QUARTERLY REPORT FOR THE 1ST QUARTER 2000

DOE Field Verification Program for Small Wind Turbines

Agreement No. DE-FC36-99GO10464

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NY/NJ DISTRIBUTED WIND POWER FIELD VERIFICATION PROJECT

Date Published – May 2000

**PREPARED FOR THE UNITED STATES
DEPARTMENT OF ENERGY**

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Summary

During the 1st Quarter, AWS successfully executed an *Agreement for Professional and Technical Services* with Bob Bechtold, the host for the Webster, NY installation. The Agreement officially commits host organization cost sharing for the project, and describes the specific responsibilities of each party. AWS continues to work with the other host organizations to develop similar Agreements and to prepare for the host site installations. Testing at the National Wind Technology Center (NWTC) continues to be monitored.

On March 6, AWS executed Amendment No. A001 to the subject cooperative agreement. This Amendment provides additional DOE funds to cost share the installation of a 120-foot self-supporting tower at Liberty Science Center (LSC) in Jersey City, NJ. This change in scope from the original project proposal (120-foot guyed lattice tower) is responsive to concerns over public safety at the Liberty site. Also during the quarter it was determined that no permit would be required from the NJ Land Use Regulation Department since the Science Center is not located in a wetland, open-air, or transition zone and no permission would be required from the Waterfront Commission since the Science Center is located more than 500 feet from a tidal water body. On February 25, the President and CEO of LSC sent a letter to the Director of the NJ Department of Environmental Protection, Division of Parks and Forestry, requesting permission for the proposed installation.

On March 30, AWS requested DOE approval for a change in scope for the Babylon project. The Town would now like to install the turbine near an Environmental Education Center located at a barrier beach several hundred yards to the east of the originally proposed location. The change in location would still offer the same challenging marine environment and excellent exposure to the prevailing winds as the original site, but also provides a more secure location from a public safety perspective.

Technical Issues

The Bergey test site at the NWTC experienced a number of inverter faults and display failures during the first quarter. Several software revisions were made during February and March. These changes have successfully addressed the high number of code 60 (generator fuse) faults, but failed to resolve the code 21 (over-voltage) faults. A solution to the over-voltage fault problem is still being investigated, and as a result, the official start of the duration test has been delayed until the next quarter. A new chip was also installed in the inverter that resolved the problems with the inverter display.

Management Issues

The delay in the start of the duration testing at the NWTC will impact the project budget and installation plan. The turbine installed at the NWTC was to be installed at the Webster site at the completion of the duration testing, and therefore is configured with

the stiff blade option for icing, and the blades are painted black for better performance under icing conditions. The Webster site is permitted however, allowing installation to proceed this summer rather than waiting until the end of the duration test which is expected to be no sooner than November 2000. Bob Bechtold, the host for the Webster installation, is also anxious to get his turbine into the field. As a result, at the completion of the duration test at the NWTC, the turbine will be sent to the Quail Hill farm site in Amagansett, NY for installation. For this site, the turbine and tower will need enhanced corrosion protection and the blades will not have to be painted black. The cost of these modifications, and shipping charges to the Bergey facility in Oklahoma (if necessary), are not currently in the project budget.

Action Items and Remarks

Duration testing at the NWTC is expected to begin in the second quarter. AWS will continue to work with the host organizations to put professional and technical service agreements in place and to prepare for the host site installations. AWS expects to place an equipment order for the three Bergey Excel S/E 10 kW turbines to be installed at the Webster, LSC, and Town of Babylon sites in the second quarter. Installation at these sites is expected to take place early in the third quarter.