

# Environmental Fact Sheet

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## Approval of Urban Bus Retrofit/ Rebuild Equipment

*The Environmental Protection Agency (EPA) is approving an engine retrofit kit for certain urban transit buses that will significantly reduce particulate matter (PM) compared to current technology. This is the first retrofit/rebuild equipment that has demonstrated compliance with the stringent 0.10 grams per brake horsepower-hour (g/bhp-hr) PM standard. It is expected to reduce PM emissions by as much as 80 percent per bus compared to pre-retrofit levels.*

### **Urban Bus Retrofit/Rebuild Program**

On April 23, 1993, EPA finalized the Urban Bus Retrofit/Rebuild Program which is intended to reduce the ambient levels of PM in urban areas. The program is limited to 1993 and earlier model year urban buses operating in metropolitan areas with 1980 populations of 750,000 or more, whose engines are rebuilt or replaced after January 1, 1995. Approximately 40 urban areas are affected. Operators of the affected buses are required to choose between two compliance options: Program 1 sets PM emissions requirements for each urban bus engine in an operator's fleet which is rebuilt or replaced; Program 2 is a fleet averaging program that establishes specific annual target levels for average PM emissions from urban buses in an operator's fleet.

A key aspect of the program is the certification of retrofit/rebuild equipment. To meet either of the two compliance options, operators of the affected buses must use equipment which has been certified by EPA.

Under Program 1, a transit operator must use equipment certified by EPA as meeting a 0.10 g/bhp-hr PM standard, if such equipment is available for a life cycle cost of \$7,940 or less (in 1992 dollars). If such equipment is not certified, then a transit operator must use equipment certified by EPA as achieving at least a 25 percent reduction in PM, if such equipment is available for a life cycle cost of \$2,000 or less. If such equipment is not available, a transit operator must rebuild to the original engine configuration, or a configuration having the same or lower emissions. Equipment used for Program 2 must be certified as providing some level of PM reduction that would in turn be claimed by urban bus operators when calculating their average fleet PM levels attained under the program.

### **New Retrofit Kit Approved**

EPA has certified equipment manufactured by Engelhard Corporation as meeting the requirements of the Urban Bus Retrofit/Rebuild Program. Engelhard Corporation requested EPA approval in January, 1996, and after a public review period and resolution of comments, EPA has granted the approval. This certification applies to urban buses with 1979 through 1989 model year Detroit Diesel Corporation

6V92TA engines with mechanical unit fuel injectors.

This is the first retrofit kit that has demonstrated compliance with the stringent 0.10 g/bhp-hr PM standard. It will reduce PM emissions by as much as 80 percent per bus compared to pre-retrofit levels. Previously approved retrofit kits reduce PM emissions by 25 to 40 percent per bus.

Approval of this new technology does not affect engines originally certified by EPA as meeting California emissions standards. For urban buses other than those described above, the requirement to install EPA-approved equipment reducing PM by 25 percent will remain in effect until such time as equipment is certified for such buses which complies with the 0.10 g/bhp-hr PM standard.

### **Health and Environmental Benefits**

This certification will result in reduced PM emissions in approximately 40 urban areas covered by the program, thus helping states improve air quality. PM is a contributor to air pollution in both urban and rural areas. PM has been identified as a probable human carcinogen. High levels of exposure also cause increased frequency of bronchitis, asthma attacks and respiratory infections. Environmental impacts of PM include reduced visibility and deterioration of buildings.

## **Affect on Industry**

Prior to certification of this new technology, affected transit operators were required to install, at the time of engine rebuild, retrofit kits approved by EPA as achieving a 25 percent PM reduction. Such retrofit kits are available for approximately \$2,000 incremental to the cost of a typical rebuild. However, as a result of this approval, transit operators who rebuild 1979 through 1989 model year Detroit Diesel Corporation 6V92TA engines with mechanical unit fuel injection will be required to install an EPA-approved retrofit kit meeting a stringent 0.10 g/bhp-hr PM standard. The cost of such equipment may be up to \$7,940 incremental to the cost of a typical rebuild.

EPA determined in the original rulemaking for this program that such costs resulted in a cost-effective PM reductions. In an effort to lessen the cost impact of this decision on transit operators, EPA has approved several kit supply options aimed at providing increased purchasing flexibility.

## **For More Information**

Information on the Urban Bus Retrofit/Rebuild Program is available electronically via the EPA Internet server or via dial-up modem on the Technology Transfer Network (TTN), an electronic bulletin board system (BBS).

World Wide Web: <http://www.epa.gov/OMSWWW>

TTN BBS: 919-541-5742 (1200-14400 bps, no parity, 8 data bits, 1 stop bit);  
voice helpline: 919-541-5384

Information is also available by calling 202-233-9322 or writing to:

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