

# PROJECT OPERATION AND FLOW MONITORING CONCEPTUAL PLAN

R.L. Harris Hydroelectric Project

FERC No. 2628



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**Alabama Power Company**

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# 1 INTRODUCTION

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On June 29, 2021, Alabama Power filed its Preliminary Licensing Proposal (PLP) for relicensing the R.L. Harris Hydroelectric Project (FERC No. 2628). In the PLP, Alabama Power indicated it would develop and implement a Project Operation and Flow Monitoring Plan after license issuance that would monitor compliance with: (1) project operation and water level management; (2) flood control operation; (3) drought management; and (4) flow releases from Harris Dam. On October 1, 2021, Federal Energy Regulatory Commission (FERC) staff issued a letter to Alabama Power commenting on the PLP. In this letter, FERC staff required Alabama Power to develop “conceptual elements” for the Project Operations and Flow Monitoring Plan that includes: (1) the goals of the monitoring; (2) the variables to be monitored and the anticipated methods for monitoring project operation and flow; (3) general locations of monitoring sites; (4) provisions for reporting results and making recommendations; (5) monitoring and reporting frequency; (6) a schedule for developing and implementing the plan; and (7) estimated capital and annual costs associated with the plan. The purpose of this document is to address FERC staff’s requirements. Note that the Harris Project Operations and Flow Monitoring Plan mirrors FERC-approved Project Operations and Flow Monitoring Plans for other Alabama Power projects.

## 2 MONITORING GOAL

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The goal of the Project Operations and Flow Monitoring Plan is to establish a framework to periodically confirm that the Harris Project is operated in compliance with the new license.

### **3 VARIABLES TO BE MONITORED, GENERAL LOCATION OF MONITORING SITES, AND THE ANTICIPATED METHODS FOR MONITORING PROJECT OPERATION AND FLOW**

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Central to monitoring Alabama Power's hydroelectric fleet is the Hydro Optimization Management System (HOMS), which is a complex and dynamic system of data collection, analysis, and management tools, and includes an arrangement of hydrologic and flow monitoring systems and tools as well. HOMS exists for the purpose of real time monitoring, and as a decision tool and support for computer applications related to the operation of Alabama Power's 14 hydroelectric facilities located within the Coosa, Tallapoosa, and Black Warrior River Basins.

Each Alabama Power hydroelectric plant control system is equipped with one or more programmable logic controllers (PLC). The PLC receives data from various inputs, including headwater elevation, tailwater elevation, wicket gate settings, generation data, precipitation, and dissolved oxygen.

The Hydro Data Acquisition System (HDAS) is a combination of over 100 rain, stage and evaporation gages located in the river basins where Alabama Power dams and reservoirs are located. The largest majority of these gages are owned and operated by Alabama Power. Where physically practical, Alabama Power pulls data from adjacent USGS rain and stage gages to enhance the viability of the overall HDAS.

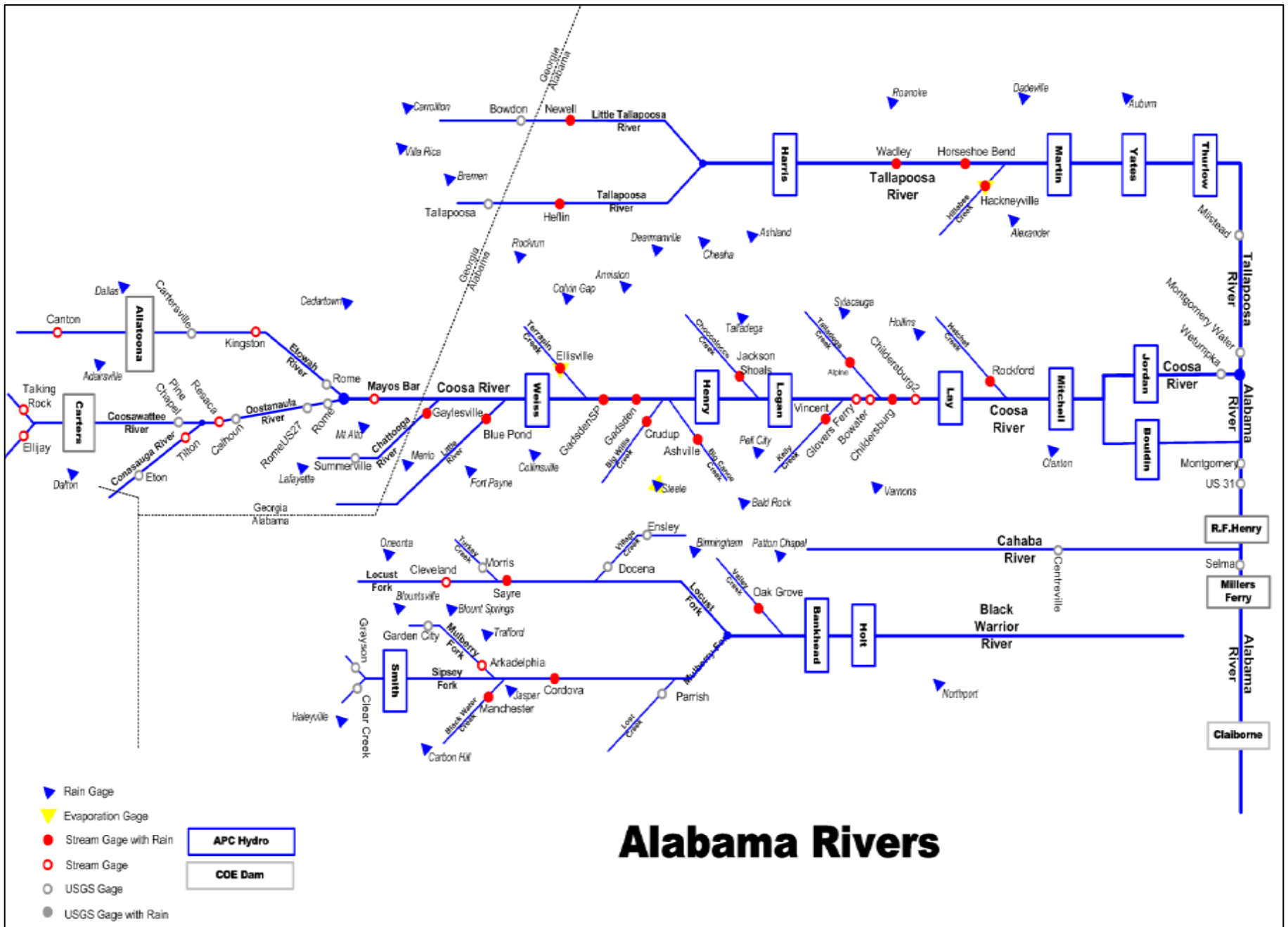
The U.S. Army Corps of Engineers - Mobile District Water Management Section maintains records of precipitation, river stages, reservoir elevations and general stream-flow conditions throughout the Mobile District, with special emphasis on the areas affecting or affected by reservoir operations. Alabama Power exchanges these data with the Mobile District through electronic transmission to the Mobile District server. The United State Geological Survey operates and maintains numerous stage and rain gages within the basins; the data from this equipment is available via the internet at the USGS website, and accessible through HOMS.

The network of data collected from various gages, both Alabama Power and USGS/Corps, is depicted in the stick diagram below covering the Alabama-Coosa-Tallapoosa (ACT) and Black Warrior-Tombigbee (BWT) basins. Alabama Power intends to continue to maintain

and extend this network of information sources as additional resources become available into the future.

Data collected from the various sources are then rendered into web and desktop applications to monitor operations and activities at the Alabama Power hydro facilities. These applications are provided to the Power System Coordinator at the Alabama Control Center Hydro Desk to monitor the operations and activities at the hydro facilities 24 hours per day, seven days per week.

Variables to be monitored include, but are not limited to, reservoir levels, tailrace elevation, wicket gate settings, generation data, unit discharge, and spillway gate operation.





## **4 PROVISIONS FOR REPORTING RESULTS, MAKING RECOMMENDATIONS, AND MONITORING AND REPORTING FREQUENCY**

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The Project Operation and Flow Monitoring Plan will include provisions for making notification to FERC and appropriate agencies when the proposed minimum flow is not met due to unit outages, O&M, etc. or when modifications are made due to low-inflow/drought.

## **5 SCHEDULE FOR DEVELOPING AND IMPLEMENTING THE PLAN**

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Alabama Power will develop the plan, consult with agencies and file with FERC for approval within 3 months of license issuance.

## **6 ESTIMATED CAPITAL AND ANNUAL COSTS ASSOCIATED WITH THE PLAN**

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Alabama Power estimates the capital costs to develop and implement the Project Operation and Flow Monitoring Plan is \$100,000 and the annual operations and maintenance costs is \$10,000.