

MEETING NOTES

**SOUTH CAROLINA ELECTRIC & GAS COMPANY
SALUDA HYDRO PROJECT RELICENSING
IFIM/Aquatic Habitat TWC**

**SCE&G Training Center
July 8, 2008**

Final acg 8-11-08

ATTENDEES:

Alison Guth, Kleinschmidt Associates	Bill Argentieri, SCE&G
Alan Stuart, Kleinschmidt Associates	Ray Ammarell, SCE&G
Scott Harder, SCDNR	Vivianne Vejdani, SCDNR
Dick Christie, SCDNR	John Martin, SCDHEC
Shane Boring, Kleinschmidt Associates	Amanda Hill, USFWS
Mike Waddell, TU	Gerrit Jobsis, American Rivers
Tanjenique Paulin, SCDNR	Milton Quattlebaum, SCE&G

MEETING NOTES:

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 and noted that the purpose of this IFIM TWC meeting would be to discuss the Low Inflow Protocol (LIP) proposed by SCE&G. Alan Stuart informed the group that the Recreational Flows TWC has already met regarding this issue and has tailored their flow reductions with regards to the LIP. Ray Ammarell of SCE&G began to present on the LIP and noted that discussions began in association with representatives from DNR. He explained that they received input from DNR based on their current dealings with the drought. It was noted that Hope Mizzell, the state climatologist, had recommended the use of the US Drought Monitor for the LIP index. As Ray reviewed through his presentation, the group viewed the proposed guide curve for Saluda Hydro. Ray explained that they would strive to operated under the normal operating range under normal conditions. However, depending on the inflows and outflows they may be above or below the target level at any point in time.

As a side note, during discussions on the presentation, Gerrit Jobsis noted that he would like to discuss what would happen if SCE&G was below the guide curve. He noted that his main concern was that if in the future there was an advantage for the company to operate down below 358, then there is nothing in the license to prevent them from doing so. Furthermore, Gerrit explained that he believes there should be some sort of operating rule that prevents the reservoir from being drawn down two or three feet under normal conditions. Gerrit continued to note that there would need to be something included that if SCE&G was below the guide curve then there would be no

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discretionary generation. Bill noted that they would work to draft up wording to address Gerrit's concerns.

Ray continued the presentation on the LIP and explained the trigger bands set up for each level of the LIP. He pointed out that due to the topography of the Lake, the stage 1 trigger band was two feet wide, while the other bands were one foot. Ray explained, however, that he would be analyzing this further. He pointed out that there were some concerns expressed by lake owner groups on this issue. Ray also presented the group with a variety of graphs that included the recreation flows in the calculations as well as graphs depicting lake levels using the LIP reductions.

After Ray completed the overview presentation, he noted that the group needed to discuss the pulsing of flows proposed for the instream flows. Alan presented information provided by Bret Hoffman of Kleinschmidt which found that a 1.5 hour pulse of 3000 cfs provided the equivalent of 5 hours total passage time of 1300 cfs. This equates to 2 hours of sustained 1300 cfs flow and 3 hours of recedence time. The group discussed the time of day that these flows should be implemented, and Dick Christie noted that initially he believed that these flows should peak at dawn and dusk due to shad and herring movements. In the mean time, Dick noted that he would discuss this internally with DNR as to the best time of day for pulse flows. It was pointed out that if pulses were provided at both dawn and dusk it would provide a total of 10 hours of passage time during the day with 3 hours of generation.

The group then discussed Stage III pulse flows, and that there would only be one 3000 cfs pulse a day versus two pulses. Dick noted he would also find out the most critical daily passage time during which to provide the pulse flow during Stage III.

After discussions on the pulse flows were complete, the group discussed the width of the LIP trigger bands. Several group members suggested increasing all of the trigger bands to two feet in order to protect the river. Dick noted that he would not be in favor of reducing the stage 1 band from two to one foot. There was also the suggestion of increasing all of the trigger bands to two feet. Ray suggested that increasing all of the trigger bands to two feet would uncomfortably deplete the reservoir. Dick explained that they are truly trying to look at the balance of considerations, however, if there was a need to prioritize between the lake levels and the flows, they indicated early on that they would lean towards the flows. Amanda Hill added that she believed it would be better to retain the two foot stage 1 trigger level as well.

The group continued to discuss the trigger bands and Gerrit noted that it would be informative to see how frequently one would be in the different LIP trigger bands and proposed alternatives during the past 30 years of record. During lunch, the agencies and stakeholders caucused separately to discuss the proposed LIP trigger bands. After lunch, several alternative scenarios were proposed to the group for discussion. Gerrit noted that, in the past, the LIP has been implemented under extraordinary circumstances. He continued to add that it does not seem like one foot below full

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pool is an extraordinary circumstance. Bill Argentieri pointed out that the LIP does not kick in until the gaged streamflows were below the 25th percentile. It was added that recovery and dropping from normal stages is based on meeting all three indices.

The stakeholder and agency group presented the following four alternatives to be considered during modeling:

	LIP	alt 1	alt 2	alt 3	alt4
N	1 (ft.)	2	2	1	1
I	2 (ft.)	2	2	2	1
II	1 (ft.)	2	1	2	1
III	1 (ft.)	2	1	2	1
IV					

Alan posed the question to the group regarding how much value additional modeling adds to the proposal, as they had already met their 80% WUA goal. Gerrit replied that regardless of the percent WUA, they would like to see how often each band would be triggered under the LIP and above alternatives and how it relates to the natural hydrograph. The group briefly discussed the modeling scenarios with Jon Quebbeman of Kleinschmidt. Jon noted that their proposal could be done but it would have to be tied to stage and time of year and it would not exactly follow the LIP guidelines. Gerrit then asked what it would take to tie in the 28 day rolling streamflow data and USGS drought monitor data. Jon replied that it would require a modeling of the period where the data was available. Jon pointed out that the drought monitor data was only available from the 80's on, and the 28 day streamflow data was only available from the 90's on. He continued to note that it would require a new model run and a new model setup and would not carry through the whole period of record. Gerrit expressed that he believed this would answer his, and the other group members', questions. Bill noted that he would like Jon to first draft up a 1 to 2 page scope of work on what would need to be done so that they could ensure that everyone's needs were being met with what was being done the first time.

The group developed the following proposal for Jon:

- Using table listed above:
 - For LIP and four alternatives, based on flow record only, provide the number of days in each stage and percentage of year in each stage for the period of record
 - Provide the number of days in each stage and percentage of year in each stage for LIP and four alternatives from the 90's on to the present where three drought indices are also available

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After the proposal was developed, the group completed discussions and scheduled the next TWC meeting for August 5th. The group adjourned.