



Power+Energy™

Fueling the Hydrogen Economy

Power+Energy Inc. Receives Second Order For Bulk Hydrogen Purification System

The first system sold has been operating successfully in Japan since March.

For Immediate Release

IVYLAND, Pa./EWorldWire/Aug. 17, 2004 --- Power+Energy Inc. has recently received a second order for its innovative modular PE9000 series hydrogen purification system. This system, with a capacity of 1300 standard liters per minute, will be shipped to a new customer also located in Japan. The system will be installed in the fourth quarter of 2004.

Introduced in July of last year, the PE9000 Series system provides customers with a highly reliable supply of Ultra-Pure Hydrogen containing less than one part per billion total impurities. This UPH gas is typically used in the manufacture of advanced semiconductor devices such as light-emitting diodes, laser diodes and silicon carbide semiconductors. The system can be configured to supply from 300 liters per minute up to 10,000 liters per minute (20,000 cubic feet per hour or 624 cubic meters per hour) of ultra-pure hydrogen.

The unique design of the PE9000 system integrates multiple palladium membrane purifiers and P+E's next generation P130 control systems with PC-based centralized monitoring and control software. The proprietary software allows remote monitoring and control of the purifier system over LAN-connected PCs. Multiple redundant purifiers are mounted into modular racks. These modules include manifolding designed to allow individual purifiers to be serviced or hot-swapped without interruption to the facility's UPH supply. The PE 9000 systems feature integrated sensors and diagnostics to monitor system performance. If a problem is identified, the problem cell is isolated and a back-up purifier is automatically put on line, avoiding yield losses and maintaining UPH system capacity.

Established in 1993, Power + Energy Inc. develops and manufactures hydrogen purifiers and separators for a range of applications including semiconductor fabrication, analytical laboratories and fuel cell development. P+E has a worldwide customer base and supplies systems to many leading producers of compound semiconductors. The company is developing a new hybrid hydrogen separation technology specifically designed for fuel cell applications. This new membrane, based on advanced nano-structures, will be an enabling technology for the early adoption of fuel cells using hydrogen generated on demand from traditional or alternative liquid fuel sources.

P+E has recently been awarded two additional DOD-funded contracts under which it will develop specifically configured hydrogen separation units. The first contract (funded by DARPA / U.S. Army Research Office), is for portable fuel cells using methanol. The second contract (U.S. Navy: ONR / NAVSEA and NexTech) is for a 50 kW demo system, which will later be scaled up to a larger, 500 kW shipboard fuel cell system using diesel. P+E will also utilize this same hybrid membrane technology to develop lower-cost hydrogen purifiers for an expanded range of semiconductor and research applications.

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