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Blade Manufacturing Improvements
Development of the ERS-100 Blade

Final Project Report

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Sandia National Laboratories
Contract – AX-2111A

ABSTRACT

The objective of this program was to investigate manufacturing improvements for wind turbine blades utilizing the Seemann Composites Resin Infusion Molding Process (SCRIMPTM), reusable silicone bags and heated molds. The goal of this blade manufacturing program was to overcome primary risks that prevent commercial application of available technology and develop practical, profitable solutions for domestic and international wind energy markets. The program participants obtained these gains through design and manufacturing optimization. Implementation of this program started in July of 1998, and the first prototype ERS-100 blades were completed in July of 1999. The program included a series of test activities to evaluate the strength, deflection, performance, and loading characteristics of the prototype blades. The tests were broadly categorized as either qualification tests, which occurred in a laboratory environment, or operational tests, which took place on a wind turbine producing electricity in a commercial wind plant environment.