

PROGRESS OF MACK TRUCKS, INC.
IN IMPLEMENTING OFFSET PROJECTS UNDER THE CONSENT DECREE
July 15, 2005

I. Incentive Projects

Pursuant to Paragraph 84 of the Consent Decree between the United States and Mack Trucks, Inc., Mack agreed to develop an incentive program that would reduce emissions from a certain number of pre-settlement engines, and lower required emissions from MY 2000 – 2002 engines. In February 2003, Mack submitted to EPA a proposal to revise the Scope of Work for the program. This revision was due to unforeseen economic conditions, which led to the sale of fewer than expected incentive vehicles. A 150,000-ton emission reduction was originally contemplated under the program. Mack was able to achieve a 112,500 ton reduction. Under the revised Scope of Work, Mack achieved additional reductions through the retirement of AB&T credits. Mack also conducted additional measures, in the amount of \$1.75 million, under other offset projects.

II. California Offset Project

Pursuant to Paragraph 85(a) of the Consent Decree, and Paragraph 83 of the Settlement Agreement with California, Mack has developed and implemented a program for the use of natural gas vehicles in California. The project involved three phases, with the first phase including development and distribution of a 325 hp NG engine, and the second and third phases involving development of a 425 hp NG engine. Mack has completed the development and certification of a 325 hp engine, which meets a NO_x+NMHC limit of 2.0 g/bhp-hr and a PM limit of 0.05 g/bhp-hr. In addition, Mack completed the development and certification of a 425 hp NG engine meeting the same emissions limits. However, due to reliability issues, a decision was made with ARB's agreement, to not place the higher horsepower version into service.

Approximately 350 natural gas-powered refuse trucks have been placed into service in California, far exceeding the original project planned number. The requirements for the scope of work have been completed and a final project report is nearing completion. Mack Trucks, Inc. is continuing to develop natural gas engines that will meet the 2007 and 2010 emissions standards.

III. SCR and PM After-Treatment Demonstrations

Pursuant to Paragraph 85 (b) of the Consent Decree, Mack has developed and implemented demonstration projects for the use of selective catalytic reduction (SCR) and particulate after-treatment systems.

Ten trucks were retrofitted with SCR technology and operated at two fleets: eight with UPS in Stratford, Ct., and two with the NYC Department of Sanitation. Five of the ten trucks also have diesel particulate filters, which are similarly being monitored for performance. The vehicles have undergone two years of service, as required.

Mack retrofitted 35 vehicles from the NYC Department of Sanitation, United Parcel Service, and Waste Management with passively regenerating catalyzed DPFs. Problems associated with compatibility with low sulfur diesel (LSD, 500 ppm S) necessitated the removal of five DPFs. Thirty trucks have operated successfully using ultra-low sulfur diesel (ULSD) and will remain in operation beyond project completion.

152 trucks were also retrofitted with diesel oxidation catalysts (DOC) exceeding the original commitment of 150. These also remain in operation beyond project completion.

Mack has submitted the final reports from NESCAUM and WVU to the EPA and ARB. These projects are considered complete as of June 30, 2005.

IV. Ultra-Low In-Cylinder Emissions Engines

Pursuant to Paragraph 85(c) of the Consent Decree, Mack has implemented a project to achieve ultra-low in-cylinder emissions with a common rail fuel injection system. A Mack E7 engine was built and installed in a test cell in 2003. Initial results demonstrated an achievement of NO_x levels between 0.846 g/bhp-hr and 1.715 g/bhp-hr. The early pilot strategy, however, also revealed increased HC and CO levels.

In May 2004, the common rail system was installed on a Volvo MD11 engine to continue performance and emissions testing. This engine is expected to generate emissions data representative of a more viable, production-quality engine. Testing of the initial common rail design system was completed in June 2005 with demonstrated NO_x levels in the range of 0.8 - 1.0 g/bhp-hr with reasonable PM levels. Due to the potential benefit in emissions levels, the decision was made to upgrade the common rail hardware to a more production-like system with transient capability. This hardware is currently being procured and testing will continue with this common rail technology.

V. Heavy-Duty Diesel Truck Particulate Filter With Active Regeneration Retrofit

Pursuant to Paragraph 99 of the Consent Decree, Mack has implemented a project to assess the use of heavy-duty diesel truck particulate filters with active regeneration. Two filter systems with igniters were developed, one of which was installed on a vehicle operated within Mack's own fleet and a second on a Waste Management truck operating in West Virginia. The two vehicles, which served as early pilot systems, experienced a variety of issues which needed to be addressed for future systems. The two units were decommissioned until further improvements could be made on the system.

The supplier has since made significant advancements in their system design, and the new pilot retrofits will begin late third quarter 2005, into fourth quarter 2006. A second system supplier is currently optimizing their system in a test cell on a Mack engine. The initial pilot systems will be installed in the fourth quarter 2005, with the additional system being installed late in the second quarter or early third quarter 2006. As many as 70 engines will be retrofitted in total in the EPA and CARB programs.