KEOWEE-TOXAWAY DROUGHT MANAGEMENT ADVISORY GROUP
CONFERENCE CALL SUMMARY
Wednesday, November 9, 2016

Organizations Present
Duke Energy
Georgia Environmental Protection Division (GA-EPD)
Greenville Water, SC
HDR
Powdersville Water District, SC
SC Department of Natural Resources (SCDNR)
SC Department of Health and Environmental Control (SCDHEC)
Seneca Light and Water, SC (City of Seneca)
Southeastern Power Administration (SEPA)

Attendance Roll and Agenda Review
1. Ed Bruce of Duke Energy took attendance and reviewed the agenda.

Low Inflow Protocol (LIP) Status
2. As of November 1, 2016 the Keowee-Toxaway (KT) Project remained in Low Inflow Protocol (LIP) Stage 2 conditions due to continued hot weather and reduced rainfall and as a result of the U.S. Army Corps of Engineers (USACE) declaring Level 2 of their Drought Plan for the downstream federal projects on September 19, 2016. The streamflow trigger confirmed the Stage 2 declaration as streamflow also reached Stage 3 levels and dry conditions have continued to worsen.

3. Mr. Bruce provided a detailed review of the individual LIP trigger conditions. Duke Energy usable reservoir water storage operates in tandem with the USACE usable reservoir water storage, per the New Operating Agreement. The U.S. Drought Monitor 12-week average trigger is showing LIP Stage 1 Condition. The four-month average streamflow trigger entered Stage 3 conditions and is declining. The USACE drought conditions for both Hartwell Lake and Thurmond Lake are at USACE Drought Plan Level 2 elevations and are projected to remain there into 2017, but with continued declining lake levels and declining remaining usable water storage. Usable reservoir water storage is anticipated to bottom out in January and remain at those levels for a while. This is assuming evaporation and other losses continue to be greater than inflows into Hartwell and Thurmond Lakes. The four-month rolling average shows a significantly higher peak than normal early in the year (due to high rainfall events in the late Fall and early winter of 2015), followed by a steep decline over the past 6 to 8 months of 2016. Streamflows dipped below the long term average about 3 to 4 months ago and have continued to decline while remaining well below the long term average. The U.S. Drought Monitor map shows drought intensification and expansion in the Upper Savannah River Basin over the past month. A chart showing the intensity of historical drought since 2000, as based on the U.S. Drought Monitor, indicates the basin to now be entering a period of potentially significant drought after having experienced normal to wet conditions over the last three years. Both the Oconee County and McCormick County groundwater gages indicate worsening conditions. The Oconee County gauge level dropped...
below the long term average and surpluses from last year’s rains have been depleted. The McCormick County gauge level continues its decline which began a few months ago.

4. Oconee Nuclear Station’s consumptive water use in November is approximately 17.7 million gallons per day (MGD) and is expected to be approximately 22.7 MGD next month (based on long-term historical water use). Cumulative surface evaporation for all of Duke Energy’s reservoirs in November located in the Upper Savannah River Basin is estimated to be approximately 41.1 MGD and surface evaporation rates are expected to decrease in December to approximately 27.9 MGD. Surface evaporative rates are expected to continue to decrease with upcoming cooler seasonal conditions until the early part of next spring.

5. Ed Bruce reviewed the Keowee Development’s water releases to Hartwell during the previous month ending November 1st. Average weekly total releases, including leakage and seepage, for the month were 5,046 acre-feet per week (363 cubic feet per second or 235 MGD).

6. Greenville Water reports rainfall continues to be significantly below average and reservoir levels worsening and remaining below normal for their system reservoirs. Table Rock Reservoir is approximately 15.6 feet below full pond elevation, and the North Saluda Reservoir is approximately 6.5 feet below full pond. Greenville Water has encouraged customers to conserve water through website notification and other conservation efforts.

7. The City of Seneca reports water treatment plant production values are declining, and they are averaging 7.6 MGD production at their water treatment plan. Rainfall remains low, with only 0.9 inches recorded in October. The Seneca area remains 19.5 inches below average for the year-to-date.

Update on Meteorology and Keowee-Toxaway Project Operations

8. Mr. Bruce summarized recent precipitation patterns and meteorological predictions. The regional precipitation for 2016 year-to-date is below normal for Greenville-Spartanburg, SC (-10.38 inches), Asheville, NC (-9.42 inches), and Hartwell Dam (-20.53 inches).

9. According to NOAA data, the precipitation departure from normal over the last 180 days is 6 to 16 inches throughout the Upper Savannah River Basin. The NOAA Long Term Palmer Drought Severity Index map through October 29, 2016 shows the KT area as moderately to extremely dry and estimates the KT area needs 12-15 inches of rain (or more for small sections) to return to normal. It also indicates that the Upper SRB is in some of the worst conditions in the country. The NOAA probability of precipitation, updated through September, shows there is less than 15% chance of receiving enough rainfall over the subsequent four months to end the drought. The NOAA short and medium term forecasts predict no rainfall for the next 7 days, a 40% to 50% chance of below normal precipitation for the 8 to 14 day outlook and below normal precipitation for the month of November. The NOAA temperature and precipitation outlook for the November to December period indicates above normal average temperatures and below normal precipitation for the period. The U.S. Seasonal Drought Outlook indicates persistent drought conditions are likely for the Upper Savannah River Basin through December, 2016. Streamflow conditions are currently below normal, showing widespread dry conditions continuing in the Upper Savannah River Basin. Groundwater remains below the long-term average.

10. In summary, the KT LIP is in Stage 2 Condition. USACE and KT lake storage continues to decline. USACE reservoirs are now in Level 2 Drought Plan conditions. Forecasters are suggesting below normal probability for precipitation for the November to January time period. Duke Energy continues to request water conservation efforts by water users relying
on water stored in Lake Keowee, including two day per week (Tuesday and Saturday) watering restrictions for Lake Neighbors on Lake Keowee and Lake Jocassee.

11. Q&A: Jeff Larson (GA-EPD) asked “Do you have a public outreach program like USACE does? Duke Energy and various utilities stated they do news and media releases. In addition information is posted on their websites which has resulted in additional conservation efforts. There was also some discussion about additional joint outreach opportunities if the USACE reaches Level 3 in 2017.

12. The next KT-DMAG call is scheduled for November 29, 2016 per KT-LIP requirements, and will focus on USACE lake level projections and short-term weather trends.