# SOUTH CAROLINA ELECTRIC & GAS COMPANY SALUDA HYDRO PROJECT RELICENSING GENERATION REVIEW TWC

# Lake Murray Training Center July 11, 2006

8-17-06 final acg

## ATTENDEES:

Alan Stuart, Kleinschmidt Associates Alison Guth, Kleinschmidt Associates Bill Argentieri, SCE&G Bill Marshall, DNR, LSSRAC Michael Waddell, TU Patrick Moore, SCCCL, Am. Rivers Steve Bell, Lake Watch Randy Mahan, SCANA Services Tom Eppink, SCANA Services Karen Kustafik, City of Columbia Parks Theresa Thom, Congaree National Park

DATE: July 11, 2006

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.

### HOMEWORK

- Provide flows for FFPS *Bill A*
- Look into providing low and high cost of MW for last 10 years Bill A
- Provide list of additional questions to Bill A *TWC members*
- Arrange for corporate attorney to attend next RCG/TWC meeting to respond to confidentiality issues *Bill A*
- Send Mike Waddell the FERC form for the other  $\frac{3}{4}$  of 2005 Bill A
- Arrange for Lee Xanthakos to attend the next RCG meeting *Bill A*
- Prior to next RCG meeting, email Bill A. dates from which information is requested on how plants were operated *TWC members*

### **DISCUSSION**

Alan Stuart welcomed the group and noted that the meeting had been convened at the request of stakeholders, and the primary purpose was to review the information



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distributed by Bill Argentieri (listed in blue) after the April meeting. The group decided to review each of the items and discuss questions as they came up.

1. Provide a weekly generation report for all of the plants on the SCE&G system. At this time the group would like to see one of these reports, let's say the week of August 28, 2005. If it provides the group with the information we are looking for, I will obtain a copy of each week from January 1, 2005 through December 31, 2005.

Response: The data requested regarding prior operation of all plants on our system is not maintained in the manner requested. We do not keep a weekly aggregate of generation for our plants. Thus, this information is not readily available. In addition, generation information at this level of detail is business-confidential and market-sensitive information. Disclosure of this information could result in substantial damage to SCE&G's position as both a purchaser and seller of energy in unregulated regional energy markets. Once information of this nature is disclosed to the market, there is no practical way to undo damage to SCE&G and its customers.

Nevertheless, in an effort to give you all available non-confidential material, attached are excerpts from the FERC Form - 1 annual filing made by SCE&G at the Federal Energy Regulatory Commission for the calendar year ending December 31, 2005. These excerpts include the annual generation for each of SCE&G's facilities.

After the group reviewed the first question Steve Bell asked if records were available on how SCE&G operated its system to meet demands for a given day. Bill A. replied that they do not have all that information in one place. He noted that each plant maintains a record of how they operate, however it is not all in one form. Bill A. also noted that they do provide some information to the Public Service Commission, however, the detail that the group has requested is not for the general public to have access to. Steve asked if the group could pick out particular days in order to receive information on, and Mike Waddell suggested that the past plant outage in May be used as an example. Bill noted that he had information on the past plant outage in June but not in May. Bill A. briefly reviewed the June 21 occurrence with the group and discussed the logic behind what particular plants were used. It was noted that for that occurrence, many plants on SCE&G's own system, including Saluda, were used and they did not have to call upon VACAR. Bill A. noted that since Saluda was being used in this emergency instance, that they had contacted VACAR to notify them that they were using their reserve and that it



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would probably not be available for the next hour to hour and a half. This was when SCE&G could purchase power on the market or bring other units online. Steve asked if SCE&G was required to first expend all of their resources before VACAR was called. Bill replied that they would have to first use their 200 MW in reserve before they called on VACAR or they had the option of meeting their need internally. Bill A. also added that there were advantages to meeting the needs internally.

The group noted that they had sufficiently discussed the first item and moved to the second question.

2. Provide a write-up on the reason why SCE&G operates their plants in the manner that they are operated.

Response: Describing how the units are operated on any particular day provides information of only limited value, since operations on one day do not necessarily correlate to operations on future days. Actual operations of the plants are subject to an infinitely variable set of conditions. Nevertheless, the general process/protocol (Economic Dispatch) relied upon to determine which plants/units SCE&G at least "plans" to operate is reasonably consistent.

Economic Dispatch is a generation planning tool employed faithfully at SCE&G. Twice each day, SCE&G engineers in the Economic Resource Commitment (ERC) group communicate with employees in the Transmission Services Operation Planning (OPS) group. These two functionally separate groups agree on hourly load forecasts for every hour of the coming 7 days.

Once agreement upon the forecast has been reached, the ERC engineers develop hourly economic dispatch plans to match. The economic dispatch plans that are created project a mix of planned generation from SCE&G units as well as off-system purchases. Units and purchases are economically stacked in every hour (most economically favorable to least economically favorable) to create a plan the system can be controlled by to most economically serve its obligations – including the possibility of serving reserves.

Once the Reliability Coordinators review the economic dispatch plan and make the changes deemed necessary to preserve reliability (remember, reliability trumps economics), the result is a constrained dispatch plan. For example, it may be more economical to generate from Plant A, but the Reliability Coordinators may determine it not to be reliable to do so from a transmission of energy



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perspective. Conversely, it may not be as economical to generate from Plant B, but it may be necessary to do so in order to serve load in a remote area. Saluda Hydro operations provide a perfect example of this. As one of SCE&G's most economical plants, it should always be generating from a purely cost-ofgeneration perspective. Nevertheless, because of reliability factors, it is kept offline so that it can be available to serve as reserves if emergencies occur. Some amount of generation must be available to respond to emergency reserve calls the fifteen minute time period required bv SCE&G's within VACAR/SERC/NERC obligations.

The Reliability Coordinators hand-off the constrained dispatch plan to the System Controllers who then use it as a roadmap by which to operate the system. Inevitably, real life conditions do not exactly follow the assumptions the ERC, OPS, and Reliability Coordinators relied upon to create the plan, so the System Controllers make real time adjustments to operate the system.

The group began to discuss the dispatch plan and Randy Mahan explained that there were always real-life factors that could not be predicted. Steve inquired as to whether decisions to run certain plants were made for economical reasons. Bill A. noted that there are environmental issues to be considered that often trump the economic considerations. After this question was sufficiently answered the group moved on to discuss Item number 3.

3. Provide a write-up of how SCE&G uses the other plants in our system when Saluda is not available due to a scheduled outage of the whole plant or just one or two units. Last year could be a good example of the second half of this question since some of the units were not operational the entire year. What did you use for reserve when Unit 4 was not available?

Response: The use of generating units other than Saluda's units for reserves depends on the specific situation. Over time we have seen a variety of situations in which Saluda's units become unavailable to serve reserve requirements. For example, Saluda's units may be unavailable because of maintenance activities at Saluda. Likewise, sometimes it is necessary that divers be in and around the towers. Operations are suspended during this time and the units are made unavailable for use to respond to reserves until this activity is completed. A more subtle example is presented when the units are already fully loaded, perhaps in preparation for inflows from a tropical storm or hurricane or during a time when lake levels are intentionally being reduced for dam or equipment maintenance. In



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the hurricane example, because the units are generating, they are not <u>offline and</u> <u>available in 15 minutes</u> which are both requirements for being counted as system reserves. And even if not fully loaded, to the extent the units are loaded, we cannot count that already-in-operation capacity towards our reserves obligation.

Most situations are controllable and planned ahead of time so that the generation plans satisfy both economic and constrained dispatch objectives. For example, if divers need to work on the towers, SCE&G makes sure the work is scheduled when generation from Fairfield Pumped Storage is not needed to serve load. This allows Fairfield Pumped Storage to be dedicated for reserves. Other controllable situations are scheduled maintenance and planned releases, assuming we don't have to deal with high flows down the Broad River at the same time. Canoeing for Kids is a good example of a planned release – it's typically scheduled on a Saturday during an expected low load period. For the 2006 event, Fairfield Pumped Storage was used to carry reserves.

When Saluda units fail or require maintenance and need to be taken off line, the only option is to carry reserves on Fairfield Pumped Storage or on a combination of Fairfield Pumped Storage and quick-start turbines. A combination of the two is most common because individually, they are problematic. Fairfield Pumped Storage has certain constraints such as limited operations when the Broad River is at or above 40,000 cfs. Further discussion about turbine operations appears below in response to questions 4 and 5.

A final alternative is to back down steam generation across multiple units. This is the least desirable method of carrying reserves as well as the most costly for SCE&G customers. Because of the slow response of coal-fired generating units, to achieve the full fifteen minutes reserve requirement obligation, multiple units must be backed off if they are to be replied upon. Also, when using these units, there is a real potential for unit trips. Nevertheless, even if a plan to rely on backing down coal fired generation were to be put in place, this would not fully meet the <u>offline and available</u> definition of VACAR/SERC/NERC. Rather, it more closely resembles a <u>backed down and available</u> situation.

In reference to the third item, Mike asked if SCE&G has enough capacity on its system to handle all of the current demands. Randy noted that they did have enough capacity, and explained that SCE&G does the best that they can to plan to have enough generation to meet the current needs as well as the expected growth. The group cited the construction of the new nuclear plant as an example.



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There was brief discussion on the use of Fairfield Pumped Storage Facility. Steve inquired as to how it was used and whether there were certain times of the year in which all of the capacity at that plant was used. Bill replied there were times when the entirety of Fairfield's capacity was used. Karen Kustafik asked if drought conditions could affect the use of Fairfield. Bill A. noted that drought conditions could effect the pumping to refill Monticello Reservoir because there is a minimum flow requirement at Parr. It was also discussed that Fairfield could not add to flooding if there was 40,000 or more cfs already in the Broad River. The group asked for the flow of each unit and the total plant for Fairfield Pumped Storage.

The group also noted that item 4 (listed below) was sufficiently answered and moved to discuss item 5.

4. Provide a write-up of what SCE&G does in an emergency situation when Saluda is available. How is FFPS used in the equation to meet reserve? Does SCE&G use any other plants on our system to meet this reserve, if so which ones are used? Is Saluda always the first plant used during an emergency? Is Saluda the last plant used in an emergency?

Response: Fairfield Pumped Storage may be available if a base load or other currently generating unit trips. However, if the limited volume of water in Fairfield already is included in the generating plan to serve load later in the day, it may not be used to fulfill the Saluda mission for that day, i.e. to meet a reserves call. At other times however, even though Fairfield Pumped Storage may be planned for later use, if loads turn out not to be as high as forecasted, FFPS may be pressed into service to meet the emergency need. System Controllers must also consider the forecasted need for Fairfield Pumped Storage for the next day. as there may be a need to replenish the water supply for the upcoming day's use. While pumping back, obviously, FFPS cannot be counted on to supply reserves. Finally, there are flooding constraints that can take Fairfield Pumped Storage out of the picture all together. Flows equal to or greater than 40,000 cfs in the Broad River render FFPS unavailable for operation in the generating mode. As the system changes throughout the day, multiple factors continually must be considered. Dependence on a single facility for reserves is not prudent; flexibility of reserve sources is crucial for reliability.



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In addition to Fairfield Pumped Storage & Saluda Hydro, the other plants normally used for reserves are the quick-start turbines. Those are Urquhart Unit 4 and Parr units 1, 2, 3, & 4. Together they can generate about 108 MWs.

Saluda is not always the first plant used to serve reserves, nor is it always the last. As described above, there are a variety of factors to consider in determining which unit should be called upon to meet reserves.

5. How does SCE&G use the gas turbines on our system to meet reserve? Why does SCE&G not use them more than we do now? When does SCE&G use the gas turbines in general, peaking, base load, etc.? How are the gas turbines used, are they started and run for a long period of time or just a few hours a day; started and run just to meet a peak demand then shut off?

Response: See the responses to Questions 2, 3, & 4 above. Gas turbines are used to carry reserves in limited situations because they are not as reliable in meeting the strict NERC 15 minute requirements as Fairfield Pumped Storage and Saluda. Thus they are not used as often.

In general, gas turbines are used in peaking situations and normally run for very short periods of time and then shut off. They are always brought on after all steam units and most of Fairfield Pumped Storage is loaded. They are the least economical generation units and fall very late in the economic dispatch stack. Even though they are not as economical, SCE&G still runs them as peaking plants to serve load while it keeps Saluda off line for reserves. Were SCE&G to use turbines and part of Fairfield Pumped Storage for reserves, then to replace their peaking capacity, Saluda would have to be used as a peaking plant in their stead. This would mean Saluda would be used much more frequently than it is now.

While discussing item 5, Patrick Moore noted that during relicensing the possibility exists that some of the studies being done will produce data that would negate SCE&G's ability to use Saluda for reserve. He continued to ask what would be done for reserve if Saluda is not available. Tom Eppink noted that SCE&G is required to, and currently, looking at all options. He continued to note that this data will be shared with the group as soon as it is ready. Bill A. added that they hope to have a presentation ready sometime in September. Bill A. noted that they would also like to look at meeting environmental requirements by upgrading the units themselves. He explained that they are looking at upgrading the units with more efficient runners.



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#### The group moved to item 6

6. Please provide the date, time, and MW that SCE&G was requested to provide reserve power during 2005. Provide the reason for the reserve usage, i.e. called by other utility, to meet our own emergency situation, etc. if the information is available. Which plants on the SCE&G system were used to meet the reserve request?

Response: Reports that SCE&G compiles regarding reserves operations have sensitive information belonging to companies other than SCE&G. What can be provided without violating those confidences follows. SCE&G played a role as part of the VACAR Reserve Sharing Group Agreement on 9 occasions during 2005. On 6 of those occasions SCE&G called on reserves from its VACAR Reserve Sharing Group partners. On the other 3 occasions SCE&G supplied reserves to other companies. That makes a total of 9 Reserve Sharing Group events in which SCE&G participated. Except for the information it has shared over the past couple of years (and continues to publish) regarding its operation of Saluda to meet reserve needs.

Steve proposed that the stakeholders choose a certain date that SCE&G could then find out more information on what plants were used and why. Bill A. replied that the situation varies on each day and that he does not believe the information is kept in such detail all in one place. Steve also noted that he believed that there would be questions in the upcoming RCG about why some of this information is kept confidential. Bill A. noted that they would have an attorney present to explain this to the group. Bill A. also noted that he would have Lee Xanthakos come to the next RCG meeting in an effort to try to answer some of the groups questions about how the system was run on certain days. A homework item for the stakeholders was to pick out dates they were interested in and they would be sent to Lee prior to the meeting.

Bill Marshall also noted that he was interested in knowing the Megawatts in percent that were used during the 9 Reserve Sharing Group events as well as the flows in the river during those instances.

The group began to discuss item number 7.

7. Provide a write-up of how SCE&G determines when and at what rate to lower Lake Murray during the annual fall drawdown?



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Response: SCE&G considers several factors in determining the appropriate target lake elevation during fall drawdown include current lake elevation, the need to gradually drawdown over several months, expectations and planning for "normal" winter and spring rainfall, predicted or possible severe weather conditions (such as the possibility of tropical storms or hurricanes), and the need and ability to maintain reserves during and after drawdown. Rapid drawdown of the lake always raises the specter of potential detriment to the stability of the dam. This is a major reason that SCE&G plans the annual drawdown to occur over several months. The other major issue to consider is Saluda Hydro's availability for reserve generation as discussed in the response to Question 3. To the extent Saluda is operating for other reasons, it cannot be counted as reserves in response to its VACAR/SERC/NERC reserves obligations.

Lake Murray is not a flood storage reservoir and must be operated to allow the lake level to be lowered through plant generation without the use of the emergency spillway gates. As the name implies, the spillway gates are for emergency use, to address circumstances where inflow or expected inflow is greater than the discharge capacity of the plant at a time when the lake level is close to the normal maximum pool elevation. SCE&G goes to great pains to manage the lake level so this situation does not occur. A target water level reduction, usually one to two feet per month, has been considered a "typical" drawdown rate from late August through December in anticipation of normal rainfall from January through April of the following year. Generation during this drawdown period is performed as prudently as possible taking into account the issues described in Question 2

Statistically, the highest probability of a hurricane affecting the Saluda River Basin is in the month of September. Thus the lake level drawdown typically will start around the end of August. If there is a possibility of the approach of a tropical storm or hurricane to the Saluda River Basin area, which may appear to require lowering the lake level in anticipation of the storm, SCE&G will use a Flow Forecasting Model that evaluates data from the National Weather Service and United States Geological Survey to predict the elevation of Lake Murray under various discharge scenarios. Based on the results of specific model analyses, SCE&G will then lower the lake level as necessary to keep the level safely below elevation 360' to maintain compliance with our FERC license. Although hurricane season ends in November, a typical lake level drawdown



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continues through the end of December in anticipation of winter and spring rains as noted above.

Steve asked what criteria SCE&G uses to determine what level the lake should be at any given time during the fall and winter to ensure that flood gates would not have to be used Bill A. noted that it greatly depends on the weather patterns. He explained that Jim Landreth has been working with the lake groups to keep the level up as high as possible for as long as possible. Bill A explained that SCE&G's current policy is to use information from the National Weather Service in its Flow Forecasting Model to determine the need to lower the lake in the event of an approaching hurricane or tropical storm. Bill A indicated that at this time SCE&G does lower the lake anticipating heavy rains in January and Spring. He also added that water balance is part of the operations model, and until they receive all of the information, SCE&G is working on keeping the lake level as high as possible, while still being prepared for hurricanes and tropical storms.

On a separate topic, Bill Marshall noted that he understood the steep increase in cfs under emergency situations but inquired as to why there were such steep rises for planned releases. Bill A. noted that there were several reasons behind this, one being that they needed to try to use the water in an economical manner, as well as having the system back offline and ready for use as reserve. Bill A. noted that as part of their last settlement agreement meeting with SCCCL, they were looking into having a more gradual release for planned releases, however, in an emergency situation there will need to be an immediate release.

Question 8 was skipped (listed below) and the group moved to question 9.

8. Provide the times in which the Broad River flows were at or greater than 40,000 cfs in 2005.

Response: The SCE&G system dispatchers use three gages (Broad River near Carlisle (02156500), Tyger River near Delta (02160105), and Enoree River at Whitmire (02160700)) above Parr Hydro to determine when flows are **approaching** 40,000 cfs on the Broad River. The dispatchers will add the flows of these three gages to calculate the total flow in the Broad River at Fairfield Pumped Storage. To determine how many times the Broad River actually achieved flows equal to or in excess of 40,000 cfs, for this report we will look at the Broad River at Alston Gage (02161000) which is downstream of Parr Hydro



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on the Broad River. When the flows are at or above 40,000 cfs at the Alston Gage, Fairfield Pumped Storage will already have been taken off line in accordance with our FERC license. The attached spreadsheet lists the times the Broad River exceeded 40,000 cfs based on the Broad River at Alston Gage. The items highlighted (in yellow) show the number of times and percent of time for each month that the Broad River was at or above 40,000 cfs. Below are the exact dates/times in 2005 that the Broad River was at or above 40,000 cfs based on the Broad River at Alston Gage. SCE&G cannot validate and does not vouch for the accuracy of the data provided by the USGS gage.

March 29 - From 4 pm to 12 am March 30 - From 1 am to 10 pm June 2 - From 1 pm to 10 pm October 8 - From 6 pm to 10 pm October 9 - From 12 pm to 12 am October 10 - From 1 am to 4 am

9. Provide a range of costs for MWHs of generation that was purchased on the open market for the last two years (2004 & 2005).

Response: This data is business confidential and market sensitive information. Disclosure of this information could result in substantial damage to SCE&G's position as both a purchaser and seller of energy in unregulated regional energy markets. Should power marketers have knowledge of these critical price points, they could adjust their bids accordingly. SCE&G could then be forced to buy energy at less favorable rates. Ultimately, SCE&G system consumers would receive less benefit from energy sales and pay a higher cost for purchased energy if market participants know SCE&G's purchasing history. Once information of this nature is disclosed to the market, there is no practical way to undo the damage to SCE&G and its customers.

### **Broad River at Alston Gage (02161000) Flows**

High		_
	1.00 Flows	
below 40,000 cfs	equal to or greater than	Total



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				40,000 cfs	
MONTH	Jan	Count	744	0	744
		% within MONTH	100.0%	.0%	100.0%
		% within High	8.5%	.0%	8.5%
		% of Total	8.5%	.0%	8.5%
	Feb	Count	672	0	672
		% within MONTH	100.0%	.0%	100.0%
		% within High	7.7%	.0%	7.7%
		% of Total	7.7%	.0%	7.7%
	Mar	Count	731	13	744
		% within MONTH	98.3%	1.7%	100.0%
		% within High	8.4%	28.9%	8.5%
		% of Total	8.3%	.1%	8.5%
	Apr	Count	720	<mark>0</mark>	720
		% within MONTH	100.0%	.0%	100.0%
		% within High	8.3%	.0%	8.2%
		% of Total	8.2%	.0%	8.2%
	May	Count	744	0	744
		% within MONTH	100.0%	.0%	100.0%
		% within High	8.5%	.0%	8.5%
		% of Total	8.5%	.0%	8.5%
	Jun	Count	710	<mark>10</mark>	720
		% within MONTH	98.6%	1.4%	100.0%
		% within High	8.1%	22.2%	8.2%



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	% of Total	8.1%	.1%	8.2%
Jul	Count	744	<mark>0</mark>	744
	% within MONTH	100.0%	.0%	100.0%
	% within High	8.5%	.0%	8.5%
	% of Total	8.5%	.0%	8.5%
Aug	Count	744	0	744
	% within MONTH	100.0%	.0%	100.0%
	% within High	8.5%	.0%	8.5%
	% of Total	8.5%	.0%	8.5%
Sep	Count	720	<mark>0</mark>	720
	% within MONTH	100.0%	.0%	100.0%
	% within High	8.3%	.0%	8.2%
	% of Total	8.2%	.0%	8.2%
Oct	Count	722	<mark>22</mark>	744
	% within MONTH	97.0%	3.0%	100.0%
	% within High	8.3%	48.9%	8.5%
	% of Total	8.2%	.3%	8.5%
Nov	Count	720	0	720
	% within MONTH	100.0%	.0%	100.0%
	% within High	8.3%	.0%	8.2%
	% of Total	8.2%	.0%	8.2%
Dec	Count	744	0	744
	% within MONTH	100.0%	.0%	100.0%
	% within High	8.5%	.0%	8.5%
	% of Total	8.5%	.0%	8.5%



S	MEETING NOTES SOUTH CAROLINA ELECTRIC & GAS COMPANY SALUDA HYDRO PROJECT RELICENSING GENERATION REVIEW TWC					
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Total	Count % within MONTH	8715 99.5%	<mark>45</mark> .5%	8760 100.0%		
	% within High	100.0%	100.0%	100.0%		

In conclusion, Patrick Moore asked if there was any way that the group could be provided with a high and a low cost for power paid over the last 10 years with no particular time sequence attached to it. Bill A. noted that he would ask about this. Mike also asked if Bill A. could send him the FERC form for the other <sup>3</sup>/<sub>4</sub> of 2005. The group noted the homework assignments and adjourned.

99.5%

5%

100.0%

Discussions that occurred after the meeting between Bill Argentieri and Steve Bell:

% of Total

August 2, 2006 – telephone conversation

Subsequent to the July 11, 2006 Generation Review meeting, Steve Bell and Bill Argentieri had a discussion in an attempt to clarify Response No. 7 on SCE&G's June 14, 2006 email, how does SCE&G determine when and at what rate to lower Lake Murray during the annual fall drawdown. The following are details of our conversation.

Steve was interested in more details of how SCE&G determines what target elevations are aimed for in the fall drawdown months. Bill explained that normally SCE&G will attempt to lower the lake approximately 1-2 feet a month starting in late August/ early September in an attempt to target elevation 350 to 352 by the end of December. This is for several reasons; first to provide storage area in Lake Murray in the event of a tropical storm or hurricane which if it is going to occur, typically occurs in the late August to end of September time of year in our watershed basin. Second, this scenario provides for greater flexibility to keep Saluda for reserves during longer periods of each month. We will drawdown the lake in the early part of the month to allow for reserve use in the later part of the month. Third, the idea of lowering Lake Murray to the 350 - 352range by the end of December provides our system operators with better control of inflows during the late winter and early spring rainy season (January – April). This also provides SCE&G a better opportunity to manage the lake level without having to generate as often during the spring months. In 2005, similar to what we have tried other years in the past, Jim Landreth requested that the minimum lake level during the drawdown not go below elevation 354. We did accomplish this, but because 2005 was more of a typical rain year, we had to use Saluda Hydro to generate more throughout the spring and summer months. This created two situations that we are discussing right



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now in the Safety RCG and Fish & Wildlife RCG. The Safety RCG is concerned about more generation during the summer months which creates the need for more safety warning systems along the lower Saluda River. The Fish and Wildlife RCG is concerned with the potential to generate more with Unit 5 from June through August when the DO in the lake is the low.

