News Release

For Release: Immediately
Contact: Marie Hartis
Phone 509.994.6305
hartism@comcast.net
www.powersystemscooling.com

Parker unveils revolutionary two-phase cooling technology powered rack for wind turbine systems at WindPower 2011- Booth #3179

Parker precision-cooled racks deliver smaller, lighter more reliable thermal management solutions for renewable energy power conversion and storage applications at reduced maintenance costs

ANAHEIM, CA, May 22nd, 2011 – Parker Hannifin Corporation, the leader in motion and control technologies, unveiled today at WindPower 2011, a revolutionary new precision cooled rack for cooling critical wind turbine systems. The precision-cooled rack solution features Parker's proven and patented two-phase evaporative cooling technology, which uses non-corrosive, non-conductive fluid, as it vaporizes and cools hot surfaces on contact. Parker's Precision-Cooled Rack Solution can be used to cool critical wind turbine systems, including power conversion electronics, the generator and the gear box, and also provides an efficient solution in a smaller, lighter footprint than racks using alternative thermal management.

The flexibility of Parker's technology and its use in racks, cabinets, and containers has been implemented in many other industrial markets where it has been easily configured to cool a variety of applications such as power electronics, motors, transformers, and batteries. The dual-phase liquid cooling process continuously cycles a refrigerant within a sealed, closed-loop system to cool a wide range of systems. The system uses a small pump to deliver just enough coolant to the evaporator - usually a series of one or more cold plates optimized to acquire the heat from the device(s). In so doing, the coolant begins to vaporize maintaining a cool uniform temperature on the surface of the device. The resulting two-phase coolant is then pumped to a heat exchanger where it rejects the heat to the ambient and condenses back into a liquid, completing the cycle.

By taking advantage of this two-phase evaporation process, system level cost savings are realized due to the use of smaller, lighter overall systems that are easier to maintain and run at lower, more reliable temperatures. Parker's Precision-Cooled Rack Solution is an ideal product for wind turbines where the size and weight in the nacelle continues to grow with total capacity. In addition, the Parker precision-cooled rack is the only product available today that offers the potential to double the power density of key major subsystems such as the generator and power conversion system, and whose modular thermal management elements greatly simplify onsite maintenance when required, while reducing overall maintenance costs.

The compact and light rack solution leverage Parker's long established and proprietary two-phase liquid cooling technology and rack systems, and offers a cost-effective alternative

solution for applications in renewable energy markets, such as wind and solar. For more information, please contact Parker's Precision Cooling Systems group at www.powersystemscooling.com. The Precision Cooling Systems group is part of Parker Hannifin's long established portfolio of thermal management technologies and systems for key industrial applications, and is based in New Haven, Indiana.

With annual sales of $10 billion in fiscal year 2010, Parker Hannifin is the world's leading diversified manufacturer of motion and control technologies and systems, providing precision-engineered solutions for a wide variety of mobile, industrial and aerospace markets. The company employs approximately 55,000 people in 46 countries around the world. Parker has increased its annual dividends paid to shareholders for 54 consecutive years, among the top five longest-running dividend-increase records in the S&P 500 index. For more information, visit the company's web site at http://www.parker.com, or its investor information site at http://www.phstock.com.

# # #