

MAINTENANCE BULLETIN #33

Subject: Policy: 2010 EPA Emission Control Systems.

This Maintenance Bulletin #33 discusses new Emission Control Systems. In order to operate a safe, dependable and cost-effective fleet of fire, urban search & rescue, communications and support vehicles, the following minimum standards shall apply:

- I. OES Fire Engines built in 2010 and later have an emissions package that performs Selective Catalytic Reduction (SCR) which reduces diesel exhaust NOx into nitrogen, water and tiny amounts of carbon dioxide. This is in addition to the 2007 mandated Diesel Particulate Filter (DPF) that captures soot and burns it off during regeneration.
- II. SCR utilizes Diesel Exhaust Fluid (DEF) that is injected into the hot exhaust gases as a fine mist and is passed over a catalyst in a catalytic converter. DEF is a mixture of 67.5% purified water and 32.5% automotive-grade Urea. OES engines built after 2010 have a 5 gallon tank of DEF under the cab on the driver's side. There is a DEF gauge on the dashboard next to the fuel gauge.
- III. Consequences of running out of DEF are a 25% engine de-rate and a maximum vehicle speed of 5 mph, effectively putting the vehicle out of service.
- IV. DEF is available commercially under the name Diesel Exhaust Fluid. It is sold at truck stops, repair shops, auto/truck parts houses and Walmart. It is available in 2 ½ gallon cans to 55 gallon drums. DEF can be purchased with the State of California Voyager multi-company petroleum credit card that is issued for each OES Fire Engine. Assignees must ensure that adequate DEF is on the unit to carry out OES mobilizations. DEF will be available at Base Camp at the Ground Support Unit Fuel Vendor.
- V. DEF can be corrosive to vehicle components. If spilled, it should be flushed off immediately with water. If a large amount of fluid is spilled, it shall be considered a hazardous materials spill and shall be handled per the description on the container label.
- VI. An excellent publication regarding Emergency Vehicle Emissions Systems is available from the Fire Apparatus Manufacturers Association at FAMA DPF and SCR Guide 130102.docx