

**MEETING NOTES**

**SOUTH CAROLINA ELECTRIC & GAS COMPANY  
SALUDA HYDRO PROJECT RELICENSING  
WATER QUALITY TWC TMDL SUB-MEETING**

***Kleinschmidt Offices  
May 3, 2006***

*6-8-06 final acg*

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***ATTENDEES:***

Alan Stuart, Kleinschmidt Associates  
Alison Guth, Kleinschmidt Associates  
Andy Miller, SCDHEC

Jim Ruane, REMI  
Dan Tufford, USC  
Wayne Harden, SCDHEC

DATE: May 3, 2006

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

**DISCUSSION**

During the March 24<sup>th</sup> Water Quality TWC meeting, the TWC members decided that the issues regarding TMDL would be better discussed during a small group session initially with Jim Ruane, Dan Tufford and Andy Miller as members. Prior to this meeting, and after email correspondence, the above listed individuals developed a list of agenda items to discuss and developed a meeting date. The agenda items are listed below:

1. The need for a TMDL on Lake Murray. Should it focus on the Western side of the impoundment?
2. The Sufficiency of a W2 model as a component of a TMDL
3. Is the current W2 a potential component (in principle) or would we need a new one focusing on the Western end?
4. What other models would be needed to supplement the in lake processes model?
5. What kind of extra monitoring would be needed?
6. What other data would be needed?
7. Current modeling objectives vs. TMDL objectives
8. Model documentation availability
9. Larger modeling issues and concerns
10. How to proceed.

Dan Tufford opened the meeting and expressed that he believed that Relicensing was a good forum to begin working towards a TMDL by doing the analysis phase, since all the appropriate individuals were already "at the table" so to speak. He noted that he felt that it could be performed within the framework of the relicensing to achieve an end product that could be usable to DHEC. Alan Stuart asked if Dan T. could further explain how the TMDL was related to the relicensing of the Project,

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and what further information on this issue was needed in order for the FERC to perform the NEPA analysis. Dan T. replied that he believed that given the term of the license, the group needed to look ahead in regards to future compliance with water quality standards. Dan T. also noted stakeholders have made it clear to him that they had concerns on the upstream conditions and added that he would encourage SCE&G on a corporate level to consider those concerns. Jim Ruane replied that he believes that SCE&G does consider those concerns and that the current model (W2) could help with a TMDL down the road. He added that the data in the model can be built upon and added to. After continued discussion on this topic it was noted that although this issue may not be directly linked to the issuance of a new project license that it may have positive benefits for SCE&G. It was also noted that relicensing may be beneficial toward the future implementation of a TMDL in that it will provide a forum for documentation of discussion on this topic and how the W2 may be beneficial in the TMDL. Dan Tufford explained that the group should first move forward by looking at the current W2 model.

The group looked at the first agenda item and began to discuss areas of concern. Andy Miller noted that he was currently looking at the western stations and asked if it would be appropriate to model those points with the W2 model. Jim R. noted that there were slight roadblocks due to the lack of data at a couple of the points. He explained that the current W2 could be used to examine some of the points that were mentioned (specifically mentioning Station 222) and the more data could be collected if needed. The group noted that the two stations of concern that were currently listed were S-222 and S-309. Andy M. asked Jim R. if he believed there was enough data at these locations to calibrate a W2 model. Jim R. replied that he did not believe there was enough information, however he noted that he did believe that a Bathtub Model could be implemented. Jim R. further explained that the W2 could help in an understanding of the dynamics of the system before a simpler model was used. The group also decided to check on the amount of data available at station S-310. There was also discussion of the use of a watershed-scale model to address some of the issues that cannot be assessed with a model such as W2. Dan T. mentioned the WARMF model and that one of its strengths in this context is that it can use a W2 model as the reservoir component model. This would allow us to leverage Jim's work in Lake Murray and another W2 model for Lake Greenwood.

In discussions on a TMDL's focus on the western side of the Lake, Jim noted that in reference to the issue of the "oxygen crunch period" and its implications on striped bass and blueback herring, Bush River reductions would probably have the biggest improvements for striped bass. Jim R. continued to note that a western focus alone may not directly address the issues with the striped bass. Wayne Harden agreed that in order to address that issue a TMDL needs to include the upward sections of the Lake.

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The group continued to discuss the sufficiency of a W2 model as a component of a TMDL. Jim R. noted that the W2 could be useful in order to look at what data was available now and to help define data needs, it was also a good way to understand what was happening at the Stations. Andy M. asked if Jim R. could further define the goals of the current W2 from a water quality standpoint. Jim R. replied that the goals were to 1) look at the effects of operational changes on water quality, 2) to look at the effects of the operation of unit 5 on striped bass habitat, 3) to look at Phosphorus loads with the hopes of DHEC implemented Phosphorus reductions, 4) a contribution that SCE&G can make after relicensing.

It was noted that whatever was done in regards to TMDLs would have to coincide with what was feasible at DHEC. Andy M. noted that there were tight and busy schedules at DHEC and he would have to discuss this more in depth internally.

Agenda item number 8 focuses on model documentation availability, and the group briefly discussed this topic. It was agreed at the last TWC meeting that a confidentiality non disclosure agreement of the draft W2 model and report would be prepared for Dan T. and Andy M. signature. After numerous revisions of the agreement, the matter was unresolved at the time of the meeting. Additional discussions were had regarding this matter. Alan indicated that all documentation would be made available after the W2 model and report was finalized based on the requested upgrades March 24, 2006 TWC meeting, thus eliminating the need for a confidentiality agreement.

Jim R. explained briefly what changes to the W2 model he was to incorporate and noted that the model would only be made available to the agencies until the license was complete. He pointed out that sharing the model to individuals other than the agencies without the signing of the agreement was a process risk. After much discussion on this topic it was noted that the written report would be finished in the next few months and would be shared with the group then.

The meeting began to come to a close and the group discussed how to proceed. Alan S. and Dan T. briefly discussed what extent SCE&G should/may want to play a role in the TMDL process. It was noted that there were many other concerns that SCE&G has to consider during relicensing. Alan S. noted that he would have further discussion with SCE&G as to the scale of their focus regarding this. Alan S. noted that there may be the opportunity for Dan T. to talk to SCE&G regarding this directly. Dan T. also mentioned that he would meet with the stakeholders that he is talking with in order to more clearly define what their objectives were in regards to water quality and its relation to relicensing. Jim R. reiterated that he would take the next few months to calibrate the model with the new work arounds and finalize the written report. He noted that he would be ready to prepare a package for DHEC if they would like. Andy Miller noted he would check to see if it was needed. Jim R. also briefly pointed out that DHEC may want to consider approaching NRCS about

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modeling and that there may be federal assistance available. The group adjourned and noted that any future meetings would be scheduled after Homework Items were completed.

**HOMEWORK ITEMS:**

- Jim Ruane – Finish additional W2 model calibrations and to finalize written report
- Andy Miller – Check on what data is available at station S-310, as well as internal discussion with DHEC on what was feasible from a DHEC standpoint in regards to a TMDL, would a W2 package be needed, and if NRCS could provide modeling assistance.
- Alan Stuart – Discussions with SCE&G on what their vision was in regards to TMDL and relicensing and if there was an opportunity for discussions with Dan Tufford on this topic.
- Dan Tufford – Discussions with represented stakeholders on intentions to meet more clearly defined objectives. Preparation for possible discussion with SCE&G.

**The following comments in email format were sent after the draft notes were issued and are included in the record:**

-----Original Message-----

**From:** Alison Guth  
**Sent:** Thursday, May 18, 2006 5:01 PM  
**To:** Alan Stuart; 'Dan Tufford'; 'Jim Ruane'; 'Andy Miller'; 'wharden@mindspring.com'  
**Cc:** Tom Stonecypher; Alan Stuart; Alison Guth; Amanda Hill; Andy Miller; Bill Argentieri; Bill Hulslander; Bill Marshall; Brett Bursey; Cam Littlejohn; Charlene Coleman; Charles Floyd; Craig Stow; Daniel Tufford; Dick Christie; Don Tyler; Donald Eng; Ed Diebold; George Duke; Gerrit Jobsis (American Rivers); Gina Kirkland; Hank McKellar; Jeff Duncan; Jennifer O'Rourke; Jim Glover; Jim Ruane ; John Davis (johned44@bellsouth.net); Joy Downs; Karen Kustafik; Keith Ganz-Sarto; Kim Westbury; Larry Turner (turnerle@dhec.sc.gov); Malcolm Leaphart; Mark Leao; Mike Sloan; Norman Ferris; Patrick Moore; Prescott Brownell; Ralph Crafton; Randy Mahan; Reed Bull (rbull@davisfloyd.com); Richard Kidder; Robert Keener (SKEENER@sc.rr.com); Ron Ahle; Roy Parker; Shane Boring; Steve Bell; Steve Summer; Suzanne Rhodes; Tom Bowles (tbowles@scana.com)  
**Subject:** Meeting Notes Comments - May 3rd

Hello all,

There has been several sets of changes made to the May 3rd meeting notes. As I have been doing in the past with such matters, I am sending out a copy with changes before they become final on May 26th. While reviewing the document please note that its primary purpose is to provide a general but accurate overview of the course of the meeting and the topics discussed there-in, and not delve too far into the minutia of "he said, she said". Please have any further comments on this document to me by the 26th. Thank you. Alison

-----Original Message-----

From: Dan Tufford [<mailto:tufford@sc.edu>]  
Sent: Thursday, May 25, 2006 10:34 AM  
To: Alison Guth  
Cc: Alan Stuart; 'Jim Ruane'; 'Andy Miller'; 'wharden@mindspring.com'; Bill Argentieri; Randy Mahan  
Subject: Re: Meeting Notes Comments - May 3rd

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Hello Alison,

Of course these notes are full of "he said, she said" so the minutia you are referring to must be the comments of mine that you excised as if they had not been there in the first place. I strongly believe there is a need to set the record straight.

We were told during the May 3 meeting that SCE&G reacted negatively to my refusal to sign the agreement. I assume this means Randy and/or Bill. I have not had the opportunity to get to know either of them very well yet, but my impression from the meetings is that both are very reasonable people. So the only way they could react negatively is if they were given a distorted explanation of the facts of the situation.

The agreement I was asked to sign contained extensive language detailing stipulations and provisions that I knew nothing about and that had not come up in the meeting in which I agreed to sign a non-disclosure agreement. I asked to have the language removed and when that request was refused then I refused to sign the agreement.

No reasonable person would think negatively of me or anyone else for refusing to sign an agreement like that, especially after making a good faith attempt to get the extraneous language removed. Apparently KA considers this minutia. As reasonable people yourselves, I am sure you can understand why I do not. That is the issue my comments were attempting to deal with.

If the agreement and the documentation were a minor point in the process I would not be that concerned that this issue be clarified. But as I predicted all along, the meeting was much less effective than it could have been due to the fact that I was still uncertain about the details that I wanted to see about the model.

I will be happy to work with you on the specific wording, but some language that sets the record straight needs to be in the minutes. If you take a stab at it I want to review it before the minutes are considered final.

Regards,  
Daniel L. Tufford, Ph.D.  
Research Assistant Professor  
University of South Carolina  
Department of Biological Sciences  
Sumwalt 209A (office)  
701 Sumter Street, Room 401 (mail)  
Columbia, SC 29208

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e-mail: [tufford@sc.edu](mailto:tufford@sc.edu)

web: <http://www.biol.sc.edu/~tufford>

Ph: 803.777.3292 Fx: 803.777.3292

-----Original Message-----

From: Alan Stuart

Sent: Thursday, May 25, 2006 10:39 PM

To: 'Dan Tufford'; Alison Guth

Cc: Alan Stuart; 'Jim Ruane'; 'Andy Miller'; 'wharden@mindspring.com'; Bill Argentieri; Randy Mahan

Subject: RE: Meeting Notes Comments - May 3rd

Dan,

I would like make a clarification. What I said at the meeting was that your initial refusal to sign the original agreement raised concerns by KA/REMI and SCE&G. I never inferred or said that SCE&G acted negatively to your refusal nor thought anything negatively about you. I did say I was personally struggling to understand if a state agency such as DHEC, who has authority in regulating TMDL's, had no problem signing the agreement as originally written then why was it unacceptable to you. Again, this was me speaking, not speaking on behalf of SCE&G. As you recall we had numerous subsequent discussions which were not all recorded as part of the summary. Further, I did not see where my statements above added any positive value to the summary so I did not see it necessary to include them as part of the record. Our goal was simple, to capture the meat of the disagreement(s) and resolution.

As I stated, I did not add to the minutes all of this extraneous language contained in my opening paragraph of this email because I saw it having little value to the summary. I believe the main points of the dialogue were: issues were taken on the original agreement, problems existed on the revised agreement, and ultimately the agreement was not signed by the parties prior to the meeting. Therefore, no resolution was reached on the matter of the releasing the parameterizations/calibrations on the draft W2 model. While it is unfortunate we could not reach agreement prior to the meeting on the agreement we obviously can still move forward. As you recall, I did state that the information would be released (July timeframe) when the W2 Model was finalized. This is what you are ultimately seeking and anyone reading the minutes can effectively understand that there were disagreements on the wording in the agreement (and revised agreement) but we did reach resolution on releasing the information. This in essence in my opinion is what's important and believe this to be a totally reasonable and pragmatic approach.

In my opinion, your added language will likely require clarifications/additions from other meeting attendees and will only serve to create a verbose lengthy transcript. This is not the point of the meeting summaries as stated in the operational procedures. They summaries are a courtesy service provided for those individuals not present at the meetings.

However, if you are steadfast in getting some of this specific material in some form of the record, may I suggest we just include this email in the record. I believe your email captures the message, theme, and spirit of what you want to convey.

Regards,  
Alan

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Senior Licensing Coordinator  
Kleinschmidt Energy and Water Resources  
101 Trade Zone Drive Suite 21A  
West Columbia, SC 29170

-----Original Message-----

From: Dan Tufford [<mailto:tufford@sc.edu>]

Sent: Friday, May 26, 2006 10:58 AM

To: Alan Stuart

Cc: Alison Guth; 'Jim Ruane'; 'Andy Miller'; 'wharden@mindspring.com'; Bill Argentieri; Randy Mahan

Subject: Re: Meeting Notes Comments - May 3rd

Hello Alan,

Our recollection of this differs somewhat, but I appreciate your elaboration of why my edits to the meeting notes were altered. I fully understand how difficult it is to distill the important material from long meetings into a coherent set of minutes. As I have stated before, I appreciate the work that KA does in this regard.

I am not sure what constitutes "the record" in these proceedings, but I accept your suggestion that this e-mail exchange be included.

Regards,  
Dan

-----Original Message-----

From: Jim Ruane [<mailto:jimruane@comcast.net>]

Sent: Thursday, June 08, 2006 9:02 AM

To: Dan Tufford; Alan Stuart; Alison Guth; 'Andy Miller'; wharden@mindspring.com

Cc: Bill Argentieri; Randy Mahan

Subject: Re: Meeting Notes Comments - May 3rd

I apologize for taking so long to respond to these emails, but would like to offer the following comments for the record.

Concerning Dan Tufford's comments about the agreement for release of certain information about the Lake Murray CE-QUAL-W2 water quality model, we think it's important to have such an agreement through out the duration of the relicensing process.

SCE&G wants water quality analyses and modeling to be conducted in an open process that allows stakeholders to effectively review what is being done to the extent practicable. However, due to the complexity of models and the need to support only one model for the main body of Lake Murray, an agreement is needed to provide understandings between reviewers and SCE&G's modelers. The agreement

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is intended to protect SCE&G's investment in the model; to provide a means for incorporating modeling in an orderly process for relicensing; present a process for conflict resolution; and provide general information about the modeling process used by SCE&G's modelers.

As was promised at the TWC meeting on March 24, we modified an existing agreement that has been used before in South Carolina. We plan on using this agreement for the foreseeable future, probably through out the relicensing process, for most all stakeholders, subject to them being approved by SCE&G for getting the model or information regarding the calibration of the model.

It's anticipated that the agreement would be similar for all reviewers, so some reviewers may consider the agreement to be overly protective. However, for those who are interested in limiting their objectives to reviewing and commenting on the model or considering the model for future uses, the agreement is expected to be satisfactory. The agreement requires that all modeling supported by SCE&G be conducted by their consultant, and that competing models for simulating water quality for the same or similar purposes on Lake Murray will not be considered (i.e., models that would simulate operations and water quality for the main waterbody of Lake Murray). Reasonable requests for model calibration checks and model applications will be considered by SCE&G. SCE&G is interested in developing a good water quality model and allowing it to be used in the future for improving water quality in Lake Murray.

I thought we had a fruitful meeting on May 3. However, it was not possible to provide some of the information that Dan requested, especially considering that the upgraded model is being developed over the coming months. He had asked for detailed model information that will be revised during the course of the model upgrade. Also, the TMDLs being considered for Lake Murray that require modeling were not planned to be developed before the new upgraded model would be ready for use. Hence, we questioned the urgency for his request at this time.

When the upgraded model is developed, a draft calibration report will be prepared and issued to the TWC for their review. We are not planning to release additional detailed information to anyone unless they sign the agreement, and even then some information will be withheld to avert others from developing a similar model on Lake Murray.

This approach has been used successfully over the past two years, and we are optimistic that it will prove successful for relicensing of the Saluda Project.

Thanks, Jim

Richard J. Ruane, Reservoir Environmental Mgt., Inc.

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900 Vine Street Suite 5  
Chattanooga, TN 37403