LPD 17 Flight II Program Moves the Navy Forward With Common Rail Fuel Injection

WASHINGTON – The next generation LPD 17 Flight II Class amphibious transport
dock ships are moving forward in Main Propulsion Diesel Engine (MPDE) efficiency by installing the common rail fuel injection system on the ship's FM Colt-Pielstick PC2.5 Sequentially Turbocharged (STC) engine, the Naval Sea Systems Command said in a Feb. 8 release. This technically advanced system replaces the existing mechanical fuel delivery system and is expected to yield significant lifecycle cost savings due to
reduced fuel usage and maintenance costs.

"We made the right decision to incorporate reduced fuel consumption, reduced emissions, less maintenance and improved reliability into our next generation of amphibious ships," said Capt. Brian Metcalf, LPD 17 class program manager for Program Executive Office (PEO) Ships. "Innovation should be driven into all levels of design, and this is just one example of NAVSEA's culture of affordability mission."

The project began in 2015 with discussions between PEO Ships, NAVSEA's engineering and ship lifecycle management directorates, and Naval Surface Warfare Center Philadelphia Division (NSWCPD), who is serving as technical lead for the contract. Fairbanks Morse engineers collaborated with MAN Diesel and NSWCPD to develop the prototype, which was tested on a future USS Fort Lauderdale (LPD-28) engine.

Upon completion of testing, the common rail fuel injection components were removed and the mechanical fuel injection components were re-installed and
retested prior to shipment. Prototype testing on the factory

engines demonstrated fuel savings across the Navy operating envelope, and an emission-reducing engine operating profile was also developed.

The future USS Richard M. McCool Jr. (LPD 29), currently under construction at Huntington Ingalls Industries Shipyard in Pascagoula, Mississippi, will be the first of many amphibious ships delivered to the Navy with common rail fuel injection MPDEs.