Appendix C - 1-hour SO_2 Compliance Dispersion Modeling report and State Construction Permit for SCE&G Wateree Station (Permit Number 1900-0013) and 1-hr SO_2 Compliance Dispersion Modeling report International Paper – Eastover Mill (Permit Number 1900-0046)

SCE&G Wateree Station (Wateree) and International Paper – Eastover (IP) are located in close proximity to each other. Thus, Wateree and IP collaborated and submitted a single modeling analysis that combined the two facilities. The combined facilities/sources are referred to as WATEO. The modeling report submitted by WATEO is attached to this appendix. Electronic modeling files associated with the modeling analysis submitted by WATEO are contained in Appendix H. The permit for Wateree is attached to this appendix.

The modeling analysis submitted by WATEO demonstrates compliance with the 1-hr SO_2 NAAQS. Two notable aspects of the WATEO analysis are: 1) the use of the LOWWIND3 regulatory non-default model option that requires approval from the EPA Regional Administrator, and 2) the use of season-hour SO_2 monitor background values that differ from the season-hour background values computed by the Department (both sets of background values are based on data from the Parklane monitor from 2012-14).

WATEO has submitted a request for approval of, and justification for, the use of the LOWWIND3 option for EPA's review. The request/justification document is attached to this appendix. Electronic files associated with the request/justification are contained in Appendix H. The Department requests approval of the non-default LOWWIND3 option used as an alternative modeling technique as allowed in Section 3.2 of EPA's *Guideline on Air Quality Models* (or Appendix W).

The Department's Bureau of Air Quality, Modeling Section reviewed the WATEO report and modeling analysis. Like the modeling analysis submitted by WATEO, the Department review modeling run used the LOWWIND3 option and season-hour background values computed from Parklane monitor data from 2012-14. However, the background values computed and used by the Department differed slightly from those used by WATEO. This background data has been reviewed by the Department and meets data completeness and validity requirements for use in NAAQS attainment demonstrations. The result of the review model run (maximum model concentration + background) was the same as the modeling analysis submitted by WATEO, i.e., 195.9 ug/m^3.

The Department believes the domain of the WATEO analysis is adequate to determine the maximum concentration of SO_2 expected, because of the following: 1) the large receptor domain (which extended to approximately 10 km from WATEO); 2) the lack of significant terrain in the area; 3) the relative isolation of WATEO; 4) the lack of significant contribution to the expected maximum concentration from background sources (which were screened out of being included in the modeling analysis, as described in detail in the WATEO modeling report); and 5) the pattern of modeled concentrations that showed the maximum being located in close proximity to WATEO and general trend of decreasing concentrations with increasing distance from WATEO.

Based on the information submitted by WATEO and the Department's modeling review, the Department concludes that SO_2 emissions from WATEO will not cause or contribute to a violation of the 1-hr SO_2 NAAQS.