PRELIMINARY ANALYSIS OF THE STRUCTURAL AND INFLOW DATA FROM THE LIST TURBINE

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ABSTRACT

The Long-term Inflow and Structural Test (LIST) program is collecting long-term, continuous inflow and structural response data to characterize the extreme loads on wind turbines. A heavily instrumented Micon 65/13M turbine with SERI 8m blades is being used as the primary test turbine for this test series. This turbine is located in Bushland, TX, a test site that exposes the turbine to a wind regime that is representative of a Great Plains commercial site. The turbine and its inflow are being characterized with 60 measurements: 34 to characterize the inflow, 19 to characterize structural response, and 7 to characterize the time-varying state of the turbine. In a companion paper, Sutherland, Jones and Neal\(^1\) give a detailed description of the turbine, the site and the instrumentation. In this paper, a preliminary analysis of the structural and inflow data is presented. Particular attention is paid to the determination of the various structural loads on the turbine. Long-term fatigue spectra are also presented.

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