# UPDATED INFORMATIVE DIGEST

Sections Affected: Amendments to sections 1956.8(b), 1956.8(d), 1960.1(k), and 2292.6, Title 13, California Code of Regulations and the following documents which are incorporated herein by reference:

- "California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles"
- "California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles"
- "California Exhaust Emission Standards and Test Procedures for 1987 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles"

**Background** Existing California Air Resources Board (ARB) regulations establish standards for various properties of diesel fuel and other fuels sold or supplied commercially for use in motor vehicles in California. These are sometimes referred to as the ARB's "commercial specifications" for motor vehicle fuels. Existing ARB regulations also establish test procedures which are used to determine whether new motor vehicles and engines qualify to be certified as meeting the ARB's motor vehicle emission standards. These test procedures contain what are sometimes referred to as "certification specifications" for the various motor vehicle fuels that are used in certification testing.

Following a November 1988 public hearing, the Board adopted regulations which establish statewide commercial specifications for motor vehicle diesel fuel. These "reformulated diesel fuel regulations" set limits on aromatic hydrocarbon content and sulfur content. The regulation limiting aromatic hydrocarbon content includes provisions that allow large refiners to comply by selling an "alternative diesel fuel formulation" found through an engine test program to result in emissions equivalent to the emissions associated with diesel fuel meeting the large refiners' 10 percent aromatic hydrocarbon content limit. Title 13, California Code of Regulations, section 2282(g)(3) identifies the specifications of the 10 percent aromatic hydrocarbon content "reference fuel" against which an alternative diesel fuel formulation is to be compared in the engine test program.

Existing ARB regulations have provided that diesel fuels that meet the specifications set forth in Title 13, California Code of Regulations, section 2282(g)(3) may be used as an option in certification testing of 1995 and subsequent model-year passenger cars, light-duty trucks, and medium-duty diesel-fueled vehicles; 1995 and subsequent model-year medium-duty diesel engines; 1996 and 1997 model-year urban bus diesel engines; and diesel-fueled utility and

lawn and garden engines. The current diesel specifications in section 2282(g)(3) have allowed the use of diesel fuel with widely varying properties to certify diesel engines. The specifications do not have a lower limit on aromatic hydrocarbon content or sulfur content. Additionally, no upper limit on cetane number is specified. It is important for the specifications for certification fuels to be narrowly defined, to assure consistent test results.

The ARB has now adopted a new set of diesel fuel specifications which replace the specifications in section 2282(g)(3) for those instances where certification testing is allowed using diesel fuel meeting the section 2282(g)(3) specifications. The new specifications are based on the staff's analysis of the characteristics of commercially available 10 percent aromatic hydrocarbon content motor vehicle diesel fuel. The specifications include a natural cetane number of 47 to 55, and an aromatic hydrocarbon content of 8 to 12 percent. The amendments also provide that the specifications applicable to the diesel fuel used for in-use compliance testing are to be the same as the specifications applicable to the diesel fuel used in certification testing.

**Oxygen Specification for Natural Gas Certification Fuel.** The ARB's current specifications for natural gas certification fuel for 1994 and subsequent model vehicles and engines have included an oxygen content requirement of 0.5 +/- 0.1 mole percent. Industry representatives have raised concerns regarding the potential safety risk associated with the 0.5 mole percent oxygen content requirement. They stated that a 0.2 mole percent oxygen content is the maximum that can be blended within acceptable safety tolerances.

The ARB has now amended the oxygen content requirement for natural gas certification fuel to specify a maximum oxygen content of 0.5 mole percent, with no required minimum. This amendment has been adopted in order to reduce the potential safety risk in blending complying certification fuel.

**Commercial Specifications for LPG.** Following a March, 1992 public hearing, the ARB set an interim 10 volume percent propylene (propene) content requirement for commercial motor vehicle LPG fuel, applicable from January 1, 1992 through December 31, 1994. Starting on January 1, 1995, the propene content is limited to 5.0 volume percent. The two-year delay in the implementation of the 5.0 volume percent propene requirement was provided in response to concerns regarding the availability of LPG fuel meeting the lower propene specification. Recently, the Western Propane Gas Association (WPGA) requested that the ARB reevaluate the 5.0 volume percent propene requirement for LPG fuel that becomes applicable January 1, 1995. The WPGA claims that implementation of the 5.0 volume percent propene requirement could lead to supply shortages and market segregation, which could adversely impact the development of the market for commercial motor vehicle LPG fuel. In light of these considerations, the Board has extended the interim 10.0 volume percent propene content requirement for commercial motor vehicle LPG fuel until January 1, 1997. Starting on January 1, 1997, the propene content is limited to 5.0 volume percent.

**Comparable Federal Requirements.** The U. S. Environmental Protection Agency administers federal test procedures which contain specifications for diesel certification fuel to be used in certifying diesel motor vehicles and engines in the model years subject to the ARB's diesel certification fuel specifications proposed to be amended in this rulemaking (40 C.F.R. sections 86.113-94 and 86.1313-94). These sections of the Code of Federal Regulations also establish a maximum oxygen content specification of 0.6 mole percent for 1994 and subsequent model natural gas-fueled motor vehicles and engines. The ARB's certification procedures are not duplicative because under the federal Clean Air Act, California motor vehicles and engines will not have to be separately tested under the federal test procedures.

With respect to all motor vehicle and engines that are affected by the amendments pertaining to diesel certification fuel, the ARB regulations allow as an option the use of the certification fuels identified in the federal test procedures. LPG certification fuel meeting the oxygen content specification proposed in this rulemaking would also meet the federal specification. Accordingly, the amendments will not preclude motor vehicle and engine manufacturers from conducting one set of tests to demonstrate compliance with both the California and federal emissions standards, if they wish to use the results of a single set of tests to certify a motor vehicle or engine in all 50 states.