

CONCLUDING REMARKS

It may be recalled that the statement of work for Year 1 called for the following tasks to be performed:

"Task 1: Wind Turbine Flow Solver Development:

Task 1.1: The Georgia tech 3-D hybrid code and the accompanying grid generators will be modified to accept multi-bladed horizontal axis wind turbine configurations. The grid generator should accept the blade geometry in a standard format specified by the industries or manufacturers. The flow solver will be modified to output performance parameters of interest, in a format readily useful to the blade designer.

Task 1.2: The modified flow solver and the grid generator will be applied to a wind turbine configuration field tested by NREL for a number of test conditions- wind speed and direction, etc. Test conditions that correspond to attached flow as well as 3-D stalled flow will be considered. Comparisons will be made with available data, and other lifting line codes."

These objectives have been achieved. We will, of course, continue to validate the code with other blade configurations of interest to NREL (e.g. Phase III twisted blade) and industry during the second year. During the second year of research, work will proceed on (a) development of an automated transition model, (b) incorporation of the Spalart-Allmaras model (already coded) into the rotor code, and (c) inclusion of the tower shadow effects using an overset (CHIMERA) methodology. These goals are in conformity with the statement work prepared at the start of the project.