

## Updated Informative Digest

### **MODIFICATIONS TO THE EXHAUST EMISSION STANDARDS AND TEST PROCEDURES - 1985 AND SUBSEQUENT MODEL YEAR HEAVY-DUTY URBAN BUS ENGINES AND VEHICLES, THE FLEET RULE FOR TRANSIT AGENCIES, AND ZERO-EMISSION BUS REQUIREMENTS**

**Sections Affected:** Amendments to title 13, California Code of Regulations, sections 1956.1, 1956.2, 1956.3, and 1956.4.

**Background:** In February 2000 the Board confirmed its continued commitment toward improving emissions from public transportation by establishing a new fleet rule for transit agencies and more stringent emission standards for new urban bus engines and vehicles. The rule also promoted advanced technologies by adopting a zero-emission bus (ZEB) demonstration and ZEB acquisition requirements for transit agencies.

Recognizing the progressive nature of the regulations, the Board directed staff to report back regularly on implementation progress and to develop a test procedure to certify hybrid-electric urban buses (HEBs). Staff reported back to the Board at its September 20, 2001, and March 21, 2002, public meetings. As instructed by the Board, staff brought modifications to the fleet rule for transit agencies and a test procedure for certification of HEBs to the Board, which were adopted at the October 24, 2002, public hearing.

#### **Description of Regulatory Action:**

The Board amended sections not addressed in the October 24, 2002, hearing: modifications to the exhaust emission standards and test procedures for heavy-duty urban bus engines and vehicles, to the fleet rule for transit agencies, and to the ZEB requirements.

This rulemaking had two purposes. First, to allow the purchase by certain transit agencies of diesel HEBs for the 2004 through 2006 model years (MY). Second, to modify the ZEB requirements so that they conform with current and potential future market conditions and availability of ZEBs.

Staff expects a small positive effect on emissions from the amendments to the engine exhaust emission standards for urban buses and vehicles. Manufacturers will be allowed to sell a 2004 through 2006 MY diesel HEB certified to standards of 1.8 grams per brake horsepower-hour (g/bhp-hr) oxides of nitrogen (NO<sub>x</sub>) and 0.01 g/bhp-hr particulate matter (PM). Transit agencies on the diesel path would be allowed to purchase those diesel HEBs, provided they offset the difference between 1.8 g/bhp-hr NO<sub>x</sub> and the current diesel urban bus engine standard of 0.5 g/bhp-hr NO<sub>x</sub>. Offsets can be obtained through installing a retrofit device that

reduces NOx emissions or repowering to a lower emitting diesel or alternative-fuel engine.

In addition to the changes to the urban bus engine standards, the ZEB demonstration program has been revised to reduce the number of concurrent fuel cell buses and to extend the time period for the demonstration projects. At the time the transit bus regulation was developed, staff believed that the research and development of fuel cells would result in their application in transit buses before their application in light duty vehicles. The reverse has occurred, and manufacturers are focusing their efforts on developing light duty vehicle fuel cell applications. Despite the exemplary efforts of the transit agencies, the demonstration program is therefore behind schedule and the changes will match the program goals with the current status of technology.

The regulation amendments have no associated costs for implementation because the changes do not mandate purchases. Rather, the amendments provide the opportunity for transit agencies to purchase new diesel HEBs from 2004 through 2006. In addition, there is no added cost to the modification of the ZEB demonstration. The Board expects there will be benefits to businesses that produce or sell diesel HEBs.

**Comparable Federal Regulations:**

California's urban bus emission standards are more stringent than the federal requirements until 2010. Currently there are no federal emission standards for zero-emission or hybrid-electric buses.