Warrior Hydropower Relicense
Smith Tailrace Enhancement Proposal

The Smith Tailrace Working Group (STWG) has identified several resource areas of the Smith Tailrace that will be enhanced under the new FERC operating license. As part of discussions and negotiations Alabama Power Company (APC) proposes the following alternatives to enhance the existing environmental and recreation resources of the Smith Tailrace.

Minimum Flows

- The STWG has developed a minimum flow plan for the Smith Tailrace.
- APC will install one "minimum flow valve" on each penstock drain at the Smith powerhouse to allow for flow releases into the Smith Tailrace during non-generation periods.
- The valves are estimated to have a discharge capacity of approximately 25 cubic feet per second (cfs) each, and a combined flow of 50 cfs when both valves are open. The valves may pass slightly more or less flow than listed here and may vary with lake elevation.
- The valves will be opened when the tailrace elevation drops to a water surface elevation 256.2 msl that corresponds to an 85 cfs flow (50 cfs from the valves and 35 cfs leakage). The valves will be closed when generation begins and will remain closed until the tailrace again recedes to the 256.2 msl water surface elevation. This scenario will provide flows during non-peaking periods including both night and weekend periods.
- During annual turbine inspection and repair events, there may be periods when only one or neither valve will be available to operate. Safety requirements specify that each respective penstock be drained prior to turbine inspection. Therefore, minimum flows will be reduced or eliminated during these events. APC will make a good faith effort to limit the duration of these events.

Trout Stocking

- The STWG has identified trout stocking enhancements for the Smith Tailrace.
- APC will commit to acquire coldwater species (trout or other species) for the supplemental stockings to the Sipsey Fork (up to $24,000 annually, escalated via CPI) or reimburse ADCNR their actual cost for this purpose.
- APC, ADCNR, and USFWS representatives will meet once every ten (10) years to review the trout stocking program and discuss the stocking of recreational species other than trout in the Smith Tailrace.

Habitat Enhancements

- The STWG has identified habitat enhancements for Smith Tailrace.
- APC will add additional instream habitat to the Smith Tailrace above the Hwy 69 bridge.
- APC will develop a Habitat Enhancement Plan for the Smith Tailrace with input from the ADCNR, USFWS, and individuals with local and regional expertise. A framework for the Plan will be developed and submitted as part of the license application for FERC approval. A draft Enhancement Plan is attached to this proposal.

Water Quality

- The STWG has identified water quality enhancements for the Smith Tailrace.
- APC proposes to meet the conditions of its 401 Water Quality Certification for the Smith Tailrace as stipulated by ADEM.
- APC proposes to meet state water quality standards for dissolved oxygen in the Smith Tailrace during generation periods.
- APC also proposes to incorporate aeration in the "minimum flow valves" as needed.

Recreation Enhancements

- The STWG has identified recreation enhancements for the Smith Tailrace.
- The Group will work with the Warrior Recreation Issue Action Group to develop enhancements to the current recreational access in the Smith Tailrace.
- APC has developed a Recreation Plan for the Smith Tailrace area to enhance the Smith Tailrace downstream to the Hwy. 69 Bridge.

Mussel and Snail Restoration

- APC proposes to continue to discuss the formation of a Restoration Fund (Aquatic Resource Culture Center) to aid in the restoration of selected species of concern endemic to the Black Warrior drainage with the ADCNR and USFWS.

Smith Tailrace Draft Habitat Enhancement Plan

The Smith Tailrace Working Group (STWG) has identified several resource areas of the Smith Tailrace that will be enhanced under the new FERC operating license. These enhancements are listed in the "Smith Tailrace Enhancement Proposal". As part of that proposal Alabama Power Company (APC) has prepared the following Habitat Enhancement Plan to improve the existing environmental and recreation resources of the Smith Tailrace. This Plan was developed in consultation between APC, the Alabama Dept. of Conservation and Natural Resources (ADCNR), the US Fish and Wildlife Service (USFWS), and individuals with local and regional expertise.

Habitat Enhancements are characterized as physical stream modifications that will be implemented in the Smith Tailrace during the new Warrior Hydroelectric License. All enhancements will be added upstream of the Hwy 69 bridge. Within that area are two sub areas: 1) the stream habitat upstream of the Birmingham Water Works (BWW) pumping station and 2) the stream habitat downstream of the BWW. These two areas differ significantly and will require different types of enhancement and strategies for implementation.

All habitat enhancements will be implemented after the new license has been accepted by APC and the new minimum flow has been established.

Habitat Enhancements Upstream of BWW

The stream upstream of the BWW is more typical of a southeastern mountain stream with various runs, shoals, and pools. The goal of habitat enhancement in this area is to increase the complexity of the existing habitat through the addition of structures. The type of structures to be considered will include:

- anchoring of logs along the streambank – velocity refugia, cover, woody debris habitat
- placement of rock-filled gabions – create groins or vanes to create velocity refugia

APC, ADCNR, and USFWS will determine the exact placement of specific enhancements once the minimum flow has been established. Initially, experimental enhancements will be installed and evaluated (permanence, observations of effectiveness, etc.) over a 1 to 2 year period. Based on these observations, additional enhancements may be installed to provide additional habitat enhancements. APC will examine the installed structures and provide maintenance on a 6-yr cycle. APC recommends that the placement of these structures be closely tied to fisherman access in the tailrace area.

Habitat Enhancements Downstream of BWW

The stream downstream of the BWW has been modified through dredging in the past and is basically a long pool that is part of the Bankhead Reservoir Pool. The goal of habitat enhancement in this area is to provide structures that will increase the amount of cover

and structure in the stream. APC has previously installed multiple fish attraction devices (FAD) made of concrete and PVC. These structures (or modifications of these structures) will be placed in areas where recreation fishing areas will be developed.

APC, ADCNR, and USFWS will determine the design and placement of FADs once the recreation fishing facilities have been constructed. Five to ten FADs will be installed at each fishing area and will be supplemented or replaced every 6-years as needed.