

Alabama Drought Response Operating Proposal (ADROP)

Executive Summary

Overview

Alabama Power Company (APC) is in the process of developing a drought response plan, currently identified internally as the Alabama Drought Response Operating Proposal (ADROP). ADROP is the basis of a plan to manage APC's water resources within the Alabama portion of the Alabama-Coosa-Tallapoosa Basin (ACT) during drought conditions. ADROP is still in the developmental stages, and there are issues still left to address. However, the philosophy behind ADROP is sound.

Rain and stream flow indicators are monitored in order to determine when the system is entering and exiting a drought period. When indicators reach specified levels, to be outlined in ADROP, drought triggers will be activated, resulting in a reduction of flow into the Alabama River. Accordingly, the Coosa and Tallapoosa Rivers response to the reductions will be based on conditions within each river system. As the drought severity lessens or worsens, the intensity levels to be defined in ADROP call for a bracket (range) of operations. This will allow for flexibility and smoother transition when moving from one intensity level to another, without having absolute fixed points of operation.

Normal Conditions

During a normal water year, APC meets a navigation target of 4,640 cfs in the Alabama River. This flow is met by releases from the two upstream converging rivers: Coosa and Tallapoosa. Out of Jordan Dam, on the Coosa River, a continuous flow of 2,000 cfs is met during the months July through March. From April 1st through May 31st, APC releases a continuous base flow of 4,000 cfs for 18 hours per day and an 8,000 cfs pulse flow for the remainder. During the month of June, the base and pulse flows are stepped down in daily increments back to the continuous 2,000 cfs. Recreation flows are made from Jordan April 1st to October 31st, in accordance with Federal Energy Regulatory Commission (FERC) license provisions. Out of Thurlow Dam, on the Tallapoosa River, a year-round continuous flow of 1,200 cfs is released.

Drought Conditions, Indicators and Triggers

When drought conditions emerge in the basin which may potentially impact normal operating conditions, drought indicators will be used to describe the magnitude, duration, severity and extent of a drought. These indicators will be based on meteorological and hydrological variables. Because there is a well-established rain and stream gauging network in the Alabama portion of the ACT basin, precipitation was chosen as a meteorological indicator and stream flow as a hydrological indicator. Observations of precipitation and stream flow will be used to verify when the ACT is entering into or recovering from a drought. The precipitation indicator will be the

average of normal monthly rainfall as measured at specific airport gages. The stream flow indicator will be based on percentiles taken from specific gages within the USGS's real-time gauging system. When the indicators meet specified criteria, APC and the appropriate state and federal agencies (agencies) will begin to closely monitor the system. As conditions continue to decline, APC and agencies will begin weekly conference calls to discuss trends in data and determine when drought triggers need to be activated and the first level of drought response instated.

There will be three levels of drought conditions identified in ADROP; each level will be tied to a compounding trigger system. As more of the triggers are met, the system will intensify to a deeper drought level. At each of the levels, if a trigger is met then a flow reduction will occur into the Alabama River leading to a corresponding reduction in one or both of the upstream rivers, dependant upon severity of the drought in each. Throughout the duration of the drought, conditions will continue to be monitored for change. Changes in the drought intensity levels will be made when triggers are activated and there is consensus of such between APC and the agencies. The determination that the system is coming out of a drought will take place when observed conditions within the ACT are out of the drought levels and the specified drought indicators are at or above their requirements. Finally, APC and agencies will have to agree that the system is actually moving out of the drought before there will be a return to normal operations.

Coosa & Tallapoosa Responses

As stated above when drought levels are activated by triggers being met, a reduction in the Alabama River will occur to allow a decrease in flow from either the Coosa or Tallapoosa River system, or both. Changes for each of the systems will be dependent on the conditions in each basin and also the season of the year. The Coosa portion could allow for a lower base minimum flow, as well as reduction of FERC license required spring attraction flows and recreation flows. The Tallapoosa portion of the plan will be some variation of the current FERC license minimum flow requirements and operations practices initiated in 2007.

Conclusion

ADROP is still in the developmental stage and will evolve into a long term drought plan. Indicators and triggers within the current revision will be primarily based on operating experience during the 2007 year, the drought of record for the basin. Moving forward, revisions made to ADROP will be on the consensus between Alabama Power Company and the appropriate state and federal agencies. Any revisions that will affect the FERC license will subsequently be filed with for FERC approval prior to implementation of ADROP.