



CUMMINS TIER 4 FINAL FIELD-TEST PROGRAM EXCEEDS 140,000 HOURS, GAINING VALUABLE EXPERIENCE WITH OPERATORS ON-SITE

05 March 2014

Two-Year Program Includes 70 Machines Working Under The Toughest Duty Cycles

LAS VEGAS (March 5, 2014) – Cummins Inc. (NYSE: CMI) announced today that the company's Tier 4 Final/Stage IV field-test program has accumulated over 140,000 hours with operators working in commercial service. The field-test program, initiated two years ago, includes nearly 70 different machines, encompassing the broadest range of applications and the toughest duty cycles. The equipment is operating on sites selected specifically to cover the most challenging conditions and extremes of temperatures.

A combination of remote monitoring and frequent site visits by Cummins engineers to interview the field-test operators has provided valuable insight into Tier 4 Final performance ahead of engines and exhaust aftertreatment entering full production. As a result, engine calibrations and operating characteristics have been fully optimized to achieve the highest fuel economy and better torque delivery.

The field-test program went beyond typical wheel-loader and excavator endurance test cycles to cover a wide variety of specialized equipment. That includes a snow groomer at very high altitude in the Alps, a container handler working high hours on the port side and a rock drill working on a mine site in very dusty, abrasive conditions. Equipment was operated in the high humidity of Florida and the extreme cold of a Canadian winter.

"With a very wide range of machine types working at challenging on-site locations, Cummins application engineers were able to build up the most comprehensive mapping of equipment duty cycles, load factors and operating conditions we have ever created," said Jennifer Rumsey, Vice President, Engineering – Cummins Engine Business.

"This meant that from the start of the near-zero emissions regulations on Jan. 1, 2014, Cummins could ensure that our engines entered production as proven platforms, ready to provide the most dependable performance under the toughest conditions they might encounter," added Rumsey.

One of the other key deliverables of the Tier 4 Final field-test program was an assessment of system reliability compared with that of previous engines. Operators report that Tier 4 Final equipment uptime is every bit as impressive as what they experienced with their Cummins Tier 3-powered machines. Operators found that cleaner, quieter and smoother performance with Tier 4 Final engines makes a real difference to their working environment.

In addition to Cummins impressive total of 140,000 field-test hours, many equipment manufacturers have conducted extensive field-test programs, adding tens of thousands of additional hours.

Up To 10 Percent Lower Fuel Use

Overall results from the field-test program indicate that Cummins Tier 4 Final technology lowers fuel consumption by up to 10 percent compared with that of an equivalent Tier 3 machine, dependent on duty cycle and application.

Cummins field-test work has paid close attention to minimizing Diesel Exhaust Fluid (DEF) consumption by employing the most effective spray pattern techniques to encourage better decomposition of the fluid. Cummins results show that DEF is typically dosed at just 3 percent to 4 percent of diesel by volume.

Initially focused on the QSB6.7, QSL9 and QSX15 6-cylinder engine range across the 174 hp-to-675 hp (130-503 kW) power range, the field-test program then expanded to incorporate the new heavy-duty QSG12 and compact QSF2.8. Field-testing is also well underway with the 4-cylinder QSF3.8 and QSB4.5 engines, ready for the Jan. 1, 2015, Tier 4 Final emissions effect date for the 75 hp-to-173 hp (56-129 kW) power category.

In North America, engines above 751 hp (560 kW) are required to meet Tier 4 Final emissions regulations commencing Jan. 1, 2015. Field-testing of Cummins QSK high-horsepower engine range for mining is already in progress, including the QSK19 engine rated at 800 hp (597 kW).

About Cummins Inc.

Cummins Inc., a global power leader, is a corporation of complementary business units that design, manufacture, distribute and service diesel and natural gas engines and related technologies, including fuel systems, controls, air handling, filtration, emission solutions and electrical power generation systems. Headquartered in Columbus, Indiana, (USA) Cummins currently employs approximately 48,000 people worldwide and serves customers in approximately 190 countries and territories through a network of approximately 600 company-owned and independent distributor locations and approximately 6,500 dealer locations. Cummins earned \$1.48 billion on sales of \$17.3 billion in 2013. Press releases can be found on the Web at cummins.com or cumminsengines.com. Follow Cummins on Twitter at twitter.com/cumminsengines and on YouTube at youtube.com/cumminsengines.

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