

MEETING NOTES

**SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
WATER QUALITY TECHNICAL WORKING COMMITTEE**

**SCE&G Training Center
May 23, 2006**

final jms 5-23-06

ATTENDEES:

Bill Argentieri, SCE&G	Alan Stuart, Kleinschmidt Associates
Shane Boring, Kleinschmidt Associates	Jeni Summerlin, Kleinschmidt Associates
Gerrit Jobsis, SCCCL & Am. Rivers	Reed Bull, Midlands Striper Club
Tom Bowles, SCE&G	Andy Miller, SCDHEC
Amanda Hill, USFWS	Ron Ahle, SCDNR
Roy Parker, LMA	Jim Ruane, REMI

ACTION ITEMS:

- Shane Boring – e-mail fish kills to Amanda Hill
- Reed Bull – make an excel table summarizing fish kill information
- Shane Boring – ensure the March 24 meeting notes include fish kill data
- Bill Argentieri – review unit 5 operation data

DATE OF NEXT MEETING: **August 23, 2006 at 9:30 a.m.**
Located at the Lake Murray Training Center

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These notes serve to be a summary of the major points presented during the meeting and are not intended to be a transcript or analysis of the meeting.

Shane Boring opened the meeting at approximately 9:30 AM. Shane B. briefly discussed the status of the action items listed in previous meeting notes. It was noted that the purpose of today's meeting would be to review: (1) the status of TMDL discussions, (2) the status of the temperature study on the lower Saluda and Congaree Rivers, (3) information pertaining to striped bass fish kills in Lake Murray, and (4) set a date and time for the next Water Quality Technical Working Committee (TWC) meeting.

Review Status of TMDL Discussions

Alan Stuart noted that Jim Ruane, Dan Tufford, Andy Miller, and himself met on May 3rd and developed a list of action items to be undertaken for the application of the W2 model to a TMDL. Jim Ruane noted that the W2 model will be finalized in July of this year. Jim R. noted that the W2 model will evaluate certain water quality parameters in Lake Murray, which will ultimately set a standard for the TMDL. He briefly discussed methods for monitoring phosphorus loads in reservoirs. Jim R. explained that phosphorus is mostly tied up in organic matter such as algae. He noted that clay also plays a key role in phosphorus transport which is an important component in how Lake Murray behaves. Jim R. further explained methods for monitoring phosphorus in the lake.

The group then began to discuss the 222 SCDHEC station and Jim R. noted that the bridge above Lake Murray forms an embankment and effects the width of that water, which may ultimately result in high levels of phosphorus in the Saluda River. He mentioned that the W2 model might be able to calculate the water flow under the bridge by using flux. During continuing discussion on the TMDL issue, Andy Miller noted that SCDHEC does not have the funding to perform a TMDL on Lake Murray at this time. Andy M. noted that if funding was available, then SCDHEC would like to examine both embankments on Lake Murray. Ron Ahle pointed out that water quality in the Saluda tailrace should also be considered in order to obtain necessary results. Alan S. noted that he would find out SCE&G position on this issue.

Discussions continued, highlighting briefly on the draw of water at different operations, including discussions about the draw from unit five. It was decided that it would be beneficial for Jim R. to run the W2 model for the years; 1990-1991, 1998-1999, and 2005. Bill Argentieri noted that 1998-1999 operation data for unit five will not be available. Gerrit Jobsis briefly described the overall plan which included upgrading calibration on the W2 in July, running a model for the major fish kill

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years, and reviewing output of the analysis. The group discussed the development of various operation scenarios that could be applied to the W2 model after it's calibrated.

Temperature Study Update

Shane B. briefly discussed the status of the temperature impacts study in the lower Saluda and Congaree Rivers. Shane B. presented a map that displayed each temperature sampling location. Ron A. asked if the temperature probe located downstream of the I-77 bridge was placed below Columbia discharge. Shane B. noted that he would find out exactly where the Columbia discharge enters the Congaree River and will adjust the temperature probe if needed. Shane B. noted that the temperatures on the Saluda River are very different from temperatures on the Broad River. He pointed out that probes located on the left bank below the Gervais Street bridge are reading higher temperatures than those on the right bank. He noted that temperature impacts continue between the I-77 bridge and the Congaree National Park locations. However, midstream of the Congaree National Park, the water temperature readings are warmer. Shane B. noted that he has not compared the temperature data to water releases from the Saluda Hydro Dam. Shane then concluded his presentation and asked the group for any future needs.

Gerrit J. noted that Dr. John Gray, a statistician whom he worked with on compiling a statistical comparison of flows between the Congaree and Broad Rivers, may be willing to assist with the statistics of the temperature study. Bill A. questioned the types of parameters to be analyzed. Jim R. recommended plotting the data in a time series, using hourly averages to reduce the amount of data collected. Jim R. added that structural data analysis, from when a project is operating versus not operating, should also be included. Bill A. noted that the Saluda Operating Report is available and can be distributed. Jim R. also suggested adding flows to the analysis, frequency and duration should be included with the time series. Alan S. pointed out that a six month time series should be completed before the data is turned over to Dr. John Gray for analysis.

Striped Bass Fish Kills Discussions

Alan S. opened the discussion on fish kills by reviewing the two major kills in 1990-1991 and 2005. When asked for a summary of what will be included in the study, Alan S. explained that several variables will be examined, such as operation, dissolved oxygen, temperature, and instream flow data. He added that each of these variables will be examined for each year of fish kills, as well as each year before and after a fish kill. Reed Bull added that rainfall data should also be taken into account. Ron A. noted that the group should begin examining the time of year when Lake Murray begins to stratify. Alan noted that since operational data for unit five is not available, it would only be feasible to use the 2005 fish kill year.

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Date/Location of Next Meeting

The group agreed to meet again on August 23, 2006, at the Lake Murray Training Center. It was noted and the group agreed that this meeting will be dedicated to discussing striped bass issues. Shane B. noted that he would have another presentation to update the group on the temperature study. Gerrit J. added that he would contact Dr. Gray about analyzing the temperature data. Roy Parker also noted that he would update the group on the Lake Murray Association water quality study.