MEETING NOTES

SOUTH CAROLINA ELECTRIC & GAS COMPANY
Joint RCG Meeting

July 13, 2017

Final KMK 08-21-17

ATTENDEES:

Bill Argentieri (SCE&G)
Ray Ammarell (SCE&G)
Randy Mahan (SCE&G)
Caleb Gaston (SCE&G)
Brandon Stutts (SCE&G)
Melanie Olds (USFWS)
Rusty Wenerick (SCDHEC)
David Eargle (SCDHEC)
Fritz Rohde (NOAA)
Alex Pellett (SCDNR)
Dick Christie (SCDNR)
Bill Marshall (SCDNR)
Ron Ahle (SCDNR)
Gerrit Jobsis (American Rivers)
Bill Stangler (Congaree Riverkeeper)
Henry Mealing (Kleinschmidt)
Alison Jakupca (Kleinschmidt)
Kelly Kirven (Kleinschmidt)
Jordan Johnson (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.

Henry opened the meeting with a safety moment and introductions. The purpose of the meeting was to review the Adaptive Management Plans (AMPs) and Monitoring Plans developed for the Parr Hydro Project. During this meeting, stakeholders discussed the Minimum Flow AMP, Downstream Fluctuation Flows AMP, American Eel Monitoring Plan, and Freshwater Mussel Monitoring Plan. A second meeting was scheduled for July 18th to discuss the remaining plans, including the West Channel AMP, Monticello Habitat Enhancement Plan, Erosion Monitoring Plan, Entrainment/Hydroacoustics Study, and Turbine Venting Plan. Henry reminded the group that comments on the Draft License Application are due at the end of August, and the Final License Application will be filed with FERC in May 2018. Three meetings are scheduled in August to discuss the Settlement Agreement.

Minimum Flow AMP

The group began discussion on the Minimum Flow AMP and the Comparison of SCE&G and Stakeholder Minimum Flow Recommendations Memo. Henry said that the Project does not have a storage reservoir, so if a Low Inflow Protocol (LIP) were triggered, there would be no way to supplement flows. Instead, SCE&G requested a 50 cfs operating margin during extremely low inflow periods to facilitate and simplify compliance and eliminate the need for a separate low inflow protocol. SCE&G originally requested a 100 cfs operating margin but is willing to reduce the margin to 50 cfs.

Gerrit said he is concerned about the difference in the 1,200 cfs target low flow that stakeholders requested and the 1,000 cfs target low flow that SCE&G requested. Ray said that their request for a lower flow is related to compliance. SCE&G would spend a larger amount of time closely tracking inflow for compliance with a target flow of 1,200 cfs than they would at 1,000 cfs. Ray also said that the 1,000 cfs low flow fits in well with the 20/30/40 default state flow recommendation and with the IFIM and WUA data. Bill A. added that SCE&G increased their requested target low flow from 900 cfs to 1000 cfs in hopes that the TWC would approve it and the 50 cfs operating margin.

Gerrit said his real issue is not necessarily with the 1,000 cfs target flow as it is with the 800 cfs step down for the compliance flow. He said he has been on the river at the 800 cfs flow and it is difficult to navigate through some of the channels. The option to reduce flows to 800 cfs on a daily basis has an effect on habitat and recreation. Bill A. said that a flow of 800 cfs would only be for a few hours a day if necessary. If inflow is over 1000 cfs, that is the flow that will be passed downstream. Downstream flow at the Parr Project is totally dependent on Broad River inflow.

Ron mentioned his concern with a 1,000 cfs target flow is from a biological standpoint. He said that the lower the minimum flow is, the lower the flow will be to the west channel. He said that if SCE&G can show that at a 1,000 cfs flow the west channel will still receive a reasonable flow, his concern isn't as strong. Henry said that since this isn't a storage project, it doesn't matter as much where the target is set as how much inflow is coming into the project. He also reminded that no matter where the target flow is set, the west channel will end up with better flows than what it receives now. Henry reminded the group that this AMP has a 5 year review process, so if issues arise, the Review Committee can make adjustments.

Gerrit said the flow chart in the memo shows that during the high flow period, when flows range from 2200 cfs to 600 cfs, there is a 100 cfs drop down for compliance. He asked if there was a reason why there wasn't a 100 cfs drop for the low flow period. Could the 800 cfs compliance flow be changed to 900 cfs? Bill A. said that the numbers shown in the chart represent what he can agree to without further discussion with SCE&G management. However, Bill said if changing the 800 cfs compliance flow to 900 cfs would bring everyone together, he would talk to management about it.

The group then shifted focus and discussed SCE&G's request to have up to 6 hours per day (instead of 3 hours per day) of flows between the target and compliance flows in order to adjust the balance of storage between the reservoirs and to allow for variation in flow due to equipment or human factors. Dick said that a few meetings back, SCDNR suggested having an incentive for SCE&G to meet target flows when water is available. If water is available but the target flow isn't being met, maybe SCE&G should provide monetary compensation devoted to the resource. Ray said that the proposal from stakeholders was to allow 3 hours for adjustment from a target flow to a compliance flow. If SCE&G violates the agreed upon timeframe, they would be out of compliance and must report this to FERC. It will then be up to FERC to decide the penalty. Henry said that maybe during the first year of the AMP, allow SCE&G the 6 hour operating margin, then each year review the margin and try to narrow the window if possible. Henry also suggested that the stakeholders set a limit on how many hours can be contiguous. For example, 900 cfs is the compliance flow and the operating margin is 6 non-contiguous hours, with a maximum of "X" contiguous hours and a goal to reduce the operating margin over the course of the 5 year AMP. Alison suggested that this goal be listed in the goals and objectives section of the AMP. Randy said that this should be worded carefully so that the goal is not just to reduce the margin, but to set it at the appropriate level. Stakeholders agreed to allow SCE&G up to 6 hours per day (with up to 3 consecutive hours) of

flows between target and compliance flow in order to adjust the balance of storage between the reservoirs, and to allow for variation in flow due to equipment or human factors. A goal of the AMP will be to reduce the number of hours per day and the number of consecutive hours of flows between the target and compliance flow values, to the extent that a reduction is shown to be possible based on operational experience during the term of the AMP.

Dick asked Ray to explain how reservoir evaporation is calculated. Ray showed the group a chart with evaporation calculations on it. This information will be included in the AMP, along with definitions and a written explanation.

Ron asked if there was a point that SCE&G would stop generating at Fairfield due to low flows. Ray said not as long as the operators don't make a mistake. During a drought, the gates at Parr would be up continuously, river flow would be passed through the hydro, and the storage in Parr would be pumped to Monticello on a daily basis. Ron asked if, when the two new nuclear units are online and there is a surplus of energy, could the scenario be revisited? Ray said that the ability of Fairfield to pump in the early years of the new units will be critical. Load growth will eventually catch up to the new units, but during the early years, Fairfield will be critical for load shifting.

The group then discussed SCE&G's revised definition for Normal Operations that was included in the memo. Ray said if inflow is above the compliance flow, SCE&G should be able to release target flows with flexibility. However, the original definition for Normal Operations that the stakeholders provided stated that SCE&G would release net inflows all of the time, instead of the target flow. Bill A. said he didn't know if the wording was intentional, but SCE&G wanted to discuss it just in case.

The group broke so that stakeholders could have a private discussion. When they returned, the stakeholders said that the idea of releasing daily inflow shouldn't be included in the Minimum Flow AMP, but it should be captured somewhere. Stakeholders said that the agreed to minimum flows are based on current operations. Ray said that current project operations are described as modified run-of-river, with water being released in a controlled way. Stakeholders agreed to SCE&G's revised definition for Normal Operations contingent upon operations being addressed in the Downstream Flow Fluctuation AMP. Dick said that they are fine with the Minimum Flow AMP as long as Project operations don't change in the future. If Project operations change and storage becomes available, then a LIP might need to be revisited. The group agreed to include this wording in the Settlement Agreement.

The group then discussed the possibility of scheduling verification flows. Stakeholders are interested in viewing the low flow, especially at the navigation transects and at Bookman and Huffman Islands. Henry and Jordan will come up with a general plan for verification observations and Kelly will send out a doodle poll for the August/September timeframe to schedule this.

Downstream Flow Fluctuation AMP

The group reviewed the comments and edits that were submitted on the Downstream Flow Fluctuation AMP. Fritz said that some of the comments he submitted on behalf of NOAA highlighted areas where the NOAA general counsel might be concerned. Regarding their comment that members of the AMP Review Committee should also include those with a regulatory interest in water flows on the Broad River who aren't necessarily signatories to the Settlement Agreement, Bill

A. said that FERC will need to make that decision. In their comments, NOAA also asked why SCE&G would not start year-round fluctuation reductions prior to the new license being issued. Bill A. said that SCE&G prefers not to implement changes before the Biological Opinion or license is issued.

SCE&G and Kleinschmidt will make edits to the AMP to include meeting notes and memo references to clarify discussion on the downstream flow fluctuation effect on the Congaree River. They will also add definitions for hydraulic, turbine, and generator capacities and add Ray's evaporation table that will also be included in the Minimum Flow AMP. Ray will also put together some information regarding the calculations for mean deviation of outflow vs. inflow and send this out to stakeholders for review.

Alex asked if the lag in the gages is a limiting factor. Ray said that the gages can be added and used to make a decision on gate position. A gate adjustment can be made for inflow that isn't at the Project yet. Ray isn't sure how the time lag in gages can affect the mean deviations. In the future, it's possible that the crest gates could be automated, however that is an extremely expensive option. Ray said that right now the gates are lowered in ½ foot increments, but they can be lowered in 1/10 foot increments. Caleb asked how long it takes to adjust the gates if needed. Ray said it takes about 15 minutes. Gerrit asked is it not as expensive to man the Project 24 hours a day, 7 days a week versus automating the crest gates? Bill A. said that the Project will only be manned around the clock for the 28 days during the spring spawning period. This is SCE&G's solution to control downstream flows during that period until they make a decision to automate the crest gates. Bill A. also noted that automating the gate operations without having personnel present to observe the gates at the Project is a deviation from how SCE&G currently operates this project.

American Eel Monitoring Plan

Henry said that while there are big changes planned for the future in the Santee Basin (such as the installation of fish and eel passage), no one knows when these changes will take effect and until this happens, the American eel numbers shouldn't change substantially at Parr. Ron said he disagrees. He said that in early June he saw 8 eels downstream of Parr Shoals Dam. The group discussed modifying eel sampling times. Fritz said that April and May are peak season for eels at Roanoke, but last year there was also a peak in June. Melanie said there is also a second spike in October at Santee.

Dick said that it does appear that the eel population downstream of Parr Shoals Dam is pretty low. Everyone seems to want monitoring on a regular basis to see if and how much the population is growing. Before permanent passage is installed as part of the Accord, there may be a need for something in the interim to pass eels over the dam if numbers get high enough to warrant that. A threshold to trigger this is needed.

Henry said based on his observations there, he doesn't believe eel traps are the most effective way to monitor the tailrace areas. Periodic flows over the spillway gates can destroy the traps easily. Sampling in the spring will encounter sporadic flood flows that will likely flood out and or destroy eel traps.

Ron said he doesn't necessarily believe that a backpack shocker is a good tool for monitoring, but a boat shocker is. Effort can be measured in seconds of pedal time and could potentially be used to

estimate population size. However, Ron said that more sampling would be needed than what is proposed in the monitoring plan now. Fritz said that the boat shocking limits the habitat that boats can access, but backpack shocking opens up more habitat. He said that after an upward trend in eel population was established, that should trigger the construction of a permanent ramp. Fritz also reminded the group that NOAA did not sign the Accord. Henry said the traps that were used during the American eel study were put out per recommendations from Mark Cantrell, however they didn't catch any eels probably due to very low populations. Henry said that he thinks using a combination of boat and backpack shocking is good and a boat may be more useful in the west channel after flow is increased to that area.

Ron said those 8 eels he saw were the most he's ever seen in that area. Ron saw these eels just downstream of the dam in the east channel at the gravel shoals. He said the base of the dam might not be the best place to sample. Melanie agreed that sampling needs to occur in other areas besides the base of the dam. Everyone agreed to using boat and backpack shocking methods and to sample in the east and west channel and in the gravel area where Ron saw the eels. Sampling will occur generally from the powerline up to the dam. The group discussed how much pedal time should be spent in each area and by each method. Fritz suggested outlining an area on a map and just shock the general area, keeping track of how long it takes.

The group discussed sampling over three days in April, May and June, not necessarily with one day in each month, except during the first year of sampling. Ultimately, the Review Committee will determine when sampling will occur, including other months, such as October.

The group discussed the frequency of sampling. The stakeholders would like to see sampling occur every three years. The group agreed that sampling will occur during the first year after the license is issued, then every 5 years afterward (i.e., years 6, 11, 16, etc. after license issuance). Sampling will be increased to once every 3 years upon the completion of an eel passage at the Santee Cooper Project. Melanie asked if changes are made to the Columbia Project, could this affect eel populations at Parr. Henry said that there is a lot of flow at Columbia now and there is a natural stair step at the dam where eels can pass. So Columbia shouldn't be a factor in the future.

A schedule will be added to the American Eel Monitoring Plan for sampling over the course of the entire license, with a proviso for Santee Cooper eel ramp construction. A Review Committee meeting will be scheduled for the first February after the license is issued.

Freshwater Mussel Monitoring Plan

Henry told the group that the results of the Carolina creekshell mussel genetic testing should be available soon. Depending on those results, sampling in Monticello Reservoir may be added to the monitoring plan.

David said he would like to see some sampling locations added in Parr and Monticello reservoirs. Henry said that SCDHEC didn't give any recommendations for mussel monitoring, so he doesn't understand why they want to add sampling sites now. David said if something goes wrong with the populations in those areas, it would be good to catch it before things get bad. Henry said that the intent of the monitoring plan is to focus on areas where changes are taking place, such as changes to minimum flows downstream of the Project and in the west channel. Melanie said that she wants to

see documentation of the population downstream of the dam staying the same at a minimum, and hopefully increasing.

Melanie also said she would like to see monitoring occur more often, such as every 5 years. David said he agrees with that suggestion. Dick said that SCDNR has done a lot of monitoring over the last 15 years and the mussel population in that stretch of the river is as good as any in the state. He believes that monitoring every 10 years should be acceptable. Ron said that with the changes being made at the Project, he would like to see monitoring sooner than 10 years. The group agreed to monitor the first year after the license is issued and then again in years 7, 17, 27 and onward through the term of the license. However, if fish passage is implemented during the term of the license, then the Review Committee will meet to adjust monitoring frequency. A schedule will be added to this monitoring plan as well.

Before the meeting closed, Gerrit said that he would like to see IFIM data added to the Downstream Flow Fluctuation AMP that shows how the changes in flow stabilization will benefit habitat. He would like to see benefits show from a biological standpoint and just not a numbers/flow standpoint. Gerrit said that he will contact the agencies after the meeting so that they can discuss this and propose something to include in the AMP.

The meeting adjourned. Action items are listed below.

ACTION ITEMS:

- Bill A. will talk to SCE&G management about modifying the proposed minimum flow to 1,000 cfs with a 900 cfs compliance flow – with the caveat of a 100 cfs buffer between the Target Flow and Compliance Flow – having 6 hours per day (no more than 3 contiguous) below the Target Flow – and having a 50 cfs operating margin when inflows are equal to or less than 600 cfs..
- SCE&G and Kleinschmidt will make all of the edits to the Minimum Flow AMP, Downstream Flow Fluctuation AMP, American Eel Monitoring Plan, and Freshwater Mussel Monitoring Plan that were discussed in the meeting.
    - Minimum Flow AMP - explain how reservoir evaporation is calculated
    - Settlement Agreement - add operational change wording
    - Downstream Flow Fluctuations AMP - include meeting notes and memo references to clarify discussion on the downstream flow fluctuation effect on the Congaree River
    - Downstream Flow Fluctuations AMP - add definitions for hydraulic, turbine, and generator capacities and add Ray's evaporation table that will also be included in the Minimum Flow AMP
    - Downstream Flow Fluctuations AMP - Ray will also put together some information regarding the calculations for mean deviation of outflow vs. inflow and send this out to stakeholders for review
    - Eel Monitoring Plan - Sampling will occur generally from the powerline up to the dam
    - Eel Monitoring Plan - The group discussed how much pedal time should be spent in each area and by each method.

  - Eel Monitoring Plan - the Review Committee will determine when sampling will occur, including other months, such as October
  - Eel Monitoring Plan - sampling will occur during the first year after the license is issued, then every 5 years afterward (i.e., years 6, 11, 16, etc. after license issuance)
  - Eel Monitoring Plan - Sampling will be increased to once every 3 years upon the completion of an eel passage at the Santee Cooper Project
  - Eel Monitoring Plan - A schedule will be added to the American Eel Monitoring Plan for sampling over the course of the entire license, with a proviso for Santee Cooper eel ramp construction
  - Eel Monitoring Plan – A Review Committee meeting will be scheduled for the first February after the license is issued
  - Mussel Monitoring Plan - monitor the first year after the license is issued and then again in years 7, 17, 27 and onward through the term of the license
  - Mussel Monitoring Plan - if fish passage is implemented during the term of the license, then the Review Committee will meet to adjust monitoring frequency
  - Mussel Monitoring Plan - A schedule will be added to this monitoring plan
- SCE&G and Kleinschmidt will add wording to the Settlement Agreement regarding Project operations.
- Henry and Jordan will work up a flow observation proposal and Kelly will send out a doodle poll for the August/September timeframe to schedule the verification flow outing for minimum flows.
- Ray will put together some information regarding the calculations for mean deviation and send this out to stakeholders for review.
- Gerrit will contact the agencies to discuss adding IFIM data to the Downstream Flow Fluctuation AMP and propose something to include in the AMP.