T-AKE program
(Lewis and Clark Class)

GE has been chosen to supply the complete power, propulsion and automation system for the U.S. Navy’s latest dry cargo/ammunition ships.

**Highly reliable multi-mission vessels**

The T-AKE program is a class of vessel designed to deliver ammunition, provisions, stores, spare parts, potable water and petroleum products to U.S. and allied warships and other naval forces, and to serve as a shuttle ship or station ship.

There are 14 T-AKE vessels, and they are primarily designed to be auxiliary support ships and to help the Navy maintain a forward presence. In this mission, they replace the Kilauea class (T-AE 26) ammunition ships and Mars-class (AFS 1) combat stores ships.

They can also serve as substitute on-station ships when operating in concert with Henry J. Kaiser-class (T-AO 187) oiler ships, and in this case replace Sacramento (AOE 1) fast combat support ships.

With the entrance of the USNS Cesar Chavez (T-AKE 14) into service in October 2012, all 14 ships now have been completed and handed over to Military Sealift Command, a Navy agency that operates support and special mission ships for the U.S. Navy.
The primary goal of the T-AKE program is to provide effective capability at low life cycle cost to active fleets. To meet that goal, the T-AKE ships had to be built to commercial specifications and standards and certified/classed by the American Bureau of Shipping (ABS), the United States Coast Guard and other regulatory bodies.

Advanced technology designed to meet specific requirements

GE’s Power Conversion business has been chosen for its ability to supply a fully integrated electric power, propulsion and automation system using advanced technology.

As a critical integrator for the T-AKE class of ships, Power Conversion has supplied a highly capable and flexible Integrated Power System (IPS) with 22MW of propulsion and a flexible and integrated power generation plant. The T-AKE vessels can enhance efficiency and distribute power as required for the vessels’ various missions. GE’s design and supply includes power generation and distribution, propulsion and automation/control equipment.

Power Conversion’s scope for design and commissioning of the Integrated Propulsion System includes the ship’s automation system hardware, propulsion and bow thruster drives, tunnel thruster, harmonic filters, tandem propulsion motor and supply of the main generators, transformers and switchboards, as well as the vessel management system and power management system.

Multiple Power Conversion locations in the United States, United Kingdom and France have collaborated on the T-AKE design, manufacture, testing and delivery of the new equipment and systems.

Scope of work: integrated propulsion system
- 2 x 11.475kVA + 2 x 10,200kVA alternators
- 6,600V switchboards
  + 2 x passive harmonic filters for MV bus
- 4 x 7,200kVA propulsion transformers
- 4 x 5.5MW synchroconverters + 4 synchronous tandem propulsion motors (2 x 11MW)
- 2 x 5,000kVA ship service transformers
- 1 x bow thruster, motor, drive and transformer
- Automation systems for propulsion control, power management and vessel auxiliary system management.

T-AKE key facts
Operator:  
MSC (U.S. Navy)
Shipyard:  General Dynamics/NASSCO
Length:  689 feet
Displacement:  45,195T (at design draft)

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