October in the years that samples were collected. The samples in the reservoir, Tallapoosa River, and at Skyline sites included analyses for over twenty additional parameters, such as chlorophyll *a*, nutrients, alkalinity, pathogens, and turbidity and were also summarized in the *Baseline Water Quality Report*.

The State of Alabama's 2018 303(d) list indicates Lake Harris is impaired due to mercury based on elevated levels in fish tested in 2016 (ADEM 2018). Impaired waters upstream of Lake Harris include the Little Tallapoosa River (from Wolf Creek upstream to the Alabama-Georgia state line) and the mainstem of the Tallapoosa River (from Cane Creek, near Heflin, upstream to the Alabama-Georgia state line) (ADEM 2018). Monitoring data collected in 2015 associated with Section 314 (a)(2) of the Clean Water Act show that Harris Reservoir is currently mesotrophic, which indicates that substantial nutrient loading is not occurring in the reservoir.

Little Coon Creek, which flows through portions of Skyline, is listed as impaired on Alabama's 2018 303(d) list due to siltation. According to the list, the impairment is due to non-irrigated crop production and pasture grazing. A list of impaired waters in the Project Area is provided in **Table 1-1**.

1.1 Resource Management Goals

FERC has the responsibility to evaluate project effects on water quality. The ADEM is vested with the authority to issue a Section 401 Water Quality Certification for the Harris Project to ensure that operation of the Project will not violate applicable water quality standards. Any conditions of the Water Quality Certification will become conditions of the FERC operating license. The U.S. Fish and Wildlife Service (USFWS) and Alabama Department of Conservation and Natural Resources (ADCNR) have similar goals to reduce or eliminate any water quality impacts to aquatic resources associated with the Harris Project. Both goals are relevant in protecting the public resources associated with the Harris Project.

1.2 Current Operations and Operational Alternatives

This water quality study will involve summarizing existing baseline information as well as any additional data that is collected during the study period. Any effects on water quality from potential changes in operations will be analyzed in the R.L. Harris Project Operating Curve Change Feasibility Study and in the Downstream Release Alternatives Study.

Waterbody Name	River Basin	Downstream	Upstream	Size	Туре
Little Tallapoosa River	Tallapoosa	Wolf Creek	Alabama-Georgia state line	30.78	miles
Wolf Creek	Tallapoosa	Little Tallapoosa River	its source	5.53	miles
Tallapoosa River	Tallapoosa	1/2 mile upstream of Cleburne County Road 36	Cleburne County Road 19	3.82	miles
Tallapoosa River	Tallapoosa	dam at Cleburne County Road 36	1/2 mile upstream of Cleburne County Road 36	0.44	miles
Tallapoosa River	Tallapoosa	Cedar Creek	R. L. Harris Dam	10.68	miles
Tallapoosa River	Tallapoosa	Alabama Highway 77	Cedar Creek	3.15	miles
Tallapoosa River (R L Harris Lake)	Tallapoosa	R L Harris Dam	Little Tallapoosa River	5356.95	acres
Tallapoosa River	Tallapoosa	Cane Creek	Alabama-Georgia state line	31.60	miles
High Pine Creek	Tallapoosa	Tallapoosa River	Highway 431	13.74	miles
Little Coon Creek	Tennessee	Coon Creek	Alabama-Tennessee state line	16.30	miles

 TABLE 1-1
 Impaired waters within the Project Area

Source: ADEM 2018

2.0 GOALS AND OBJECTIVES

The goal of this study is to supplement the *Baseline Water Quality Report* (Kleinschmidt 2018c) to provide a robust characterization of water quality under current conditions. Alabama Power will collect additional water quality data and compile and append that information to the *Baseline Water Quality Report*. Relevant data collected as part of this study will be used to develop Alabama Power's application for a Section 401 Water Quality Certification for the Harris Project. Alabama Power will also work with stakeholders to identify and assess potential areas of water quality concern on Harris Reservoir.

3.0 PROJECT NEXUS AND GEOGRAPHIC SCOPE

Water quality at the Harris Project is influenced by point and non-point source pollution, land use, annual hydrology, and weather patterns. It is also affected by Harris Project operations. The geographic scope for the water quality study includes the following:

- Harris Reservoir and all tributaries within its drainage area,
- Tallapoosa River from Harris Dam downstream through Horseshoe Bend, and
- Little Coon Creek and Crow Creek Watersheds at Skyline.

4.0 METHODS

For purposes of developing an application for a Section 401 Water Quality Certification, per agreement with ADEM, Alabama Power is conducting dissolved oxygen and temperature monitoring in the tailrace at the monitor placed approximately 800 feet downstream of the Harris Dam on the west bank of the river (Figure 4-1), from June 1 through October 31 (2017 through 2019). Measurements of dissolved oxygen and temperature are recorded continuously at 15-minute intervals during generation. Alabama Power will also collect monthly vertical profiles of temperature and dissolved oxygen in the Harris Reservoir forebay (**Figure 4-1**) between March and October of 2018 and 2019 to compare to historic profiles as well as profiles collected in 2017.

In addition to the monitoring to support the 401 Water Quality Certification, Alabama Power will monitor dissolved oxygen and temperature approximately 0.5 miles downstream of Harris Dam (Figure 4-1). Data will be recorded continuously at 15-minute intervals beginning March 1 through October 31, 2019. Alabama Power will also provide discharge data during the March 1 through October 31 monitoring period to allow for data comparison.

Alabama Power will work with stakeholders and resource agencies to identify areas on the reservoir where they believe degraded water quality conditions could exist and to determine if identified areas warrant further examination. Where appropriate and available, existing data will be used to assess these areas of water quality concern.

Additionally, Alabama Power will compile the water quality information available for the Harris Project collected by other credible sources, such as ADEM, U.S. Geological Survey (USGS), Auburn University, and Alabama Water Watch.



FIGURE 4-1 MONITORING LOCATION MAP

5.0 **REPORTS**

As the various components of this study are completed and available for review and comment, Alabama Power will share results with HAT 2 through written documentation and stakeholder meetings, as discussed in Section 2.0 of the PAD. Stakeholders will have between 7-30 days to review and comment on documents, depending on the document length and complexity. Additional meetings (in-person and via conference call) will be held as necessary to discuss study results and solicit stakeholder input. Draft and final reports, if applicable to the study, will be filed with FERC as well as provided to the HAT members and posted to the Harris relicensing website for access by the general public.

As part of the Integrated Licensing Process (ILP), FERC requires licensees to file two status reports: the Initial Study Report and Updated Study Report. These reports provide a status update on all the FERC-approved relicensing studies. Alabama Power will prepare these FERC reports per the requirements of 18 CFR 5.15(c) and (f).

While not required in FERC's ILP process, Alabama Power will also file two Progress Updates during the relicensing process to provide additional updates to FERC, stakeholders, and the general public on the status of the relicensing studies, any interim work products, and any draft and final reports issued. The Progress Update will also include HAT meeting summaries. The first Progress Update will be distributed (and filed with FERC) in October 2019, approximately six months prior to the Initial Study Report; the second update will be distributed (and filed with FERC) in October 2020, approximately six months prior to the Updated Study Report.

6.0 SCHEDULE

This schedule corresponds to the FERC-approved Harris Project Process Plan and Schedule. Consultation meeting dates will be finalized with HAT 2 members upon FERC approval of the study plan.

	A 12010
FERC Study Plan Determination	April 2019
Solicit input from HAT 2 on areas of WQ concern	May 2019
Forebay Monitoring	March 2019 – October 2019
Continuous Downstream Monitoring	March 2019 – October 2019
Tailrace Monitoring	June 2019 – October 2019 ²
HAT 2 Meeting on progress to date	August – September 2019
Progress Update	October 2019
Draft Water Quality Study Report to HAT 2	March 2020
Initial Study Report	April 2020
Initial Study Report Meeting	April 2020
HAT 2 Meeting(s), as needed	April 2020 – April 2021 ³
Prepare and file 401 Water Quality Certification	April 2020
Progress Update	October 2020
Final Water Quality Report	April 2021

² This schedule reflects study plan approval forward; however, Alabama Power has been monitoring since 2017.

³ Meeting dates will be determined with the HAT 2 members based on results of the initial studies.

Updated Study Report	April 2021
Updated Study Report Meeting	April 2021
File Preliminary Licensing Proposal	By July 3, 2021
File Final License Application with FERC	November 2021

7.0 COST AND EFFORT

Alabama Power estimates the cost to consult on and implement this study plan, including costs for developing the draft and final Addendum and application for Water Quality Certification, is \$615K.

8.0 **REFERENCES**

- Alabama Department of Environmental Management (ADEM). 2018. 2018 Integrated Water Quality Monitoring and Assessment Report-Water Quality in Alabama 2016-2018. Alabama Department of Environmental Management, Water Division-Water Quality Branch. Montgomery, AL.
- Alabama Department of Conservation and Natural Resources (ADCNR). 2016b. Wildlife Management Areas. Available at: <u>http://www.outdooralabama.com/wildlife-management-areas</u>. Accessed November 2016.
- Alabama Power Company. 2018. Pre-Application Document for the Harris Hydroelectric Project (FERC No. 2628). Alabama Power Company, Birmingham, AL.
- Kleinschmidt Associates. 2018c. Baseline Water Quality Report for the R.L. Harris Project (FERC No. 2628). Kleinschmidt Associates, Hoover, AL.