

U.S. Army Exhibits Successful Fuel Cell

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Hawaii's first successful fuel cell is buzzing along at the historic Schofield Barracks Fire Station. Installed by Logan Energy under a U.S. Army Corps of Engineer Construction Engineering Research Laboratory demonstration program, U.S. Army Garrison, Hawaii, will be able to experience, firsthand, the benefits of fuel cell technology for one year.

The fuel cell, manufactured by Plug Power, uses a proton exchange membrane to strip hydrogen from high-grade propane from the Gas Company.

The hydrogen is combined with oxygen from air to produce electricity, and heat from the reaction is recovered to make hot water. Very low emissions and water are byproducts of the process.

About the size of two refrigerators and just as quiet, the fuel cell makes enough power and hot water for a large family residence.

Up to 5 kilowatts of electricity is produced by the fuel cell and fed into the Schofield electrical distribution system.

In the event of a power outage, the fuel cell disconnects from the system and dedicates power to life safety circuits in the fire station. The transfer is instantaneous and transparent to the fire station.

Dr. Mike Binder from the research laboratory and Sam Logan of Logan Energy recently visited Hawaii to certify fuel cell installations at a housing unit on Marine Corp Base Hawaii, Kaneohe Bay, in a Navy

maintenance building and at the Schofield Fire Station.

Logan Energy noted, that out of all the applications, the Schofield site fully showcases the benefits of the technology by using 100 percent of the waste heat and providing emergency power to the critical functions of an essential facility.

Logan Energy also noted that the Army site has been the most trouble free, and Logan is remotely monitoring its operations and logging data to evaluate fuel cell applications and to identify improvements.

With growing concerns about energy security, methods of distributed generation such as the fuel cell are being looked at to keep critical facilities operational in the event of island-wide power outages.

Because generation is on-site and waste heat can be used, the fuel cell offers additional reliability, energy efficiencies and low emissions not possible with central power plants.

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