MEETING NOTES
Stevens Creek Hydroelectric Project (FERC No. 2535)

Dominion Energy South Carolina, Inc.
Water Quality Technical Working Committee Meeting

December 13, 2022

Final JAG 1/18/23

ATTENDEES:

Amy Bresnahan (DESC)
Caleb Gaston (DESC)
Ray Ammarell (DESC)
Paul Vidonic (Dominion)
Keith Whalen (USFS)
Eric Bauer (USFWS)
Bjorn Lake (NMFS)
Kevin Mack (NMFS)
Twyla Cheatwood (NMFS)
Jamie Sykes (USACE)
Jeffery Williams (GADNR-EPD)
Paula Marcinek (GADNR)
Rusty Wenerick (SCDHEC)
Elizabeth Miller (SCDNR)
Chad Hendrix (City of Augusta)
Tonya Bonitatibus (SRK)
Alison Jakupca (Kleinschmidt)
Henry Mealing (Kleinschmidt)
Jason Moak (Kleinschmidt)
Jenn Güt (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.

Alison J., Kleinschmidt, provided the group with an introduction. Caleb G., DESC, reviewed the 2021 water quality data, with a focus on Stevens Creek, which experienced dissolved oxygen (DO) levels below the SC state criteria during the summer. It is hypothesized that organic rich waters within Stevens Creek may, during certain operational conditions, back up, flooding the silty and organic-rich hypoxic flats, which then draws water out into the creek. Pulses from J. Strom Thurmond act like a tidal system, reversing the flow in Stevens Creek, which is exacerbated by low-flow conditions. DESC is proposing to conduct a water quality study in Stevens Creek during the summer of 2023 to attempt to gauge the extent of the area of poor water quality. Study Site 5 from the 2020 and 2021 studies will be continuously sampled at hourly internals from May 1 through October 31, 2023, for temperature, DO, specific conductance, pH, and turbidity. Four longitudinal studies were proposed to be conducted between August and September. While traveling in a boat upstream at idle speed, DO and temperature will be taken at 30-second intervals until the DO recovers. Six locations near the hypoxic flats between 4 and 7 river miles (RMs) from the creek mouth will be monitored to determine the role of these areas on the low DO

conditions observed in the creek. The sites will be monitored for four 48-hour periods, collecting temperature and DO in 15-minute intervals. Jason M., Kleinschmidt, noted that a previous water quality study conducted in Stevens Creek by Phinizy Center for Water Sciences, indicated the elevation fluctuation from the Project was 7-8 RMs upstream of the creek mouth.

Caleb reminded the group of some ongoing sampling being conducted in the vicinity of the Project. The USGS samples two consecutive days per month from November through May and two consecutive days twice per month from June through October (diurnal). The USACE collects monthly profile data in the J. Strom Thurmond tailrace along with temperature, DO, and specific conductance in 15-minute intervals.

Caleb asked the agencies to provide their opinion on the proposed methodology for the Stevens Creek water quality study. Elizabeth M., SCDNR, inquired if a continuous monitor should be placed closer to 8 RMs upstream of the mouth to determine if low DO was present there. Jason stated that 8 RMs is where previous research indicates DO is fully recovered, but the longitudinal surveys will map the distance upstream to where the DO recovers. Continuous monitors are between RM 4 and 7 as that is where water drains out of backwatered locations. There are not a lot of good placements for monitors upstream of the current continuous monitor at Site 5 (located at approximately RM 4.5) due to high flow events washing large trees downstream, destroying equipment.

Tonya B., SRK, inquired what the outcome of the water quality study was. For instance, what happens if it is found out that the flats are playing a role in DO. Alison stated that the overall goal of the study was to gather enough information to quantify the effects of the Project's operational regime for FERC's NEPA analysis. In this case, the Project's re-regulation function may be contributing to water quality issues observed in the creek, which ultimately may be determined to be an unavoidable adverse effect of the re-regulation function of the Project. Tonya noted the question stemmed from determining what is historically recognized as "healthy" DO in Stevens Creek, and if it was a blackwater creek with naturally low DO, that would matter in terms of identifying whether the current DO levels are necessarily abnormal. There is no data to indicate what the historic DO in the creek was, but Keith W., USFS, commented that the presence of the Carolina Heelsplitter mussel in the creek likely means DO was not historically an issue.

Keith agreed with the longitudinal and off-channel surveys. He asked if the longitudinal surveys would be timed with releases from Thurmond. Jason said they would try to time the surveys during the time of day when DO is the lowest, which is during daylight hours. Keith noted that it would be beneficial to be consistent with the time of day or release when doing the surveys. Keith also asked for the scientists to look for a similar site as close to 8 RMs that would be off channel. If nothing is above there, Keith noted it is probably okay without a monitor. A reconnaissance trip might be of use, which Jason agreed with.

Rusty W., SCDHEC, inquired whether multi-parameter probes could be used to collect pH and specific conductance in addition to temperature and DO. Jason said it would be possible to do for the longitudinal survey but that the multi-parameter sondes are much more expensive, and he would be concerned with destruction of the equipment if they were to be used for the off-channel surveys. Elizabeth inquired about the possibility of additional continuous monitors somewhere, maybe different ones, because SCDNR is concerned about low DO cutting off fish passage through the creek. HOBO loggers are a possibility, but they would need to be serviced every two weeks, especially during the middle of the summer, due to biofouling issues in the creek.

Kevin M., NMFS, stated that he thought the longitudinal and off-channel surveys were a good idea. He asked if there were any plans to conduct a residence time study as that was discussed at the September RCG meeting. Jason noted potential methodology for such a study is modeling or the use of fluorescent dye. Henry M., Kleinschmidt, stated residence time in Stevens Creek would be highly variable and dependent on rain events and seasonal flow. It was suggested that an additional longitudinal survey in May or June may help provide more information on how the system may be functioning from month to month. Henry asked the agencies if they are worried about residence time being a barrier to fish passage. Paula M., GADNR, commented that her agency is worried about the area of poor water quality acting as a barrier to fish movement. Residence time would get at the duration of the impact and studying the impact could lead to mitigation efforts. GADNR would endorse an additional May/June longitudinal survey, and Paula noted that adding a monitor to Site 4, on the east side upriver of the dam, may allow for the opportunity to relate what is going on at the mouth with what is going on upstream.

Tonya asked if it has been decided that Dominion does not think that there is an issue with water quality in Betty's Branch, and if there was a reason to just focus on Stevens Creek. She noted that SRK collected water quality data in the Betty's Branch area and that there is an interest in knowing any impacts. Alison stated that there is a lot of water quality monitoring being conducted in the main stem of the Savannah River, and the goal of the Stevens Creek study is to have a complete final license application for NEPA analysis.

The group discussed that the timing of the recon trip should occur during spring and during a non-high flow event at least one month prior to the start of the study. DESC will plan to hold a meeting in the spring with the Water Quality TWC to review the monitoring sites and methodology.

ACTION ITEMS:

- DESC to schedule Water Quality TWC meeting in spring 2023 to review study sites and methodology.