Defense Distribution Center continues to lead the way in alternative fuels use

By Stacy L. Umstead, DDC Public Affairs

Since commencing its use of hydrogen fuel cell technology in February 2009 as part of Defense Logistics Agency's Research and Development process, the Defense Distribution Center's participation in the hydrogen fuel cell pilot program has had some momentous events.

Hydrogen, the fuel of choice for most fuel cell applications, is poised to be the cleanest supply of energy as it can be generated from a range of renewable sources and emits predominantly water vapor when converted to energy.

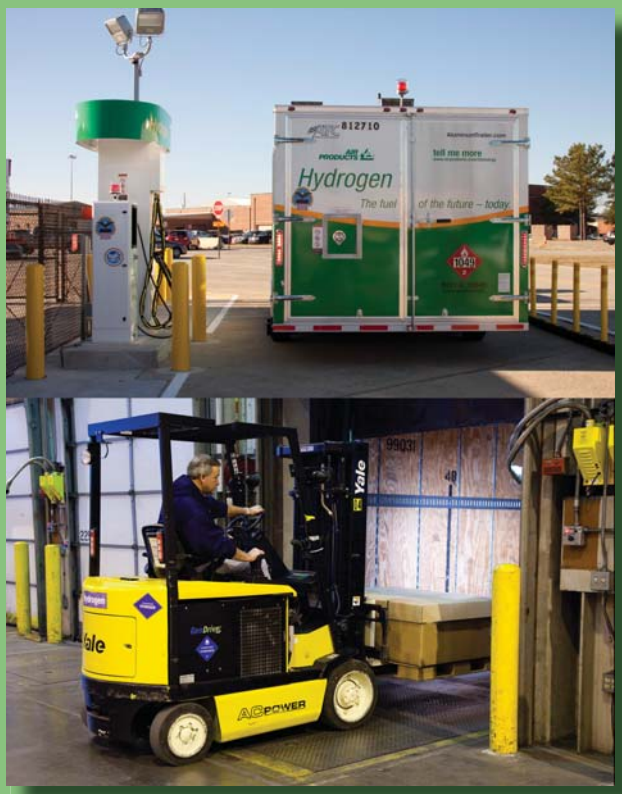
Fuel cells function like a battery, with external fuel (hydrogen) being supplied rather than the use of stored electricity. Not only does the technology reduce DLA's independence on imported oil, it reduces greenhouse gas emissions that can contribute to climate change.

Defense Distribution Depot Susquehanna, Pa., located in New Cumberland, Pa., was the first in a series of three pilot projects in DDC and chosen as the model site for exploring this type of energy technology. "Being that we are the largest and most active of the distribution centers and that we use over 600 forklifts daily during three shifts and a weekend shift, DDSP offered the ideal conditions to explore the business case and utility of this technology," said United States Navy Supply Corps Capt. John King, DDSP commander.

With 40 hydrogen fuel cell powered forklifts and a dispensing system located at DDSP, managers at the Department of Defense's largest distribution center have assigned the fuel-cell powered forklifts to the busiest work areas, testing them on all shifts.

DDSP is seeing longer usage of the hydrogen fuel-cell powered forklift, "The batteries used in the traditional forklifts last about eight hours. With the hydrogen fuel cell batteries, we're looking at about 24 hours of use," said King.

The second pilot program commenced at Defense Distribution Depot Warner Robins, Ga., in January of this year. DDWG is piloting 20 fuel cell powered forklifts, an outdoor hydrogen production, storage and dispensing system and mobile refuelers that distribute hydrogen to the forklifts at five different warehouse locations.



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"As DDWG prepares to become one of four Strategic Distribution Platforms within the DDC distribution network, the mission will grow and the customer base will expand. By participating in these types of innovative projects, we are positioning this depot to be better operationally and environmentally," said Bob King, DDWG director.

With DDSP and DDWG operations, DDC has achieved over 70,000 incident free operating hours and has dispensed nearly 12,000 kilograms of hydrogen through almost 20,000 refueling events.

Apr. 21 marked the first on-the-ground planning meeting for DDC's third pilot project at DDC's Western Strategic Distribution Platform, Defense Distribution Depot San Joaquin, Calif. DDJC will pilot 20 forklifts and electrolysis for hydrogen beginning this year and will also investigate the technical issues and business case for using solar energy instead of natural gas to produce hydrogen. The infrastructure will create hydrogen on site, using solar power to electrolyze water.

Programs like hydrogen and fuel cell technologies offer potential solutions to energy challenges related to battlefield logistics, energy security, and environmental sustainability. "As our mission evolves to meet the Warfighters' needs, DLA and DDC are committed to ensuring that we are providing timely, best value to our customers in the most effective and efficient manner. Using this technology and being 'green' is a part of that evolution," said DDC commander, United States Marine Corps Brig. Gen. Peter Talleri.