

For immediate release

Diesel Fuel Cell Project Successfully Completed by Norwegian-Californian Partnership

September 13, 2011

SAFCCell, Inc. (Pasadena, CA) last month delivered a 1.2 kW solid acid fuel cell (SAFC) stack to Nordic Power Systems (NPS, Norway) having optimized the stack for weight and performance, thereby meeting the final technical milestone in its 18-month development contract with NPS.

In January 2010 SAFCell was contracted by the Norwegian system integrator to develop its patented SAFC stacks for incorporation into NPS's diesel auxiliary power units (APUs).

The SAFC stack demonstrated operability on commercial diesel reformat gas, under realistic operating conditions, with 75% the performance of lab testing under pure hydrogen. This minimal performance loss confirms SAFC tolerances to high levels of impurities that "poison" and dramatically decrease the performance of lower temperature fuel cell technologies.

"Hitting this final technical milestone is extremely gratifying for us at SAFCell, as we can look back on a very successful development contract with NPS and know that our stacks are now ready for commercialization in key initial markets requiring commercially available fuels such as diesel," stated SAFCell's founder and CEO, Dr. Calum Chisholm.

"The results have so far demonstrated some very attractive features for SAFCs compared to existing technologies," said Dr. Dag Overbo, the Technology Director for Nordic Power Systems.

The SAFC stack will be integrated into NPS' proprietary cool flame diesel reformer system, converting the chemical energy of the diesel fuel directly into clean electrical power and heat. Combining these two advanced technologies will result in lighter, quieter, less costly, and higher performing diesel fuel cell systems that NPS plans to market for both mobile and stationary auxiliary power applications. With support from the Norwegian Research Council the integration of these two technologies has proceeded rapidly.

NPS develops efficient, environmentally friendly fuel cell power packs that enable nearly silent and emission-free power generation from commercially available fuels. NPS' cool flame reformer innovation allows for onboard, on-demand diesel or biodiesel reforming in fuel cell systems, thus opening a variety of markets for fuel cell applications. As a preparation for commercial introduction of the power packs, NPS is currently delivering its first demonstrators to select partners.

SAFCell, Inc. develops scalable solid acid fuel cell stacks for applications requiring tens of watts to tens of kilowatts. Based on technology developed at the California Institute of Technology (Caltech), and operating at mid-range temperatures around 250°C, SAFCell's stacks tolerate fuel impurities that pose obstacles to other fuel cell technologies. This allows SAFCell stacks to run more easily on commercially available gas fuels (e.g., propane and butane) or liquid fuels (e.g., methanol, diesel and bio-oils), greatly reducing the overall fuel cell system complexity and cost. SAFCell is partnering with targeted system integrators to enter first portable, and then stationary power markets.

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About SAFCell Inc.

SAFCell is developing rugged, portable power systems for military and commercial markets. SAFCell's stacks are built using an innovative solid acid fuel cell design which allows fuel flexibility and reduced costs. SAFCell was formed in 2009 using technology developed and patented at the California Institute of Technology.

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