

**Updated Informative Digest**  
**AMENDMENTS TO THE PUBLIC TRANSIT BUS FLEET RULE AND NEW**  
**REQUIREMENTS FOR THE TRANSIT FLEET VEHICLES**

**Sections Affected**

This action amends sections 1956.1, 1956.2, 1956.3, 1956.4, 2020, 2021 and adopt new sections 2023, 2023.1, 2023.2, 2023.3, and 2023.4, title 13, California Code of Regulations (CCR).

**Background**

In February, 2000 the Board (ARB or the Board) adopted regulations to control emissions from urban buses operated by transit agencies: Exhaust Emission Standards for New Urban Bus Engines and Vehicles; the Fleet Rule for Transit Agencies; and Zero-Emission Bus (ZEB) Requirements. In October 2002, the Board approved a number of modifications to the regulations to provide more flexibility to transit agencies to achieve required emission reductions, including a change to the particulate matter (PM) retrofit requirements; and adopted a new test procedure for certification of hybrid electric buses (HEB). In June 2004, staff proposed modifications to continue to provide reasonable and effective regulation of transit agencies by providing a mechanism for some transit agencies to purchase diesel HEBs and by aligning the ZEB demonstration project with the current state of technology.

Diversification in public transit services has led to the increased use of smaller buses and commuter service buses that are not subject to the existing fleet rule for transit agencies. Therefore, staff proposed additional requirements for emission reductions from these buses and trucks not covered under the current rule.

**Description of Regulatory Action**

At a public hearing held on February 24, 2005, the Board approved the proposed amendments as offered in the staff presentation. These regulatory amendments included:

- Add transit fleet vehicles to the scope of the Fleet Rule for Transit Agencies and require new oxides of nitrogen (NOx) and PM fleet emission reduction standards for these buses and trucks owned and operated by public transit agencies.
- Provide explicit guidance in the rule for newly formed transit agencies, established after adoption of the Fleet Rule for Transit Agencies.
- Modify the urban bus PM fleet reduction standard to allow for fleet growth once transit agencies have met the mandated final PM reduction deadline.
- Modify the urban bus diesel HEB engine emission standard to clarify the emission standards for non-methane hydrocarbon, carbon monoxide, and formaldehyde.

- Move existing Fleet Rules for Transit Agencies (title 13, CCR, sections 1956.2-1956.4), currently housed with the engine emission standards, to new sections set aside for controlling diesel particulate emissions from fleets. Because of the placement of these sections with the other fleet rules, modifications of sections 2020 and 2021 were made to correct definition applicability.

The adopted modifications to the Fleet Rule for Transit Agency are summarized below.

### **Transit Fleet Vehicle Requirements**

Staff added transit fleet vehicles to the scope of the Fleet Rule for Transit Agencies and required new NO<sub>x</sub> and PM fleet emission reduction standards for these buses and trucks owned and operated by public transit agencies.

#### **Applicability**

Staff defines a transit fleet vehicle as an on-road vehicle greater than 8,500 pounds gross vehicle weight rating (GVWR) powered by a heavy-duty engine fueled by diesel or alternative fuel, owned or operated by a transit agency, and which is not an urban bus. Transit agencies operating only gasoline powered vehicles are not subject to this rule.

In addition, staff added a new definition of a commuter service bus, which is a bus that would otherwise meet the definition of an urban bus except that its operations include very little of the stop-and-go operations of an urban bus. The definition is:

“Commuter Service Bus” means a passenger-carrying vehicle powered by a heavy heavy-duty diesel engine, or of a type normally powered by a heavy heavy-duty diesel engine, that is not otherwise an urban bus and that operates on a fixed route primarily during peak commute hours and has no more than ten stops per day excluding park-and-ride lots. A commuter service bus is a transit fleet vehicle.”

#### **Fleet Requirements**

The rule establishes a fleet average NO<sub>x</sub> standard and PM emission reduction requirement for transit fleet vehicles, phased-in between 2007 and 2010 (Tables 1 and 2). Staff did not require transit agencies to select a fuel path for transit fleet vehicles or require use of ultra-low sulfur diesel fuel before it becomes the only type of diesel fuel available in mid-2006. New transit fleet vehicles are subject to the heavy-duty diesel engine emission standards, and are not subject to the more stringent urban bus engine exhaust emission standards.

#### **Fleet NO<sub>x</sub> Average**

The rule requires that a transit agency meet fleet NO<sub>x</sub> emission averages of 3.2 (grams per brake horsepower hour (g/bhp-hr) by December 31, 2007 and 2.5 g/bhp-hr by

December 31, 2010 for its transit fleet vehicles (TFV) (Table 1). A transit agency calculates this value by summing the NOx portion of the engine emission standard of each TFV and dividing by the total number of transit fleet vehicles in its fleet. Staff expects transit agencies to achieve this fleet standard through fleet turnover, repowering older trucks, or retrofitting with a verified diesel emission control strategy (DECS) that reduces NOx.

**Table 1. Fleet NOx Average Requirements for Transit Agencies (g/bhp-hr)**

Fleet Type	Compliance Date		
	October 1, 2002	December 31, 2007	December 31, 2010
Urban Bus	4.8 <sup>1</sup>		
Transit Fleet Vehicles		3.2 <sup>2</sup>	2.5 <sup>2</sup>

1. Currently required in the Fleet Rule for Transit Agencies

2. Adopted 2/24/05

### Fleet PM Reductions

The rule requires that a transit agency reduce diesel PM emissions of its transit fleet vehicles by 40 percent as of December 31, 2007 and 80 percent as of December 31, 2010, compared to emissions as of January 1, 2005 (Table 2). A transit agency calculates its diesel PM emission total by summing the PM portion of the engine exhaust emission standard of each diesel-fueled transit fleet vehicle. Staff expects that some emission reduction will occur with fleet turnover, but a majority of the reductions will be achieved through retrofitting with a DECS or repowering with a cleaner engine.

**Table 2. Fleet Diesel PM Reduction Requirements for Transit Agencies (g/bhp-hr)**

Fleet Type	Baseline Year	Percent Reduction From Baseline				
		2004	2005	2007	2009	2010
Urban Bus <sup>1</sup>						
Alternative Path	2002	20	40	60	85 <sup>3</sup>	
Diesel Path	2002	40	60	85 <sup>3</sup>		
TFV <sup>2</sup>	2005			40		80 <sup>3</sup>

1. Currently required in the Fleet Rule for Transit Agencies

2. Adopted 2/24/05

3. In the final year of compliance and beyond the transit agency can meet a fleet average of 0.01 g/bhp-hr times the number of vehicles in the fleet.

### Urban Bus Fleet Diesel PM Requirement

The adopted rule allows, as an option, that a transit agency be able to meet a fleet average of 0.01 g/bhp-hr, in lieu of achieving the value of 15 percent of the January 1, 2002, diesel PM emission total. This new value would be calculated by a transit agency

multiplying the value equal to the lowest achievable particulate emission standard of 0.01 g/bhp-hr by the number of urban diesel buses.

### **2004-2006 Urban Bus Diesel Hybrid-Electric Engine Emission Standard**

The rule modified the adopted 2004 to 2006 diesel HEB engine exhaust emission standards to enable manufacturers to certify diesel HEBs for 2004 through 2006. Staff added engine exhaust emission standards of 0.5 g/bhp-hr NMHC and 15.5 g/bhp-hr CO and deleted the formaldehyde standard from title 13, CCR, section 1956.1(a)(11)(B).

### **"Newly Formed" Transit Agency Requirements**

A transit agency formed after the adoption of the Fleet Rule for Transit Agencies is required to notify the Executive Officer in writing of its existence and submit certain required reports to the Executive Officer. The new transit agency is required to choose a compliance path for its active fleet and notify the Executive Officer within 120 days of formation of its intent to follow either the diesel path or alternative path. A new transit agency that is a successor to an existing transit agency would be required to follow the compliance path of the transit agency out of which it has been formed. The new transit agency is also required to meet a specific NO<sub>x</sub> fleet average and a diesel PM emission total reduction goal, which are specified in the proposed rule.

### **Extensions and Additional Definitions**

In addition, the following compliance deadline extensions in the existing urban bus rule were added for use for transit fleet vehicles. Applicable extensions include:

- an extension of the diesel PM emission requirements for one year due to the unavailability of technology. A transit agency can apply annually;
- an extension for transit agencies in one hour ozone attainment areas from the intermediate PM compliance deadlines; and,
- an extension based on financial hardship for transit agencies with fewer than 30 vehicles (urban bus and TFV) in their fleet. The fleet size was increased to accommodate transit agencies with urban bus and transit fleet vehicles.

Additional following extension and exemption for transit fleet vehicles were adopted:

- an extension for a transit agency that is operating transit fleet vehicles under contract (turnkey operations) for one year. Transit agencies may apply annually; and,
- an exemption for low usage vehicle for transit fleet vehicles.

Also the following definitions were adopted:

- Commuter Service Bus is added as explained earlier to clarify when a bus is an urban bus and when it is a transit fleet vehicle;
- Diesel PM Emission Total is defined and the used in the corresponding sections;
- Low Usage Vehicle has been added to define transit fleet vehicles that get little use. The corresponding category for urban buses is an emergency contingency bus.
- New Transit Agency is defined to clarify the requirements for these transit agencies;
- NOx Fleet Average is defined and used in corresponding sections;
- Retirement or Retire provides that ARB consider a vehicle or engine retired only when it is sold out of state, the engine is scrapped, or the vehicle is converted to use as a low usage vehicle;
- Transit Fleet Vehicle is defined to provide the basis for the scope of the rule.

In addition, other definitions are moved from one section to another as part of the movement of the Fleet Rule for Transit Agencies from sections 1956.2 to 1956.4 to sections 2023 to 2023.4.