MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
Recreation TWC Meeting

May 10, 2016

Final KMK 06-03-16

ATTENDEES:

Bill Argentieri (SCE&G)
Ray Ammarell (SCE&G)
Steve Summer (SCANA)
Brandon Stutts (SCANA)
Caleb Gaston (SCANA)
Beth Trump (SCE&G)
Randy Mahan (SCE&G)
Bill Marshall (SCDNR)
Dick Christie (SCDNR)
Fritz Rohde (NOAA) via conference call
Gerrit Jobsis (American Rivers)
Bill Stangler (Congaree Riverkeeper)
Charlene Coleman (American Whitewater)
Stuart Greeter
Henry Mealing (Kleinschmidt)
Alison Jakupca (Kleinschmidt)
Shane Boring (Kleinschmidt)
Kelly Kirven (Kleinschmidt)

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

Alison opened the meeting with introductions and then reviewed the two objectives of the meeting: (1) to discuss the final Downstream Navigational Flows Assessment Report and determine if any additional follow-up is needed; and (2) to discuss the Downstream Recreation Flow User Survey Memo and identify recreation flow recommendations for the operations model. Alison reminded the group that the TWCs and RCGs will need to work together to balance the flow recommendations for the various resources (e.g., aquatic, recreation, navigation).

Downstream Navigational Flows Assessment Report

Shane reviewed the Downstream Navigational Flows Assessment Study Plan with the group, and discussed the two ledges that were identified as potential areas where navigation could be an issue. He explained that Ledge 1 was originally identified during scoping of the IFIM study plan and Ledge 2 was added to the Navigational Flows study plan during the mesohabitat assessment. The criteria for one-way navigation is defined as a "minimum depth of one foot across a channel 10 feet wide or across 10 percent of the total stream width, whichever is greater. Minimum depth does not need to occur across a continuous 10 percent of the stream width, but each point of passage must be at least 10 feet wide." One-way navigation criteria are based on the passage of a 14 foot Jon-boat without a motor in the downstream direction only.

An Acoustic Doppler Current Profiler (ADCP) was used to collect bathymetry data at the two ledges when flows were at approximately 6,000 cfs. Shane showed the group a series of images that were included in the report. These images are attached to the end of these notes. Shane explained that the black line drawn across the first image of Ledge 1 maps out the most restrictive

portion of the ledge. ADCP data shows that Ledge 1 provides navigation passage that meets the SCDNR recommended criteria for one-way navigation at flows as low as 500 cfs. Shane stated that a 500 cfs flow provided a passage point that was 32% of the stream width.

According to the navigation criteria, Ledge 2 is navigable at flows as low as 1000 cfs. However, Shane pointed out that the ledge comes very close to meeting the criteria at a flow of 700 cfs and even 500 cfs. Although the criteria isn't met for providing navigation across 10 percent of the stream width, there are passage points that provide enough width for a 14 foot Jon-boat to pass through. Gerrit asked if there was a minimum width as part of the criteria and Shane said that it's either 10 feet or 10 percent of the stream width. So in the case of Ledge 2, there is a notch at 500 cfs that is wider than 10 feet, but it's not 10 percent of the stream width. Shane stated that at 1000 cfs the passage width is 82 ft (10% of the stream width); at 700 cfs the passage width is 67 ft (8% of the stream width); and at 500 cfs the passage width is 30 ft wide (4% of the stream width)

Bill Marshall mentioned that the Bookman Shoals complex is another area in the river where navigation can be difficult for paddlers at lower flows. Shane said that Bookman Shoals was considered for inclusion when the Navigational Flows study plan was being developed. However, this area will be studied in much greater detail during the IFIM study, so additional information will be coming with that report. Shane also mentioned that since Bookman Shoals is a very braided area of the river, although it is rocky, there are more navigation points than might be obvious at first glance.

Gerrit mentioned that the study plan allows for the possibility of a field assessment to verify the report results. He is interested in completing that component of the study. Alison said that the one-way navigation criteria also mentions that it shouldn't be necessary to get out and drag your boat in order to navigate an area of the river, and a field verification exercise would demonstrate if this is necessary at the recommended flows. Henry suggested that the field verification be scheduled after IFIM results are out. We will likely perform field observations for IFIM results and navigation passage at the same time later in August/September.

Steve asked how flows will be balanced if 1,000 cfs is agreed on as necessary for navigation but the 7Q10 is different flow. He mentioned that Parr Reservoir is not a storage reservoir that might allow for greater flexibility in downstream flows. Henry said that we will use the Operations Model to assist in balancing between flows and water availability. The TWC will use the Operations Model results to develop a recommendation for consideration by SCE&G. Henry agreed that this project does not have a storage reservoir, which means that recreation flows will be extremely difficult to schedule, unlike at Lake Murray. We also will likely have a caveat for downstream flows being linked to inflows as well.

Charlene asked how many Jon-boats are actually on the Broad River downstream of the Project. She believes that mostly kayaks and canoes are used on this area of the river, since access is not great for Jon-boats. Gerrit said there are actually quite a few Jon-boats that get out there, utilizing private access. Charlene said she would be interested in knowing navigation issues from people who actually use this area of the river versus what the navigational flows assessment showed. Alison said this is another reason for doing a field verification. The information collected during the field verification will be included in an addendum to the navigation study report.

Bill S. said that after talking with Steve de Kozlowski, he was concerned that in the report, a straight line of navigation was used, thus excluding the most restrictive navigation points in the ledges. Shane said that a straight line was not modeled, instead the ADCP was run back and forth over each ledge approximately 10-20 times. This captured a 3D image of each entire ledge. The one-way navigation criteria was then applied to the ledge, which is a linear criteria. The idea was to pick the most restrictive area within each ledge. The black line depicted in the 3D figures included in the report are then used as the bed profile in the second set of report figures and compared to the linear criteria.

Gerrit said that using this ADCP technology, in addition to finding the most restrictive point, you could also map out the best course for navigation at each ledge. Shane agreed, and said that a grid showing the entire ledge can be exported from the data collected and the navigation course could be depicted there. This would give a good representation of what the shoal actually looks like. The group agreed that it would be helpful to have maps of this information for the two ledges and for the Bookman Shoals complex (if possible) to use during the field verification.

The report will be modified to mention that a field verification will be completed. Comments received on the report from SCDNR, American Rivers and Congaree Riverkeeper will be added to the report in an appendix. Once the field verification is completed, an addendum will also be added to the report discussing the results.

Downstream Recreation Flow User Survey Memo

Alison began the discussion by giving some background information on the memo. The Downstream Recreation Flows Study Plan was developed and a Focus Group meeting was held in 2014 to discuss what experiences recreators were having on the river downstream of the Project and to identify preferred flows for various activities. During that meeting, flows were narrowed down to a few preferred ranges. The Operations Model needs more specific flows at a specific time for input, so the ranges need to be narrowed down.

A second Focus Group meeting was originally planned for 2015 to again gather information on recreation experiences, however a survey was developed and distributed as a way to capture additional information instead. Alison mentioned that only four people responded to the survey, with only three respondents indicating that they had recreated in the study area the previous recreation season. However, the results of the survey were similar to the Focus Group discussion from 2014. Flow recommendations coming out of the survey were 2,000-5,000 cfs during May and/or June for canoeing, kayaking and higher flow boat fishing, and 500-999 cfs during May, June and July for lower flow boat fishing, hunting, wade fishing and swimming. Alison asked the TWC if they agreed with these recommendations and said the goal is to narrow down the ranges to specific flows for the Operations Model. Henry mentioned that the lower flow recommendation of 500-999 cfs is very close to what the Navigational Flow Assessment recommended. He suggested the group focus on picking flows from the higher range to run through the Operations Model.

Ray mentioned that the flow duration curves in the PAD show historically what flows are available at specific times. For example, a flow of 5,000 cfs may only be available for 30 percent of the time in May. Bill A. also mentioned that the wording of the settlement agreement will need to have flexibility since these flows will only be available when inflows allow. Gerrit said the goal is to include something that allows for a specific flow on weekends during the recreation season during a

specific timeframe, such as 8 AM until 1 PM. Gerrit said the benefit of recreation flows is to have something that people can depend on and schedule around. Gerrit indicated that he would like to see an attempt by SCE&G to provide a scheduled recreation flow if the water is available. Bill A. said that having a window of 6 hours would be much more doable than a 12 hour window, or an entire weekend, if the water is available.

Henry suggested to the group that flows of 2,000, 3,500, and 5,000 cfs during a 6 hour window on the weekends of May, June and July be run through the model. After some discussion, the group excluded 5,000 cfs since this high flow is also unlikely to occur often and expanded the timeframe to include the recreation season (May through September). The group agreed on the following recommendation for recreation flows to be run through the Operations Model:

- Flows of 2,000 cfs and 3,500 cfs
- Focus on weekends and holidays during the recreation season (May through September)
- 6 hour window (approximately 8 AM until 2 PM)

The group agreed that IFIM recommendations will likely cover the lower ranges of flows which would be ideal for activities such as wade fishing.

The meeting adjourned and action items are listed below.

ACTION ITEMS:

- Kleinschmidt will make maps for navigation through the two ledges and Bookman Shoals (if possible with the current data)
- SCE&G will schedule a field verification for navigation and fish habitat after the IFIM results are presented to the TWC for review.
- Kleinschmidt will add an appendix to the navigational flow report which will include the comments from SCDNR, American Rivers and Congaree Riverkeeper.
- Kleinschmidt will add an addendum to the Navigational Flows report which will include a report discussing the field verification results.