

Static Load Testing of Short Pile and FEA Simulations for Utility-Scale Solar Energy Project

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Abstract

The total installation capacity of solar energy in the U.S. reached 2,000 MW in 2011 and exceeded 14,000 MW in 2016, respectively. Falling construction cost made the utility-scale solar energy affordable. This paper presents the details of pile load testing that is widely used in industry to help reduce the construction cost. Simulations using finite element analysis for the static pile load testing were carried out, and simulation results were compared with on-site testing data. Interpreted design parameters based on single tested pile and parameters obtained from codes were compared.