

April 12, 2021

VIA ELECTRONIC FILING

Project No. 2628-065
R.L. Harris Hydroelectric Project
Transmittal of the Updated Study Report

Ms. Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street NE
Washington, DC 20426

Dear Secretary Bose,

Alabama Power Company (Alabama Power) is the Federal Energy Regulatory Commission (FERC or Commission) licensee for the R.L. Harris Hydroelectric Project (Harris Project) (FERC No. 2628-065). On April 12, 2019, FERC issued its Study Plan Determination¹ (SPD) for the Harris Project, approving Alabama Power's ten relicensing studies with FERC modifications. On May 13, 2019, Alabama Power filed Final Study Plans to incorporate FERC's modifications and posted the Final Study Plans on the Harris relicensing website at www.harrisrelicensing.com. In the Final Study Plans, Alabama Power proposed a schedule for each study that included filing a voluntary Progress Update in October 2019² and October 2020³.

Pursuant to the Commission's Integrated Licensing Process (ILP) and 18 CFR § 5.15(f), Alabama Power is filing the Harris Project Updated Study Report (USR) (Attachment 1). The enclosed USR describes Alabama Power's overall progress in implementing the study plans, and summarizes the data collected and any variances from the study plan and schedule.

Concurrent with this USR filing, Alabama Power is filing:

- **Draft** *Downstream Release Alternatives Phase 2 Study Report*
- **Draft** *Operating Curve Change Feasibility Analysis Phase 2 Study Report*
- **Final** *Aquatic Resources Study Report*
- **Final** *Downstream Aquatic Habitat Study Report*
- **Final** *Erosion and Sedimentation Study Report*
- **Final** *Water Quality Study Report*
- A Botanical Inventory of a 35-Acre Parcel at Flat Rock Park, Blake's Ferry, Alabama

¹ Accession No 20190412-3000.

² Accession No 20191030-5053.

³ Accession No 20201030-5215.

- **Draft Battery Energy Storage System at R.L. Harris Project Report**

Alabama Power is reporting the following variance to schedule/methods for the following studies:

- Operating Curve Change Feasibility Analysis Phase 2 Study - While use of historic photos from Lake Harris was mentioned in the Study Plan, photos could not be used to assess the effects of the winter pool alternatives due to the limited resolution of publicly available historical photos needed to assess individual erosion areas. In addition, Alabama Power provided qualitative information (rather than quantitative information noted in the Study Plan) regarding cultural resources on Lake Harris as the analysis of cultural resources is ongoing.
- Battery Energy Storage System (BESS) Study - FERC did not request a study plan for the BESS Study but provided recommendations for the type of analysis FERC expected Alabama Power to complete. Alabama Power evaluated the BESS separately from the other downstream release alternatives and results of the analysis are presented in a separate report, rather than included in the Downstream Release Alternatives Study.
- Erosion and Sedimentation Study - Alabama Power provided the results of the *Nuisance Aquatic Vegetation Survey Report* in Appendix F of the final report rather than providing to HAT 3 in the form of a technical memorandum.
- Aquatic Resources Study - Auburn University did not use the 30+2 sampling method as it was determined in the field to not be feasible/effective for sampling the sites and instead, shallow areas were sampled using boat and barge electrofishing equipment, which were found to be effective in sampling shallow areas within the study sites. The boat method used was a modification of the recently developed non-wadeable index of biological integrity (IBI). Sampling intensity was modified to accommodate available habitat, sampling frequency, and therefore IBI scores were not calculated.
- Cultural Resources Programmatic Agreement and Historic Properties Management Plan Study - A schedule variance occurred for completing the TCP identification process with the Muscogee (Creek) Nation in April 2021 (rather than February 2021 as noted in the Study Plan).

Pursuant to 18 CFR §5.15(f), Alabama Power will host the Updated Study Report Meeting (Meeting) with stakeholders and FERC on April 27, 2021 by conference call. The Meeting will begin at 9 AM central and conclude by 12 PM central. The purpose of the Meeting is to provide an opportunity to review the contents of the USR.

Alabama Power will file the Updated Study Report Meeting Summary by May 12, 2021. Stakeholders will have until June 11, 2021, to file written comments with FERC on the USR Meeting Summary. All comments must adhere to FERC regulations at 18 CFR Section 5.15 (c)(2)-(7). All Harris studies have been completed and a proposal for new information gathering or studies is subject to paragraph (e) of Section 5.15 except

that the proponent must demonstrate extraordinary circumstances warranting approval. Stakeholders may access the USR and the individual study reports on FERC's website (<http://www.ferc.gov>) by going to the "eLibrary" link and entering the docket number (P-2628). The USR and study reports are also available on the Project relicensing website at <https://harrisrelicensing.com>.

If there are any questions concerning this filing, please contact me at arsegars@southernco.com or 205-257-2251.

Sincerely,



Angie Anderegg
Harris Relicensing Project Manager

Attachment – Updated Study Report

cc: Harris Stakeholder List

Attachment
Updated Study Report

UPDATED STUDY REPORT

R.L. HARRIS HYDROELECTRIC PROJECT

FERC No. 2628



Prepared for:

Alabama Power Company

Prepared by:

Kleinschmidt Associates

April 2021



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1.0 INTRODUCTION

Alabama Power Company (Alabama Power) owns and operates the R.L. Harris Project (FERC Project No. 2628) (Harris Project), licensed by the Federal Energy Regulatory Commission (FERC). Alabama Power is relicensing the 135-megawatt (MW) Harris Project, and the existing license expires in 2023. 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.

The following Project terms will have these meanings throughout this Updated Study Report (USR):

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).

- Lake Harris refers to the 9,870-acre reservoir, the 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.

Lake Harris Project Boundary

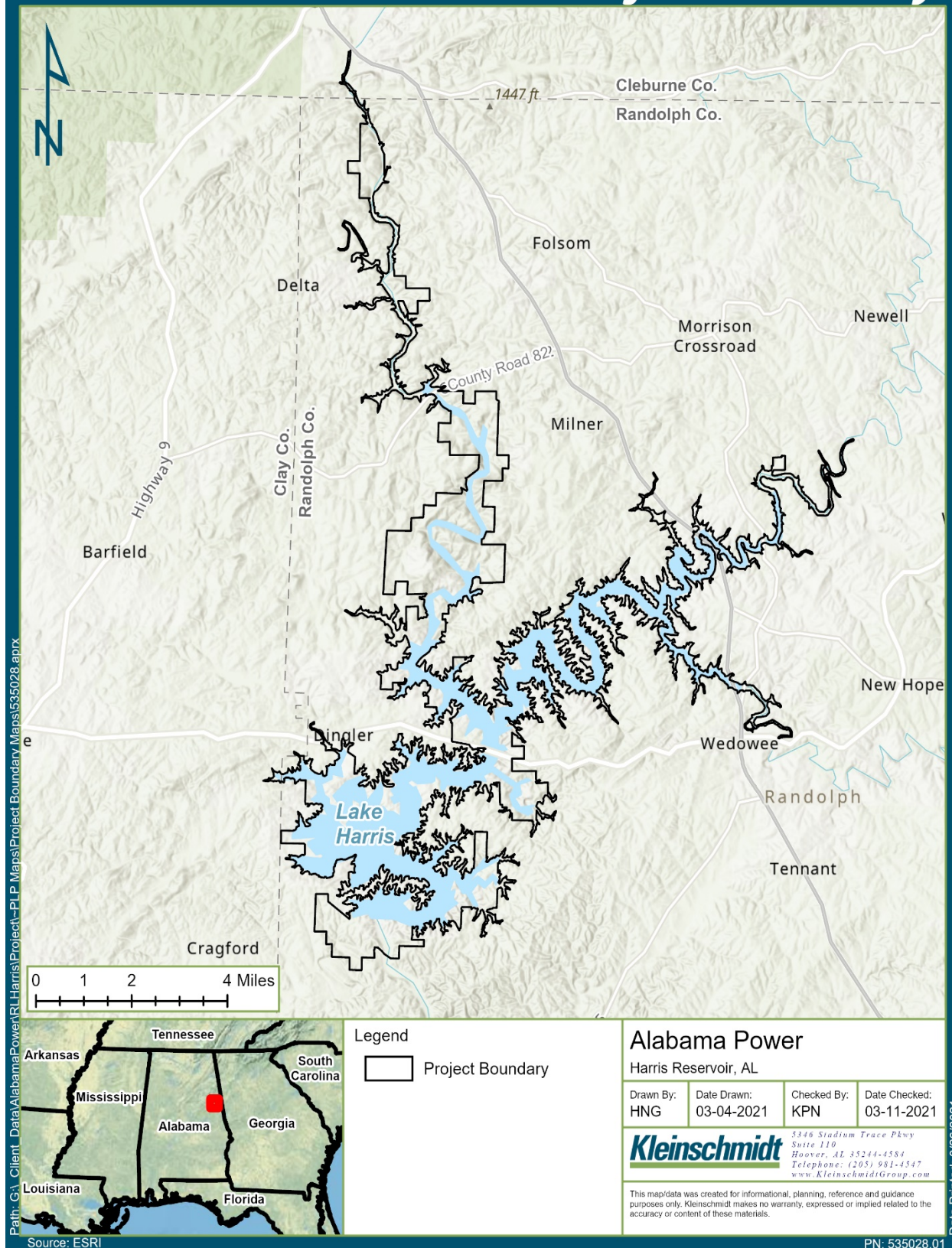


Figure 1 Lake Harris Project Boundary

Skyline Project Boundary

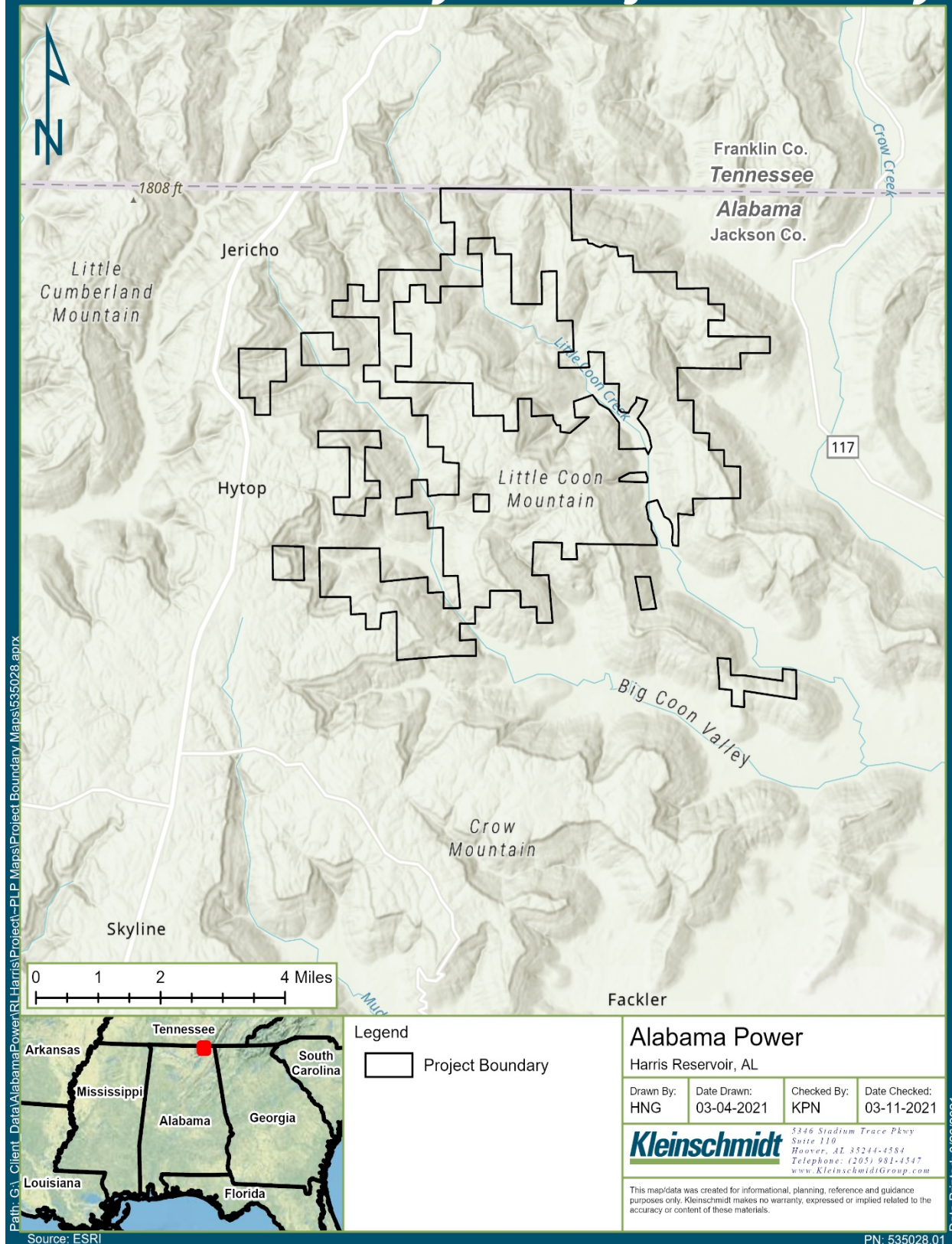


Figure 2 Skyline Project Boundary

2.0 HARRIS STUDY PLAN PROCESS OVERVIEW

During the October 19, 2017 Issue Identification Workshop, stakeholders provided information on resources that may be affected by the Harris Project. On August 28 and 29, 2018, FERC held Harris Project Scoping Meetings² to provide additional opportunities for stakeholders and the public to present and discuss any issues related to the Harris Project relicensing. On November 13, 2018, Alabama Power filed the following 10 proposed study plans for the Harris Project.

- Operating Curve Change Feasibility Analysis Study
- Downstream Release Alternatives Study
- Erosion and Sedimentation Study
- Water Quality Study
- Aquatic Resources Study
- Downstream Aquatic Habitat Study
- Threatened and Endangered Species Study
- Project Lands Evaluation Study
- Recreation Evaluation Study
- Cultural Resources Programmatic Agreement and Historic Properties Management Plan Study

Based on comments filed by stakeholders, Alabama Power filed revised study plans on March 13, 2019³. FERC issued a Study Plan Determination (SPD)⁴ on April 12, 2019, which approved Alabama Power's study plans and included FERC staff recommendations. Alabama Power incorporated FERC's recommendations and filed the Final Study Plans with FERC on May 13, 2019⁵.

Alabama Power formed the Harris Action Teams (HATs) to provide stakeholders an opportunity to work on the issues of most importance to them and, in the case of federal and state agencies, those issues where it has regulatory or statutory responsibility. The HATs include:

² Accession Nos. 20181010-4002 and 20181010-4003

³ Accession No. 20190313-5060

⁴ Accession No. 20190412-3000

⁵ Accession No. 20190513-5093

- HAT 1 – Project Operations
- HAT 2 – Water Quality and Use
- HAT 3 – Fish and Wildlife
- HAT 4 – Project Lands
- HAT 5 – Recreation
- HAT 6 – Cultural Resources

The HATs met throughout 2018, 2019, 2020, and into 2021 to discuss the various studies. All HAT meetings from April 2020 to present were held virtually due to Coronavirus 2019 (COVID-19) and related travel and public gathering restrictions.

On April 10, 2020, Alabama Power filed six of the ten draft study reports and two cultural resources documents concurrently with the Initial Study Report (ISR), which included the consultation record for each of these six reports and cultural resource documents. On August 10, 2020, FERC sent a letter to Alabama Power discussing the Determination on Requests for Study Modifications for the R.L. Harris Hydroelectric Project ⁶, recommending an additional study on a Battery Energy Storage System (BESS).

The following provides a chronological account of all Draft and Final Study Reports as well as Progress Reports filed with FERC since the ISR filing on April 10, 2020.

- **Final** *Area of Potential Effects Report* on June 29, 2020⁷
- **Draft** *Downstream Aquatic Habitat Study Report* on June 30, 2020⁸,
- **Final** *Downstream Release Alternatives Phase 1 Study Report* on July 27, 2020⁹;
- **Draft** *Aquatic Resources Study Report* on July 28, 2020¹⁰,
- **Draft** *Recreation Evaluation Study Report* on August 24, 2020¹¹.
- **Final** *Operating Curve Change Feasibility Analysis Phase 1 Study Report* on August 31, 2020¹²;
- **Final** *Phase 1 Project Lands Evaluation Study Report* on October 2, 2020¹³;

⁶ Accession No. 20200810-3007

⁷ Accession No. 20200629-5328

⁸ Accession No. 20200630-5200

⁹ Accession No. 20200727-5088

¹⁰ Accession No. 20200728-5120

¹¹ Accession No. 20200824-5241

¹² Accession No. 20200831-5339

¹³ Accession No. 20201002-5139

- Voluntary Progress Report on October 30, 2020¹⁴;
- **Final** *Recreation Evaluation Study Report* on November 24, 2020¹⁵; and
- **Final** *Threatened and Endangered Species Study Report* on January 29, 2021¹⁶.

Concurrent with this USR filing and pursuant to FERC's SPD and Determination on Requests for Study Modifications, Alabama Power is filing two draft Phase 2 study reports, four final study reports, a botanical inventory report, and the BESS Report, as follows.

- **Draft** *Downstream Release Alternatives Phase 2 Study Report*
- **Draft** *Operating Curve Change Feasibility Analysis Phase 2 Study Report*
- **Final** *Aquatic Resources Study Report*
- **Final** *Downstream Aquatic Habitat Study Report*
- **Final** *Erosion and Sedimentation Study Report*
- **Final** *Water Quality Study Report*
- A Botanical Inventory of a 35-Acre Parcel at Flat Rock Park, Blake's Ferry, Alabama
- **Draft** *Battery Energy Storage System at R.L. Harris Project Report*

The draft and final study reports include HAT meeting summaries and presentations, and documentation of consultation between April 2019¹⁷ through March 2021. Alabama Power will hold an USR meeting on April 27, 2021 and will file the meeting summary with FERC on May 12, 2021. Stakeholders may submit to Alabama Power and FERC by June 11, 2021, any disagreement concerning the USR meeting summary, and/or any modifications to any on-going studies or proposal to gather new information (18 Code of Federal Regulations (CFR), Section 5.15 (f)).

Sections 3.0 through 13.0 of this USR summarize the 11 FERC-approved studies in accordance with 18 CFR, Section 5.15, including 1) overall study progress, including data collected; 2) any variance from the FERC SPD and schedule; and 3) remaining activities and any modifications to the existing study or new studies proposed by Alabama Power.

¹⁴ Accession No 20201030-5215

¹⁵ Accession No. 20201124-5182

¹⁶ Accession No. 20210129-5393

¹⁷ Consultation records on some studies predate April 2019; the BESS consultation record begins April 2020 through March 2021.

3.0 OPERATING CURVE CHANGE FEASIBILITY ANALYSIS STUDY

3.1 Study Progress and Data Collection Summary

In accordance with the FERC-approved Study Plan, the evaluation of the winter pool alternatives were completed in two phases. Alabama Power filed the Draft *Operating Curve Change Feasibility Phase 1 Study Report* on April 10, 2020¹⁸. Alabama Power held a virtual HAT 1 meeting on June 4, 2020. Subsequently, FERC and the Alabama Department of Conservation and Natural Resources (ADCNR) submitted comments to Alabama Power on the Draft Phase 1 Study Report. As noted in Section 2.0, Alabama Power filed the Final *Operating Curve Change Feasibility Phase 1 Study Report* on August 31, 2020.

The Phase 1 Report described the hydrologic models (Hydrologic Engineering Center's River Analysis System [HEC-RAS] and Hydrologic Engineering Center's Reservoir System Simulation [HEC-ResSim]) developed for evaluating the winter pool alternatives (increasing the winter pool elevation in increments of 1 foot from 786 feet msl to 789 feet msl) and presented the results of the potential impacts of the alternatives on hydropower generation, flood control, navigation, drought operations, Green Plan (GP) flows, and downstream release alternatives. Due to timing of the development of the Phase 1 Report, Alabama Power included only the Pre-Green Plan (PGP), GP, and a 150 cubic feet per second (cfs) continuous minimum flow (CMF) in the Phase 1 Report. Shortly after Alabama Power finalized the Phase 1 Report, FERC required Alabama Power to evaluate additional downstream release alternatives. Alabama Power included the analysis of the impacts of raising the winter operating curve on the ability to pass the additional downstream release alternatives in the Draft *Operating Curve Change Feasibility Analysis Phase 2 Study Report*.

Alabama Power used the information in the Final Phase 1 Study Report along with FERC-approved relicensing study results and existing information to conduct the Phase 2 analysis to determine potential resource impacts on water quality, water use, erosion, sedimentation (including invasive species), aquatic resources, wildlife, threatened and endangered (T&E) species, terrestrial wetlands, recreation resources, downstream structures, and cultural resources. The Draft *Operating Curve Change Feasibility Analysis Phase 2 Study Report* provides the detailed methodology used to evaluate impacts on Project resources and accompanying results. Additional analyses were conducted using data from existing sources and the relicensing studies.

¹⁸ Accession No. 20200410-5086

Alabama Power held a HAT 1 meeting on April 1, 2021, to review the results of the Phase 2 analysis with stakeholders and is filing the Draft *Operating Curve Change Feasibility Analysis Phase 2 Study Report* concurrently with the USR.

3.2 Variance from the Study Plan and Schedule

Alabama Power conducted the Operating Curve Change Feasibility Analysis Phase 2 Study in accordance with the methods and schedule described in the FERC SPD with the following variances:

- While use of historic photos from Lake Harris was mentioned in the Study Plan, photos could not be used to assess the effects of the winter pool alternatives due to the limited resolution of publicly available historical photos needed to assess individual erosion areas.
- Alabama Power provided qualitative information (rather than quantitative information noted in the Study Plan) regarding cultural resources on Lake Harris as the analysis of cultural resources is ongoing.

3.3 Remaining Activities/Modifications or Other Proposed Studies

Phase 2 analyses are complete. Alabama Power does not propose any additional operating curve change studies beyond those in the FERC SPD.

Remaining activities include:

- Review comments on the Draft *Operating Curve Change Feasibility Analysis Phase 2 Study Report* and modify the Final Report, as appropriate. The Final Report will be filed with the Final License Application (FLA).
- Alabama Power will present its operating proposal and protection, mitigation, and enhancement (PME) measures in the Preliminary Licensing Proposal (PLP), which will be filed by July 3, 2021.

4.0 DOWNSTREAM RELEASE ALTERNATIVES STUDY

4.1 Study Progress and Data Collection Summary

In accordance with the FERC-approved Study Plan, the evaluation of the downstream release alternatives was completed in two phases. In Phase 1, study methods included using existing data (hydrologic record and baseline information) to develop the appropriate simulation models to conduct the analysis of the following downstream release alternatives:

- GP (baseline or existing condition)
- PGP
- 150CMF

The primary tool for this study was the HEC-River Analysis System (HEC-RAS); however, Alabama Power used other HEC models to address the effects of downstream release alternatives. For example, effects to Harris Reservoir in Phase 2 were evaluated by modeling the current operations combined with each downstream release alternative through the daily HEC-Reservoir Simulation Model (HEC Res-Sim) for the ACT basin.

Alabama Power filed the Draft *Downstream Release Alternatives Phase 1 Study Report* on April 10, 2020¹⁹. Subsequently, FERC, the Alabama Rivers Alliance (ARA), ADCNR, and the U.S. Environmental Protection Agency (USEPA) submitted comments to Alabama Power on the Draft Phase 1 Study Report. As noted in Section 2.0, Alabama Power filed the Final *Downstream Release Alternatives Phase 1 Study Report* on July 27, 2020.

During Phase 2 of this study, the outflow hydrographs from HEC-ResSim were routed downstream using HEC-RAS to assess effects of the following downstream release alternatives on Project resources (water quality, water use, erosion and sedimentation, downstream aquatic resources [temperature and habitat], wildlife and terrestrial resources, T&E species, recreation, and cultural resources):

- GP
- PGP
- Modified Green Plan
- 150CMF
- 300CMF
- 600CMF

¹⁹ Accession No. 20200410-5069

- 800CMF
- 150CMF+GP
- 300CMF+GP
- 600CMF+GP
- 800CMF+GP

Additional analyses in Phase 2 were conducted using data from existing sources and the relicensing studies. Due to timing of the development of the Phase 1 Report and the request to evaluate additional downstream alternatives, Alabama Power included impacts from all downstream release alternatives on existing operational parameters (reservoir levels, hydropower generation, flood control, navigation and drought operations) in the Phase 2 analysis. While the SPD notes the effects analysis ongoing from June 2020-November 2021, Alabama Power and Kleinschmidt have completed the analyses.

Alabama Power held a HAT 1 meeting on April 1, 2021 to review the results of the Phase 2 analysis with stakeholders and is filing the Draft *Downstream Release Alternatives Phase 2 Study Report* concurrently with the USR.

4.2 Variance from the Study Plan and Schedule

Alabama Power conducted the Downstream Release Alternatives Phase 2 Study in conformance with FERC's SPD. There are no variances from the study plan or schedule.

4.3 Remaining Activities/Modifications or Other Proposed Studies

Phase 2 analyses are complete. Alabama Power does not propose any downstream release alternative studies beyond those in the FERC SPD.

Remaining Activities include:

- Review comments on the Draft *Downstream Release Alternatives Study Phase 2 Report* and modify the Final Report, as appropriate. The Final Report will be filed with the FLA.
- Alabama Power will present its operating proposal and PME measures in the PLP, which will be filed by July 3, 2021.

5.0 BATTERY ENERGY STORAGE SYSTEM

5.1 Study Progress and Data Collection Summary

On August 10, 2020, FERC sent a letter to Alabama Power discussing the Determination on Requests for Study Modifications for the Project. In that letter, FERC recommended that Alabama Power conduct a BESS study. FERC recommended that the BESS study be conducted along with the Downstream Release Alternative Study and include at least two new release alternatives: (a) a 50 percent reduction in peak releases associated with installing one 60 MW battery unit, and (b) a proportionately smaller reduction in peak releases associated with installing a smaller MW battery unit (i.e., 5, 10 or 20 MW battery). FERC further recommended that Alabama Power include in its cost estimates for installing a BESS, any specific structural changes, any changes in turbine-generator units, and costs needed to implement each battery storage type. Finally, FERC recommended that, consistent with the Downstream Release Alternative Study Plan, Alabama Power evaluate how each of the release alternatives (i.e., items (a) and (b) above) would affect recreation and aquatic resources in the Harris Project reservoir and downstream of Harris Dam.

As discussed in the BESS report, Alabama Power does not consider installation of a BESS at the Harris Project as a reasonable alternative. The BESS study was conducted to provide FERC with the information needed to support its analysis. Although FERC recommended that these analyses be conducted as part of the Downstream Release Alternatives Study, Alabama Power determined that a separate analysis is more appropriate in that the BESS study is a screening level effort, requires a more detailed economic analysis, and considers the replacement and addition of generation equipment such as the replacement cost of a turbine and installation/replacement cost of batteries. Additionally, to model Project operations with peaking removed, the HEC-ResSim and HEC-RAS models would need to be redesigned to incorporate new operating rules. Defining new operating rules and redesigning the models is outside the scope of the study proposed by ARA and recommended by FERC. Alabama Power is filing the *Battery Energy Storage System Report* concurrently with the USR.

5.2 Variance from the Study Plan and Schedule

FERC did not request a study plan for the BESS Study but provided recommendations for the type of analysis FERC expected Alabama Power to complete. The BESS was evaluated separately from the other downstream release alternatives and results of the analysis are presented in a separate report.

5.3 Remaining Activities/Modifications or Other Proposed Studies

The BESS Study is complete. Alabama Power does not propose any additional BESS analysis beyond that recommended by FERC in its Determination on Requests for Study Modifications for the Project

Remaining Activities include:

- Review comments on the Draft *Battery Energy Storage System at R.L. Harris Project Report* and modify the Final Report, as appropriate. The Final Report will be filed with the FLA.

6.0 WATER QUALITY STUDY

6.1 Study Progress and Data Collection Summary

The Draft *Water Quality Study Report* was filed concurrently with the ISR on April 10, 2020²⁰. Subsequently, the ADCNR, ARA, EPA, Alabama Department of Environmental Management (ADEM), and FERC submitted comments to Alabama Power on the Draft Study Report.

Alabama Power collected dissolved oxygen and temperature data at the generation monitor from June 1 to October 31, 2020 and at the continuous monitor from May 4 to October 31, 2020²¹. In addition, Alabama Power also collected monthly vertical profiles in the Harris Reservoir forebay from March to October 2020 and will continue collecting from March to October 2021. Alabama Power is continuing to collect water quality data at both downstream monitoring locations in 2021 (from March 1 – June 30, 2021 at the continuous monitor and June 1 – June 30, 2021 at the generation monitor) to include in the final license application.

Alabama Power is filing the *Final Water Quality Study Report* concurrently with the USR.

6.2 Variance from the Study Plan and Schedule

Alabama Power conducted the Water Quality Study in conformance with FERC's SPD. There are no variances from the study plan or schedule.²²

6.3 Remaining Activities/Modifications or Other Proposed Studies

Alabama Power does not propose any additional water quality studies.

²⁰ Accession No. 20200410-5095

²¹ As noted in the ISR, Alabama Power also collected water quality data at 15-minute intervals at the generation monitor from June to October 2017-2019, and at the continuous monitor from March to October 2019.

²² In the ISR, Alabama Power requested a variance to the approved Water Quality Study schedule to submit its Clean Water Act section 401 water quality certification to ADEM in April 2021, instead of as originally proposed in 2020. In the Determination on Study Modifications, FERC noted that Section 5.23(b) of the Commission's regulations requires the application for certification to be submitted to the certifying agency within 60 days of issuance of the Ready for Environmental Analysis notice, which will occur post-filing. Accordingly, a variance for submitting the certification application prior to filing the license application is not needed. As such, although a variance to the schedule does not need to be requested, Alabama Power notes that it plans to submit an application to ADEM for the 401 Water Qualification Certification (WQC) after the FLA is submitted in November 2021, not in April 2021 as noted in Alabama Power's ISR.

Remaining Activities include:

- Alabama Power will prepare the 401 WQC application and submit to ADEM after the FLA is filed with FERC.

7.0 EROSION AND SEDIMENTATION STUDY

7.1 Study Progress and Data Collection Summary

The Draft *Erosion and Sedimentation Study Report* was filed concurrently with the ISR on April 10, 2020²³. Subsequently, the ADCNR, ARA, FERC and individual stakeholders submitted comments to Alabama Power on the Draft Study Report. Alabama Power is filing the Final *Erosion and Sedimentation Study Report* concurrently with the USR.

7.1.1 Lake Harris

Alabama Power performed additional reconnaissance at identified sedimentation sites on Lake Harris during full (summer) pool conditions to determine if any nuisance aquatic vegetation was present. Alabama Power provided the results of the nuisance aquatic vegetation assessment in Appendix F of the Final *Erosion and Sedimentation Study Report*.

7.1.2 Tallapoosa River Downstream of Harris Dam

No additional data were collected in the Tallapoosa River downstream of Harris Dam to complete the analyses presented in the Final *Erosion and Sedimentation Study Report*.

7.2 Variance from the Study Plan and Schedule

Alabama Power conducted the Erosion and Sedimentation Study in accordance with the methods **and schedule described in the FERC SPD except for the following variance:**

- Alabama Power provided the results of the Nuisance Aquatic Vegetation Survey Report in Appendix F of the Final Erosion and Sedimentation Study Report rather than providing to HAT 3 in the form of a technical memorandum.

7.3 Remaining Activities/Modifications or Other Proposed Studies

Alabama Power does not propose any additional erosion and sedimentation studies, and there are no remaining activities.

²³ Accession No. 20200410-5091

8.0 AQUATIC RESOURCES STUDY

8.1 Study Progress and Data Collection Summary

As noted in Section 2.0, Alabama Power filed the Draft *Aquatic Resources Study Report*, which included the aquatic resources desktop assessment, on July 28, 2020. Subsequently, the ADCNR, ARA, EPA, individual stakeholders, and FERC submitted comments to Alabama Power on the Draft Study Report. Alabama Power held HAT 3 meetings on June 2, 2020, November 5, 2020, and March 31, 2021.

Auburn University (Auburn) conducted a literature review of temperature requirements of target species (Redbreast Sunfish [*Lepomis auratus*], Channel Catfish [*Ictalurus punctatus*], Tallapoosa Bass [*Micropterus tallapoosae*], and Alabama Bass [*Micropterus henshalli*]). Auburn University obtained temperature data from the U.S. Geological Survey (USGS), Alabama Power monitors, and the 20 temperature level loggers stationed downstream of Harris Dam and consolidated these data with historical data. Auburn continued fish sampling through January 2021 and tagged and tracked fish with acoustic/radio (CART tags) during the summer of 2020. Auburn also conducted static respirometry tests and measured active metabolic rates using a combination of increasing water velocity and decreasing water temperature. Auburn incorporated the necessary physiological parameters into bioenergetics models to conduct simulations needed to test potential influence of water temperature and flow on specific growth rates of target fishes below Harris Dam. Auburn conducted growth simulations of Redbreast Sunfish using respiration rate parameters largely gathered from Bluegill, a closely-related species. Growth simulations could not be conducted for other target species due to one or more factors, such as low sample sizes for laboratory experiments, a lack of published models developed for riverine populations, or because parameters for other target species did not fit models developed for closely-related species.

Alabama Power is filing the Final *Aquatic Resources Study Report*, including Auburn's final bioenergetics report, concurrently with the USR.

8.2 Variance from the Study Plan and Schedule

Alabama Power conducted the Aquatic Resources Study in accordance with the methods and schedule described in the FERC SPD with the following variance:

- Auburn University did not use the 30+2 sampling method as it was determined in the field to not be feasible/effective for sampling the sites and instead, shallow areas were sampled using boat and barge electrofishing equipment, which were found to be effective in sampling shallow areas within the study sites. The boat method used was a modification of the recently developed non-wadeable index of biological integrity (IBI). Sampling intensity was modified to accommodate available habitat, sampling frequency, and therefore IBI scores were not calculated.

8.3 Remaining Activities/Modifications or Other Proposed Studies

Alabama Power does not propose any additional aquatic resources studies, and there are no remaining activities.

9.0 DOWNSTREAM AQUATIC HABITAT STUDY

9.1 Study Progress and Data Collection Summary

As noted in Section 2.0, Alabama Power filed the Draft *Downstream Aquatic Habitat Study Report* on June 30, 2020. Subsequently, the ADCNR and ARA submitted comments to Alabama Power on the Draft Study Report. Alabama Power held a virtual HAT 3 meeting on June 2, 2020, November 5, 2020, and March 31, 2021.

In reviewing the comments on the Draft *Downstream Aquatic Habitat Study Report*, Alabama Power determined that the primary purpose of this study was to examine effects on habitat only; therefore, in the final report, all previous data and references to temperature were removed and are now included in the Final *Aquatic Resources Study Report* and the Draft *Downstream Release Alternatives Phase 2 Study Report* consistent with that FERC-approved Study Plan.

Alabama Power continued collecting level logger data at 20 locations in the Tallapoosa River below Harris Dam through June 2020, which were incorporated into the analysis and subsequent final report.

Alabama Power is filing the Final *Downstream Aquatic Habitat Study Report* concurrently with the USR.

9.2 Variance from the Study Plan and Schedule

Alabama Power conducted the Downstream Aquatic Habitat Study in conformance with FERC's SPD. There are no variances from the study plan or schedule.

9.3 Remaining Activities/Modifications or Other Proposed Studies

Alabama Power does not propose any additional downstream aquatic habitat studies, and there are no remaining activities.

10.0 THREATENED AND ENDANGERED SPECIES STUDY

10.1 Study Progress and Data Collection Summary

The Draft *Threatened and Endangered Species Desktop Assessment* was filed concurrently with the ISR on April 10, 2020²⁴. Subsequently, the U.S. Fish and Wildlife Service (USFWS), ADCNR, FERC, ARA, the Alabama Glade Conservation Association, and an individual stakeholder submitted comments and questions regarding the Draft Desktop Assessment. Alabama Power held a virtual HAT 3 meeting on June 2, 2020, November 5, 2020, and March 31, 2021.

Alabama Power completed field surveys at Lake Harris and Skyline to determine if T&E species are located within the Project Boundary. As noted in Section 2.0, Alabama Power filed the Final *Threatened and Endangered Species Study Report*, including the Desktop Assessment and the results of all field investigations, on January 29, 2021.

10.2 Variance from the Study Plan and Schedule

Alabama Power conducted the Threatened & Endangered Species Study in conformance with FERC's SPD. There are no variances from the study plan or schedule.

10.3 Remaining Activities/Modifications or Other Proposed Studies

Alabama Power does not propose any additional threatened and endangered species studies, and there are no remaining activities.

²⁴ Accession No. 20200410-5094

11.0 PROJECT LANDS EVALUATION STUDY

11.1 Study Progress and Data Collection Summary

The Draft *Phase 1 Project Lands Evaluation Study Report* was filed concurrently with the ISR on April 10, 2020²⁵. Subsequently, the ADCNR and FERC submitted comments to Alabama Power on the Draft Study Report. As noted in Section 2.0, Alabama Power filed the Final *Phase 1 Project Lands Evaluation Study Report* on October 2, 2020. Alabama Power held a HAT 4 meeting on October 19, 2020, to present the Draft Shoreline Management Plan (SMP) and the Wildlife Management Plan (WMP) annotated outline.

Samford University conducted a botanical survey on an additional 35 acres of land adjacent to the previously surveyed area at Flat Rock Park. This additional botanical inventory report (*A Botanical Inventory of a 35-Acre Parcel at Flat Rock Park, Blake's Ferry, Alabama*) is being filed concurrently with the USR.

Phase 2 of this study is using the results of Phase 1 and other Harris relicensing studies to develop a WMP and a SMP. Specific activities for developing the SMP and WMP are included in the FERC-approved Study Plan.

11.2 Variance from the Study Plan and Schedule

Alabama Power conducted the Project Lands Evaluation in conformance with FERC's SPD. There are no variances from the study plan or schedule.

11.3 Remaining Activities/Modifications or other Proposed Studies

Alabama Power does not propose any additional land evaluation studies.

Remaining activities include:

- Alabama Power will file a WMP and SMP with the FLA.

²⁵ Accession No. 20200410-5092

12.0 RECREATION EVALUATION STUDY

12.1 Study Progress and Data Collection Summary

As noted in Section 2.0, Alabama Power filed the Draft *Recreation Evaluation Study Report* on August 24, 2020²⁶. Subsequently, the ADCNR, ARA, Tim Coe (Mayor of Wedowee), Donna McKay (Mayor of Town of Wadley), Bob Fincher (State Representative 37th House District), individual stakeholders, and FERC submitted comments to Alabama Power on the Draft Study Report. Alabama Power held HAT 5 meetings on June 4, 2020 and October 19, 2020. As noted in Section 2.0, Alabama Power filed the Final *Recreation Evaluation Study Report* on November 24, 2020.

12.2 Variance from the Study Plan and Schedule

Alabama Power conducted the Recreation Evaluation Study in accordance with the methods and schedule described in the FERC SPD, including a variance that was approved by FERC on August 10, 2020.

12.3 Remaining Activities/Modifications or Other Proposed Studies

Alabama Power does not propose any additional recreation studies, and there are no remaining activities.

²⁶ This was noted as a schedule variance in the Initial Study Report due to the additional study elements and extended participation deadlines.

13.0 CULTURAL RESOURCES STUDY

13.1 Study Progress and Data Collection Summary

The Harris Project Cultural Resources *Programmatic Agreement and Historic Properties Management Plan* Study Plan involves collecting and summarizing existing cultural resources baseline information and developing a plan to assess cultural resources identified in the Harris Project Area of Potential Effect (APE). Alabama Power filed the *Inadvertent Discovery (IDP) Plan and Traditional Cultural Properties (TCP) Identification Plan* concurrent with the ISR on April 10, 2020²⁷. Subsequently, stakeholders submitted comments to Alabama Power²⁸. On May 15, 2020, Alabama Power provided the Draft *Area of Potential Effects Report* to HAT 6 for review. Alabama Power held a HAT 6 meeting on May 28, 2020 to discuss the APE report and the status of the TCP Identification study. Alabama Power filed the Final *Area of Potential Effects Report* on June 29, 2020²⁹. On August 11, 2020, FERC issued its Determination of Area of Potential Effects for the Project³⁰. Alabama Power held a virtual site visit of Skyline on March 4, 2021, for applicable tribes and the Alabama Historical Commission.

Alabama Power concluded cultural resources assessments for the sites identified during the Lake Harris preliminary archeological assessment in February 2021 and will complete the TCP identification process with the Muscogee (Creek) Nation in April 2021.

In addition to assessments on sites on Lake Harris, Alabama Power completed cultural resource assessments for Skyline. Further, as part of the Draft *Downstream Release Alternatives Phase 2 Study Report*, Alabama Power reviewed the effects of Project operations (including any proposed changes in downstream releases) to the known cultural resources downstream of Harris Dam³¹.

²⁷ Accession No. 20200410-5068

²⁸ The Draft TCP Identification Plan and IDP Plan were distributed to HAT 6 for comments in February 2020.

²⁹ This was noted as a schedule variance in the Initial Study Report.

³⁰ Accession No. 20200811-3007

³¹ This was a desktop review and did not include cultural resource assessments as most of the cultural resources downstream are outside of Alabama Power's administrative area of control.

13.2 Variance from the Study Plan and Schedule

Alabama Power conducted the Cultural Resources Programmatic Agreement and Historic Properties Management Plan Study in conformance with FERC's SPD with the following variances:

- a variance for filing the Final *Area of Potential Effects Report* which was approved by FERC following the ISR.
- will complete the TCP identification process with the Muscogee (Creek) Nation in April 2021 (rather than February 2021 as noted in the Study Plan).

13.3 Remaining Activities/Modifications or Other Proposed Studies

Alabama Power does not propose any additional cultural studies.

Remaining Activities include:

- Alabama Power will complete eligibility assessments for known cultural resources by July 2021.
- Alabama Power will issue determination of effect on historic properties by July 2021.
- Alabama Power will develop a Draft Historic Properties Management Plan (HPMP) for the Harris Project to be filed concurrently with the PLP. The HPMP will describe the Harris Project, APE, anticipated effects, and Alabama Power's proposed measures to protect historic properties.