



DEPARTMENT OF ENERGY SPONSORED PROJECT

FLOATS BIG SAVINGS

WASHINGTON, DC –

John Archibald, acting director of the Federal Energy Management Program (FEMP) at the Department of Energy (DOE), was eager to promote energy upgrades of mobilized equipment. Based on concepts proposed by O.K. Electric Supply Company, a Department of Energy Service Company, FEMP sponsored a pilot retrofit of the USNS Mohawk.

Savings Evaluation

A lighting system upgrade offered the potential of various types of savings. At port, the ship purchases electricity from the local utility. At sea, fuel is expensed to generate power for its lighting system. Available new technology provides longer component life, offering operational savings. And finally, high efficiency fixtures provide less heat, reducing HVAC costs in some areas.

Fluorescent Fixtures

The main fixture type on the vessel was a MIL-SPEC vapor tight fixture, utilizing (3) F20T12 lamps. Lamps offered a relatively short life of 9,000 hours, and the fixtures utilized pre-heat starters, which have an even shorter life than the lamps. The fixture body and lens were of a very high quality, well suited to a marine environment. The retrofit involved a reflector designed of highly durable specular material with a 25-year warranty. The fixture was reduced to (2) lamps and electronic ballast. New locking sockets were also installed. Starters were eliminated, and the new lamps had a rated life of 24,000 hours, greatly reducing future maintenance costs.

Other Areas

Recessed fixtures in cabins, the kitchen, and dining areas were also converted to T8 lamps and electronic ballasts. In some areas where fixtures were not in suitable condition to be upgraded, new non-metallic marine duty fixtures were installed. All fixtures utilized the same lamps for standardization.

Light Levels

In addition to reducing energy costs 50%, high efficiency reflectors more than doubled light levels in all areas. And unlike the original lamps, which depreciated 20%, new lamps maintain 94% of their light, insuring consistent lighting long term.



Engine Room Before



Engine Room After

USNS MOHAWK

Annual Savings	\$6,640.00
KW Reduction	50%
Payback	3.3 years
Annual Fuel Reduction	4,219 gallons
Cooling Reduction	2.3 tons

O.K. ELECTRIC SUPPLY COMPANY

224 WASHINGTON STREET – PERTH AMBOY, NJ 08862 – 1717 K STREET, NW – SUITE 1000 – WASHINGTON, DC 20006
TEL: 973) 826-6100 – FAX: (732) 826-6540 – INTERNET: WWW.OKELECTRIC.COM