Saluda Hydroelectric Project (FERC No. 516)

Study Plan: Effects of Releases from the Saluda Hydroelectric Project Dam on the Temperature Regime of the Lower Saluda and Congaree Rivers

Water Quality Technical Working Committee
March 15, 2006

I. Study Objective

The study objective is to characterize the effects of water releases from the Saluda Hydroelectric Project Dam on the temperature regime of the Lower Saluda River (LSR) and Congaree River, including downstream extent of temperature alteration, timing and duration of temperature alteration, and mixing characteristics.

II. Geographic and Temporal Scope

Temperature investigations will focus on the LSR from downstream of Saluda Hydro Dam to its confluence with the Broad River; the Congaree River from its origin at the confluence of the Saluda and Broad rivers to its terminus at the confluence with the Wateree River; and the lower Broad River from the Broad River near Jenkinsville USGS gage (#02160991) to its terminus at the confluence with the Saluda (Figure 1).

The study is scheduled to begin in March 2006 and will continue through October 2007.

III. Methodology

Water temperature data will be collected from 11 locations in the study area, as determined in consultation with the resource agencies and interested stakeholders, using a combination of existing USGS gages and deployed instrumentation (Figure 1). Specifically, temperature data will be acquired from the following USGS gages with temperature capabilities: Broad River near Jenkinsville (#02160991), Saluda River below Lake Murray Dam (# 02168504), Saluda River near Columbia (#02169000). In addition, paired temperature probes (StowAway® TidbiT™) will be deployed along the north and south riverbank at the following locations to provide temperature data for the remainder of the study area:

- LSR upstream of the confluence with the Broad;
- Broad River near the Columbia Canal headgates;
- Congaree River in the vicinity of the USGS gage adjacent to downtown Columbia (#2169500);
- Congaree River in the vicinity of the Interstate-77 bridge (upstream of the City of Columbia and City of Cayce wastewater treatment plants);
- Congaree River between I-77 and above Viridian (formerly Eastman Kodak);
- Congaree River at the upstream extent of the Congaree National Park (NP), near the Congaree River at Congaree NP USGS gage (# 02169625);
- Congaree River midway of the Congaree National Park; and
- Congaree River near the downstream extent of the Congaree National Park, upstream of the Highway 601 Bridge and the influence of the Wateree River.

A single temperature probe will also be deployed adjacent to the USGS gage below Lake Murray Dam (# 02168504) to verify data collected by the gage. Probes will acquire data at 15 minute intervals or at the lowest time duration above 15 minute allowable by the instrumentation. Data will be compared by

location using appropriate statistical methods to determine timing, duration, magnitude, and spatial extent of temperature alterations.

IV. Schedule and Required Conditions

The study is scheduled to begin in March 2006 and will continue through October 2007. A brief report summarizing the study's status will be issued at 6-month intervals. All data collected will be provided in electronic format to agencies and interested stakeholders. Review meetings of the Water Quality Technical Working Committee will be held within approximately 30-days after each interim report is issued. Study methodology, timing, and duration may be adjusted based on consultation with the resource agencies and interested stakeholders. A final report with detailed analysis on the effects of Saluda Dam operations on water temperature will be issued upon completion of the study period.

V. Use of Study Results

Study results will be used as an information resource during discussion of relicensing issues with the SCDNR, USFWS, Water Quality RCG and TWC, and other relicensing stakeholders.

VI. Study Participants

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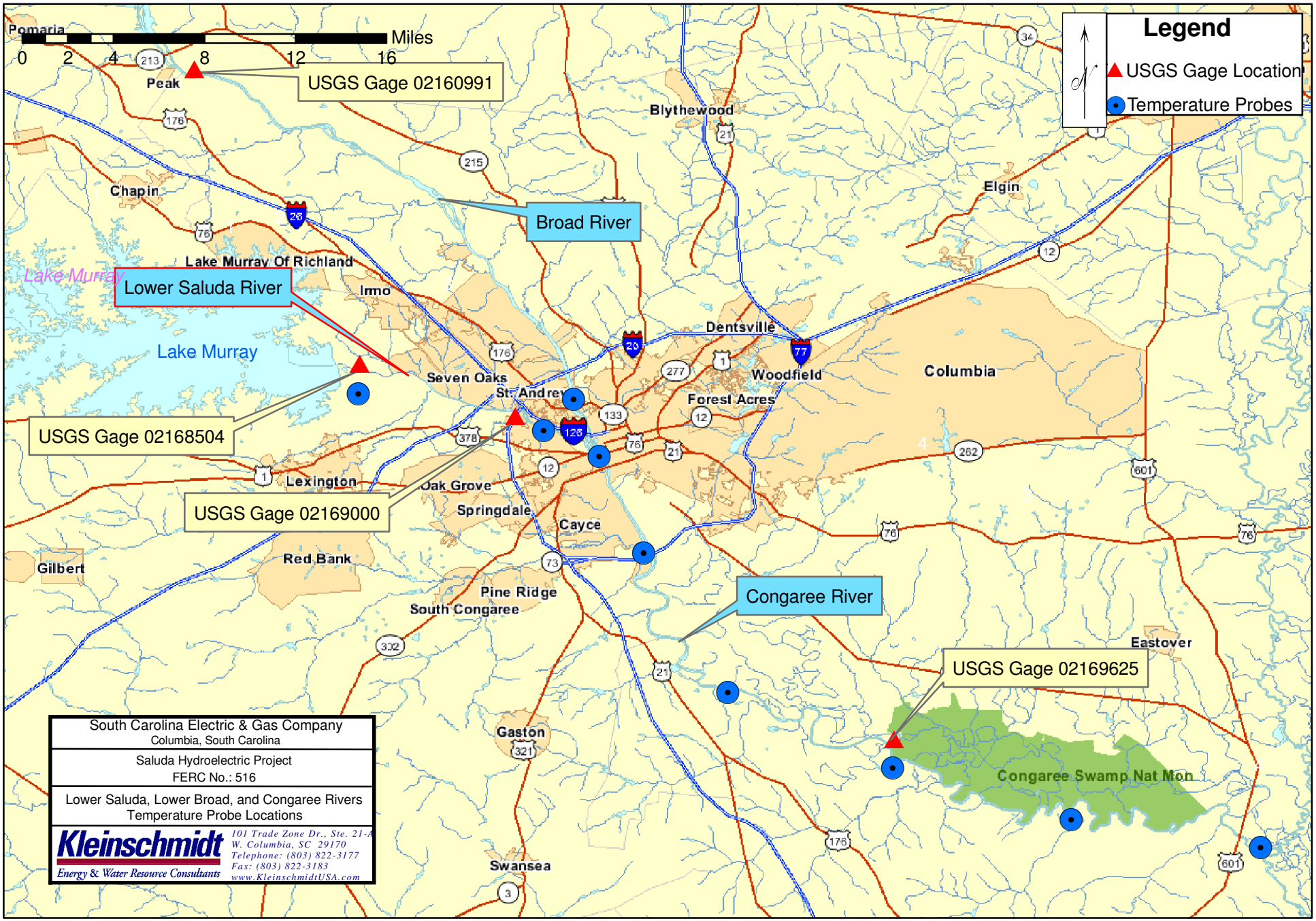
VII. List of Attachments

Figure 1: Temperature Probe Locations in the Lower Saluda, Congaree and Lower Broad Rivers


Legend
USGS Gage Location
Temperature Probes
Miles
0 2 4 8 12 16
USGS Gage 02160991
Broad River
Lower Saluda River
USGS Gage 02168504
USGS Gage 02169000
Congaree River
USGS Gage 02169625
Lake Murray
Lake Murray
Congaree Swamp Nat Mon
Pomaria
Peak
Chapin
Lake Murray Of Richland
Irmo
Blythewood
Elgin
Dentsville
Columbia
Woodfield
Forest Acres
Seven Oaks
St. Andrews
Lexington
Oak Grove
Springdale
Cayce
Red Bank
Gilbert
Pine Ridge
South Congaree
Gaston
Swansea
Eastover
South Carolina Electric & Gas Company
Columbia, South Carolina
Saluda Hydroelectric Project
FERC No.: 516
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