

Sandia/Boeing collaboration targets aircraft fuel cell application

Sandia National Laboratories and Boeing are collaborating on a project looking at the feasibility of using a hydrogen-powered fuel cell for providing backup power in aircraft.

Commercial and military aircraft use a variety of techniques for providing backup electrical power to critical subsystems during emergency scenarios. Depending on the aircraft, these may include dedicated battery power, in-flight operation of the auxiliary power unit, a ram air turbine, or other technologies.

The project is a new task under an umbrella cooperative research and development agreement signed between the two organizations in 2002.

Sandia is a National Nuclear Security Administration (NNSA) laboratory.

The project focuses on the use of a polymer electrolyte membrane (PEM) fuel cell for backup power. Sandia is leading investigations looking at electrical and environmental requirements, storage issues, and efficiency.

“Fuel cell technology represents a straightforward and innovative approach to gaining experience with alternative energy sources for airplane electrical power,” says Joe Breit, project manager and an associate technical fellow at the Boeing Systems Concept Center. “A significant part of our focus at Boeing Commercial Airplanes is looking at environmentally progressive technologies that can further reduce dependencies on oil-driven power sources. Our collaborative work with Sandia on this application is a step forward in that regard.”

The project taps Sandia’s 60 years of experience in hydrogen storage for weapons applications and more recent R&D in materials science and hydrogen storage engineering through its DOE-sponsored Metal Hydride Center of Excellence, said project manager Lennie Klebanoff of Sandia’s Livermore, Calif., site.

Sandia PEM researcher Chris Cornelius will evaluate fuel cell requirements, implementation and efficiency; Klebanoff will provide analysis of hydrogen storage options and issues.

Source: DOE/Sandia National Laboratories

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