WESTERN REGIONAL AIR PARTNERSHIP

Offroad Diesel Retrofit Program UPDATE

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TECHNOLOGY & RETROFIT PRODUCTS:

CARB has verified the Extengine Transport Systems Advanced Diesel Emission Control (ADEC) system for 1991 to 1995 model year off-road Cummins 5.9-liter diesel engines in the 150-200 horsepower range. The Extengine ADEC system is the first mobile diesel retrofit selective catalyst reduction (SCR) system to be verified by CARB. None have been verified by EPA to date. Applications include rubber tire excavators, dozers, and loaders, as well as utility tractors. SCR technology is designed to permit the NOx reduction reaction to take place in the oxygen-rich environment of diesel exhaust. To make the system work, a reductant is introduced into the exhaust. The technology is called "selective" because the catalytic reduction of the NOx with the reductant occurs preferentially to the oxidation of reductant with the oxygen. Urea is used as the reductant in the ADEC system. Major emission control components include a diesel oxidation catalyst (DOC), SCR catalyst, and an "ammonia slip" catalyst to limit the formation of ammonia in the diesel exhaust. The ADEC system has been verified to achieve a 25% reduction in PM and 80% reduction in NOx.

SCR technology has been used on stationary sources since the 1980s, but only recently has been applied to mobile sources. To date, retrofitting SCR systems has been limited, but this technology has been installed on both on-road and nonroad engines in demonstration projects in the U.S.

PROGRAMS:

A series of five bills were recently introduced in the California Senate to support emission reductions from port operations. SB 760 imposes a $30 fee per 20-ft. container, a portion of which is used to improve the rail system and on-dock rail facilities that serve the ports in California.

SB 761 imposes an anti-idling rule that limits engine idling time for trucks that serve the ports. SB 762 creates Intermodal Authorities and Port Congestion and Environmental Quality Commissions in the Los Angeles and Oakland areas. The bill permits the Commissions to grant port permits for authority for operation and the number of intermodal trucks that may move freight.

SB 763 provides for priority berthing to ocean vessels that use less than 0.2% (2000ppm) sulfur content fuel, and the ability to move to the front of any queuing line for priority docking.

SB 764 requires the development of baseline (year 2001) inventories of emissions from specified sources at the Ports of Los Angeles and Long Beach, requires public hearings to be held to discuss mitigation and control measures to reduce emissions, and requires that emission reductions to the baseline level be achieved by January 2008.

NEW PROJECTS AND FUNDING OPPORTUNITIES IN THE WRAP REGION:

In late February 2005, EPA announced the award of $1.6 million to 18 grantees for projects designed to demonstrate effective emissions reduction strategies for diesel fleets. A variety of projects were funded, including those involving on-road vehicles, locomotives, construction equipment, agricultural equipment and port cargo handling equipment. Within the WRAP region, grants were awarded for retrofitting commuter rail locomotives in the Sacramento Metropolitan Air Quality Management District, installing diesel particulate filters on onroad and off-road equipment operated by the Los Angeles Public Works Department, installation of diesel oxidation catalysts and closed crankcase ventilation systems for construction equipment operating in the Denver Colorado area, and retrofit of agricultural equipment in Idaho.

As part of its technical support work for the WRAP Mobile Sources Forum, Emissions Advantage, LLC identified nearly two dozen Federal grant programs that potentially could be used to support retrofit-related projects. Nine of those programs have application cycles that allow for applications to be received between mid-April and October.