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## Miratech's V-CAT DOC Makes List

**National Clean Diesel Campaign's Emerging Technology List is first step toward EPA verification and funding eligibility**

Miratech's V-CAT diesel oxidation catalyst (DOC) has been placed by the U.S. Environmental Protection Agency (EPA) on the National Clean Diesel Campaign's Emerging Technology List for marine Electro-Motive Diesel (EMD) engine emission reduction applications. The listing is the first step toward EPA verification of the emissions reduction system and makes the V-CAT eligible for inclusion in requests for funding through the EPA Clean Diesel Program.

The V-CAT integrates a special high-strength DOC into the exhaust manifold of EMD engines. According to Jonathan Roberts, Miratech sales manager for locomotive and marine markets, this system addresses several chal-

lenges that have hampered previous emission control efforts such as limited space, low exhaust gas temperatures and the need to keep exhaust backpressures low.

"We've met these challenges in V-CAT by, first, designing the system to be 'plug-and-play,' integrating the catalyst directly into the exhaust manifold within the existing footprint and keeping open access to the service areas needed on EMD engines for regular maintenance," said Roberts.

"At the same time, because the gases are hotter upstream from the turbocharger, integrating V-CAT into the exhaust manifold effectively addresses the issue of low exhaust gas temps. V-CAT keeps the exhaust backpressures

below EMD-recommended levels by providing a large catalyst surface area in a small space, using removable, square catalyst elements featuring Miratech's Vortex substrate and proprietary catalyst coatings," Roberts added.

Miratech also offers customers a thermal insulation option to minimize heat loss and the amount of heat entering the space around the engine.

The V-CAT has been listed by EPA as a Clean Diesel Emerging Technology for marine two-stroke, Tier zero, Tier 1 and Tier 2 turbocharged and roots blown EMD 567, 645 and 710 engine models. Pending verification, EPA has assigned V-CAT emissions reduction levels of 25% for particulate matter (PM), 70% for carbon monoxide (CO) and 50% for hydrocarbons (HC), for marine test cycles.

Already EPA certified for locomotive applications, V-CAT has demonstrated emissions reduction levels in real-world use and for locomotive line-haul and switching test cycles, said Roberts. Miratech expects full EPA verification of V-CAT performance in marine applications in 2010.

The Energy Policy Act of 2005 authorizes the EPA to award grants and low-cost revolving loans to eligible entities to fund the costs of a retrofit technology that reduces emissions through development and implementation of a certified engine configuration, verified technology or emerging technology for marine engines, locomotives and other applications.

Last year, the Clean Diesel program funded the purchase or retrofitting of 14 000 diesel-powered vehicles and pieces of equipment, according to the EPA. The American Recovery and Reinvestment Act (ARRA) of 2009 added an additional US\$20 million to Clean Diesel funds for competitive grants to reduce diesel emissions through the use, development and commercialization of emerging technologies. ARRA also provided more than US\$240 million in new funding to support the implementation of verified and certified diesel emission reduction technologies and state-administered clean diesel grant and loan programs. 