

CASE STUDY:

H&H MARINE REPOWERS U.S. ARMY CORPS OF ENGINEERS' TOWBOAT

CUSTOMER

H&H Marine Services

LOCATION

Mississippi, USA

CAT® DEALER

Pukett Power Systems

PRODUCT

Cat® C4.4

INDUSTRY

Inland Waterway

SOLUTION

Repowers

PLUG & PLAY ELECTRONIC CAT® C4.4 GEN SET PROVIDES POWER & RELIABILITY TO SUPPORT MISSISSIPPI RIVER MAT WORK

The U.S. Army Corps of Engineers (USACE) leverages its engineering expertise to promote stability and improve quality of life. It provides public engineering services to strengthen national security, energize America's economy, and reduce infrastructure risks from hurricane and storm damage.

In Mississippi, the USACE's Mat Sinking Unit (MSU) places hundreds of thousands of articulated concrete squares which are tied together to form mats, also known as revetment, along the Mississippi River to protect flood control works, prevent riverbank erosion and provide navigable waterways for commercial transportation. The unit's work spans the Memphis, Vicksburg and New Orleans districts' jurisdictions and more than 900 river miles. Normally, 4x25-foot sections of squares are tied together to make a mat, and 35 squares form a launch. Each supply barge holds 533 squares of mat, consisting of 950 tons of concrete.

The main job for the towboat M/V Harrison is pushing mat barges and tending the MSU. Built in 1988, the vessel's Cat® 3304 generators had been overhauled twice. As the engines had accumulated 90,000 hours of service, USACE sought to give the 1,200-horsepower towboat a new lease on life.



AFTER

BEFORE

DOCKSIDE TURNKEY REPOWER SAVES TIME AND COSTS

USACE awarded a contract to Vicksburg, Mississippi-based H&H Marine Services for assistance with the project. Having been awarded previous overhaul projects for the M/V Harrison, H&H Marine was familiar with the towboat and understood the technical requirements needed to enable the vessel to perform the intense mat work.

A pair of Cat C4.4 engines was recommended for the gen set repower for several reasons. With its newly redesigned cooling system, the Cat C4.4 allows a repower to be performed dockside rather than at a shipyard, saving considerable time and cost. As a standardized plug and play package, the Cat C4.4 ensures parts availability for the life of the engine while delivering the robust, reliable performance USACE had experienced with its previous Cat engine. Additionally, Cat dealers are no more than 75 miles from anywhere on the Mississippi River, ensuring quick and easy access to skilled service and support when needed.



“THE CAT C4.4 PACKS A LOT OF POWER IN A DROP-IN PACKAGE, PROVIDING THE RELIABILITY AND SERVICEABILITY WORKBOAT OPERATORS NEED.”

-PAUL HENSON,
OWNER OF H&H
MARINE SERVICES

RESPONSIVE, SKILLED SUPPORT

Having performed 20 repowers over the past 10 years, H&H Marine turned to Cat Dealer Puckett Power Systems to facilitate the dockside project. Puckett has provided H&H Marine dependable and responsive support for 20 years, supplying parts, drawings and technical expertise for every type of project.

Puckett provided the fittings, hoses and other components to make the generator drop-in ready. Only a day was needed to remove the Cat 3304 generators. The compact, self-contained design of the Cat C4.4 engine enabled H&H Marine to use the existing skid, saving the time and expense of having to cut the skid from the boat. The new gen set matched all the existing plumbing and electricals, speeding the installation process. Additionally, the newly redesigned cooling system not only reduced project cost but also eliminated the need to install new piping; important for older boats' limited room.

With the installation complete, Puckett performed the startup and commissioning services. The entire project took just 10 working days – much faster than shipyard repowers.

PLUG AND PLAY EASE

The M/V Harrison is currently in operation and based on the long life of the current gen set's predecessor, the USACE looks forward to many hours of use in support of their operation.

“The Cat C4.4 packs a lot of power in a drop-in package, providing the reliability and serviceability workboat operators need,” said Paul Henson, owner of H&H Marine Services. “Working with Puckett Power Systems enables us to perform dockside repowers quickly and cost-effectively.”

Gary Sarrat Jr., Caterpillar Marine inland & tug segment key account manager added, “The trim design and single circuit cooling system allow the electronic Cat C4.4 engine to be a turnkey gen set solution that keeps repower costs low and meets today's towboat operators' needs.”