

**MEETING NOTES**

**SOUTH CAROLINA ELECTRIC & GAS COMPANY  
SALUDA HYDRO PROJECT RELICENSING  
All RCG's Meeting**

**Saluda Shoals Park  
May 22, 2008**

final ACG 8-11-08

---

**ATTENDEES:**

Alan Stuart, Kleinschmidt Associates  
Alison Guth, Kleinschmidt Associates  
Tommy Boozer, SCE&G  
David Hancock, SCE&G  
Ron Ahle, SCDNR  
Randy Mahan, SCANA Services  
Dick Christie, SCDNR  
John Frick, Landowner  
Jim Cumberland, SCCCL  
Tim Vinson, SCDNR  
Regis Parsons, Landowner  
Wendy Schneider, Landowner  
Jennifer Richardson, Landowner  
Jennifer Price, SCDNR  
Bill Marshall, SCDNR, LSSRAC  
Dan Tufford, USC  
Bill Brebner, YCOA  
Trisha Priester, Lexington County  
Tom Bowles, SCE&G  
Steve Bell, Lake Watch  
Doug Keisler, Landowner  
Feleke Arega, SCDNR  
Bill Mathias, LMPS  
Steve Summer, SCANA  
Mark Giffin, SCDHEC  
Jon Quebbeman, Kleinschmidt Associates  
Jim Ruane, REMI  
Ray Ammarell, SCE&G  
Gerrit Jobsis, American Rivers  
Bret Hoffman, Kleinschmidt Associates

Malcolm Leaphart, TU  
Reed Bull, Midlands Striper Club  
Mike Summer, SCE&G  
Dave Anderson, Kleinschmidt Associates  
Kristina Massey, Kleinschmidt Associates  
Ed Diebold, Riverbanks  
Shane Boring, Kleinschmidt Associates  
Richard Mikell, Adventure Carolina  
American Whitewater  
Don Tyler, LMA  
Dave Landis, LMA  
Bertina Floyd, LMHOC  
Karen Kustafik  
Tanjenique Paulin, SCDNR  
Milton Quattlebaum, SCE&G  
Joy Downs, LMA  
Linda Schneider, Landowner  
Ellis Harmon, Landowner  
Steve Bell, LW  
Bill Argentieri, SCE&G  
Tony Bebbler, SCPRT  
Van Hoffman, SCANA  
Phil Hamby, Landowner  
Roy Parker, LMA  
James Leslie, Lake Murray Docks  
Suzanne Rhodes, SCWF  
Bob Keener, LMA  
Kenneth Fox, LMA  
Tom Ruple, LMA

**DATE:** May 22, 2008

---

**INTRODUCTIONS AND DISCUSSION**

*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.*

Bret opened the meeting and introduced Jon Quebbeman as the first presenter of the morning. Jon presented the group with a presentation on the hydraulic operations model for the Project (presentation can be viewed at <http://www.saludahydrorelicense.com/documents/May2008ModelResultsPresentation.pdf>). The presentation provided the group with general background information on the model and how it functions, as well as the flow and reservoir level requests that had been initially made by the RCG's and TWC's. Gerrit Jobsis asked how the lake levels in the model tied to the low inflow protocol (LIP). Jon replied that the model does incorporate the LIP to some degree as there are adjustments to the recreational flows during different stages of the LIP. Steve Bell asked if the guide curve that Lake Greenwood uses was being incorporated. Jon noted that Greenwood would be taken out of consideration as they are back-calculating the inflow into the reservoir. Jon also added that Greenwood was only a small part of the entire watershed. Jon continued and noted that they incorporate flood forecasting into the model to some degree.

As Jon continued discussions on the model, the topic of the water quality drawdown was brought to the table. As discussions on the topic continued, Dick Christie pointed out that the model is a tool to help the group make better decisions, and what was being presented by SCE&G was one operational scenario. Dick C. continued to explain that DNR would have to seriously consider their support for a drawdown that severely harmed the other resources.

Jon explained the recreational flows that were chosen by the TWC and the tiers that were assigned to the flows. Jon noted that many of the tier 2 flows were wade fishing flows, which correspond to minimum flows. Therefore, Jon pointed out, even if the area was in a drought stage that tier 2 recreation flows were taken out, the minimum flows provided at the project would be comparable to wade fishing flows. Gerrit noted, referring to the number of reserve generation hours calculated into the model, that reserve was not likely to be that high. He continued to ask what the implications on lake level were when releasing the water for 20 hours per month versus one day per month. Jon explained how he incorporated the reserve hours and noted that he tried not to place the reserve releases before or after a recreation day in the model. He continued to note that the time that the model spends in the lower drought zones was more affected by dryness than reserve releases. The group viewed how many missed recreation days were calculated under the operational scenario. John emphasized that the number of recreation days calculated were missed over the 66 year period of record, not one single year.

Jon noted that the next steps would be to: finalize the model inputs; summarize the duration and magnitude of deviations; evaluate March 1<sup>st</sup> El 358' vs. April 1<sup>st</sup>; present final model results. Alan suggested that Jon also put together a memo summary of the model and the information presented in layman's terms. Jon noted that he would distribute this to the group.

The floor was opened for questions and Reed Bull asked what recreational events made up the different tiers. Jon replied that this information was included in the recreation table. Phil Hamby asked what the potential was for having new recreational flows in the future. Bill Argentieri replied that the TWC has addressed downstream flows in acre-feet, therefore the group can adjust allocations in a meeting the year before to accommodate new flows. Steve Bell noted that he

believed that each month should be modeled and the number of times lake level goal is going to be deviated for that month. Bill Argentieri suggested that once the group can reach agreement on a guide curve, then they may want to look at the model more closely in reference to Steve's question. Reed Bull pointed out, in reference to the lake level of 354', that to his knowledge there has only been one true survey of what individuals desires were around the lake (referring to the LMA survey). Reed continued to note that in response to one of the questions in the LMA survey, individuals responded that fishing and swimming were the most participated in recreational activities on the lake. Reed noted that he has discussed the lower pool level of 354' with several biologists who believe that a lake drawdown for water quality is important. Reed added that water quality was crucial to the most participated in recreational activities of fishing and swimming.

The group concluded comments on Jon's presentation and after lunch, Ray Ammarell began his presentation on the proposed guide curve and the low inflow protocol (LIP). The presentation may be viewed at

<http://www.saludahydrorelicense.com/documents/SaludaHydroGuideCurveandLIP.pdf>. Ray reiterated that this was simply a proposal by SCE&G. Ray explained that in the guide curve evaluation, they have 358' being reached by March 1, however in Jon's evaluation 358' was reached by April 1<sup>st</sup>. Ray explained that both dates were being considered. It was asked if a guide curve was developed based on model results. Ray replied that it was not, and that SCE&G had taken the previous guide curve and incorporated the recommendations that they had received. Gerrit Jobsis then asked what kind of assurance they had that the guide curve will be maintained. Ray noted that there would likely be wording to that effect in a settlement agreement. The question was posed as to why the lake level was being left above 358' currently. Bill Argentieri explained that because we are in a drought, they want to make sure there is enough water available.

Ray then discussed the proposed LIP with the group. In reference to the different levels of the LIP, Malcolm Leaphart asked if historical data was used to set these levels. Ray replied that he has used the historical data and has developed a more simplified version of the hydraulic model for the LIP. He continued to note that the LIP makes a big difference in how fast the lake levels drop and how quickly it is able to return to target elevations. Ron Ahle noted that he would like to know what percentage of the year would be projected to spend in each one of these stages. Ray replied that the hydraulic model would reflect that information, although it would be approximate. Gerrit Jobsis then asked how operation of the Project for reserve and discretionary purposes was taken into account. Ray explained that they anticipated that the Project would be available for reserve any time when the water is between 345' and 360'. Bill Argentieri added that the only reason why the lake was at full pool currently is because the hydro plant has cut back their downstream flows to 200 cfs. He continued to explain that if they currently had the proposed minimum flows implemented, the lake would not have been able to rebound as fast as it did. Tony Bebbler asked at what level would the water withdrawals start to cut back. Ray replied that they typically let the Drought Advisory Committee and the DNR handle that.

The group discussed what the next steps should be with regard to the hydraulic model, LIP and guide curve. Jon reiterated that he would summarize the preliminary model runs and the data and issue a memo to the group. Bret Hoffman also added that they needed to convene the RCG groups to discuss the results and discuss the LIP a little more. Bret also noted that they anticipate more input requests for model run scenarios, however this can become very cumbersome, very quickly, so they ask that the number of scenarios be kept to a reasonable level. Bret closed the meeting and

noted that the IFIM TWC would need to reconvene in order to discuss the LIP flows. Also, the Recreation TWC will also be reconvening to revise some of the recreation flows.

Meeting Adjourned.

**MEETING NOTES**

**SOUTH CAROLINA ELECTRIC & GAS COMPANY  
SALUDA HYDRO PROJECT RELICENSING  
All RCGs Operations Meeting**

**Saluda Shoals Park  
October 12, 2006**

Final acg 11-13-06

---

**ATTENDEES:**

Alison Guth, Kleinschmidt Associates	Shane Boring, Kleinschmidt Associates
Alan Stuart, Kleinschmidt Associates	Dave Anderson, Kleinschmidt Associates
David Price, LM Power Squadron	Amy Bennett, SCDHEC
Kim Westbury, Saluda County	Jim Ruane, REMI
Bret Hoffman, Kleinschmidt Associates	Trisha Priester, Lexington County
Ronald Scott, Lexington County	Andy Miller, SCDHEC
Patrick Moore, CCL, AR	Reed Bull, Midlands Striper Club
Ron Ahle, SCDNR	Brandon Stutts, SCANA Services
Kristina Massey, Kleinschmidt Associates	Mike Schimpff, Kleinschmidt Associates
Bob Olson, NRE	Tom Bowles, SCE&G
Jenn O'Rourke, SCWF	Richard Mikell, Adventure Carolina
Dick Christie, SCDNR	Bob Perry, SCDNR
Jeff Duncan, NPS	Theresa Thom, NPS
Tony Bebbler, SCPRT	Ed Schnepel, LMA
Tom Ruple, LMA	Ed Diebold, Riverbanks Zoo
Bob Seibels, Riverbanks Zoo	Jon Quebbeman, Kleinschmidt Associates
Bill Argentieri, SCE&G	Mike Waddell, Saluda TU
Karen Kustafik, CoC Parks & Rec	Amanda Hill, USFWS
Bill Brebner, YCOA	Kenneth Fox, LMA
Roy Parker, LMA	Bob Keener, LMA & LMSCA
Steve Summer, SCANA Services	Bud Badr, SCDNR
Randy Mahan, SCANA Services	Bob Keener, LMA
Ray Ammarell, 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.*

Alan Stuart of Kleinschmidt Associates welcomed the group and noted that the purpose of this meeting was to introduce two items to the RCG members, a presentation on the research SCE&G has done on Alternative Energy Sources, and secondly to discuss the HEC-ResSim Operations Model. Alan noted that in order to aid in the understanding of hydrology when discussing the model, Dr. Bud Badr would also be providing the group with a hydrology 101 presentation. Subsequent to Alan's introduction, the following presentations were given (click below to view)

## **MEETING NOTES**

### **SOUTH CAROLINA ELECTRIC & GAS COMPANY SALUDA HYDRO PROJECT RELICENSING All RCGs Operations Meeting**

**Saluda Shoals Park  
October 12, 2006**

Final acg 11-13-06

---

Alternative Energy Source Presentation – *Carl Hoadley & Skip Smith SCE&G:*  
<http://www.saludahydrorelicense.com/documents/ALTERNATIVEGENERATION.pdf>

An Understanding Of Hydrology – *Dr. Bud Badr : Coming Soon*

Discussion On The HEC-ResSim Operations Model – *Mike Schmipff & Jon Quebbeman – Kleinschmidt Associates :* <http://www.saludahydrorelicense.com/documents/SaludaProject10-12a.pdf>

Following the presentation on Alternative Generation, the floor was opened up for questions. One individual asked how the reliability numbers presented in the presentation were calculated. Carl H. replied that in order to calculate those numbers, they looked at forced outage rates, routine maintenance, as well as industry numbers. Bill A. also explained that many of the equipment cost numbers come from recent numbers that the vendors supplied. The group also briefly discussed how future demands will be fulfilled. One individual asked if SCE&G has evaluated how Saluda may be used in the future. Steve S. replied that SCE&G is looking at fulfilling future capacity needs through a nuclear station. There was also brief discussion regarding the use of Saluda over the past year. Bill A. explained that last year SCE&G tried to keep the lake level up around 358' and because of this, they had to get rid of the rainwater that entered the system rapidly to avoid exceeding the normal high water level. Due to problems with some of the other units at Saluda, Unit 5 was run to expel the excess rainwater. Reed B. also asked if there was any way to look at how Saluda was used for reserve in the past in order to predict how Saluda may be used for reserve in the future. Randy M. noted that because of the unpredictable nature of reserve calls, it would be difficult to forecast how often they may be called upon for reserve in the future. Patrick Moore asked if the alternatives analysis had considered partial replacement of only 50 or 100 MW because the most problematic impacts occurred at high flows. Bill A. replied that the Code of Fed. Regulations only required the full replacement cost analysis and that no partial analysis had been done. Later in the meeting Patrick commented that the 34 million dollar relicensing cost cap was an internal, SCE&G figure and that it in no way limited what SCE&G would be required to spend to address project impacts. He cited a recent court of appeals case that stated FERC has no obligation to issue an economically viable license.

After a short break, Dr. Bud Badr gave a presentation on hydrology to the group. There were no questions following Dr. Badr's presentation.

The next presentation was given by Mike Schmipff and Jon Quebbeman on the HEC-ResSim model developed for Saluda. The presentation can be viewed from the link above. Mike S. explained that the HEC-ResSim model was used for Lake Murray and was incorporated with the HEC-Ras model for the lower Saluda River. The floor was open for questions throughout the presentation. Tony B. noted that in the last 16 years he doesn't believe there have been any major flood events, and asked if something was built into the model to account for this. Mike S. explained that this being a water

***MEETING NOTES***

***SOUTH CAROLINA ELECTRIC & GAS COMPANY  
SALUDA HYDRO PROJECT RELICENSING  
All RCGs Operations Meeting***

***Saluda Shoals Park  
October 12, 2006***

Final acg 11-13-06

---

allocation model, he was not as concerned about the high flow times because water can be allocated for all the needs. He noted that the concern lies in the low flow times. Jeff D. asked if data from the Catawba Wateree model could be integrated into the Saluda model. Jon Q. noted that it was possible to add in other data to the model, however he noted that he did not believe it would be necessary or appropriate to add the Catawba data in.

The group began to discuss in a little more detail the constraints to be developed by the Resource Conservation Groups. Dave A. asked if the flows in the lower Saluda River can be calculated at the gage by the Zoo. Jon Q. replied that it could. Dave A. also asked if the model could predict what would happen when Saluda is used for reserve. Jon Q. explained that they were going to handle this by adding in, for example, 200 MW, 1 day a month, for 24 hours. Dave A. asked how the constraints will be obtained from the Resource Conservation Groups. Jon Q. noted that it depended on the RCGs time schedule, once an RCG makes a recommendation for the model, he could input the data. Ron A. added that he believed that instream flows would be the last input to the model. Mike S. and Jon Q. concluded their presentation and the group adjourned.