

SBIR Success Story

As a small business, METSS services are extremely cost competitive and ideally suited to perform non-biased 3rd-party testing and evaluations, compliance, and qualification testing for U.S. Navy and private shipyards. Teaming agreements with other small businesses will enhance the entire process (manufacturing, logistics, filtration, and end-user support) in the same way that 2190-TEP is procured and installed.

LA-Class Submarines Converted

- USS Hampton (SSN 767), PNS (2017)
- USS Springfield (SSN 761), PNS (2017)
- USS Columbia (SSN 771), PHNS (2018)
- USS Columbus (SSN 762), HII-NNS (2018)
- In process/scheduled; Shipyard unnamed
- USS Santa Fe (SSN 763)
- USS Charlotte (SSN 766)
- USS Tucson (SSN 770)

Selected Publication

Ricks, W., K. Heater, J. Sanders, and B. Collett, Synthetic Lubricating & Hydraulic Oil for Motion Control, Steam Turbines and Gears, Military Symbol 2190-TEP Replacement, USN Contract N00024-05-C-4169, Final Report Nov 2015.

Naval Benefit

METSS's synthetic oil reduces onboard fire hazards, maintains stability over large temperature changes, and resists moisture contamination (corrosion) and oxidation. Significantly extends duration between oil changes by at least factor of two, and results in less corrective machinery downtime due to carbon and varnish build-up.

Acquisition Sponsors

PEO SUB & NAVSEA: Thus far, more than 20 Los Angeles-class submarines have committed to fully adopting METSS's technology through engineered overhauls between 2016 and 2028. Columbia-class submarines are expected to install METSS 2190-S at new construction. Converting Seawolf-, Ohio-, and Virginia-class boats are moving toward adoption especially as all respective ship alterations (ShipAlts) have been approved.

The Future

US Atlantic and Pacific Fleet Commanders have approved development of ship alterations for integration of the METSS's oil on all classes of submarines. Surface Fleet integration of synthetic hydraulic and lubricating fluid is anticipated as the submarine force fully implements the changeover. NAVSEA's PEO Submarines estimates that 4-6 submarines will be refitted with 2190-S per year for the next ten years.

Manufacturing Capability

METSS can produce approximately 7,500 gallons of 2190-S per batch. Based on a 4-day production cycle: 2 days for production and 2 days for internal QA/QC. METSS is currently producing 2190-S in Westerville, OH; however, METSS maintains another DLA -approved facility in Waverly, OH. Therefore, the total production capacity is 15,000 gallons/week or 720,000 gallons/yr.



Westerville, OH



Waverly, OH