ACTION: Notice.

SUMMARY: In compliance with the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*), this notice announces that the following Information Collection Request (ICR) has been forwarded to the Office of Management and Budget (OMB) for review and approval: Verification of Test Parameters and Parts Lists for Light-Duty Vehicles and Light-Duty Trucks, OMB Control Number 2060–0094, expiration date 12/31/98. The ICR describes the nature of the information collection and its expected burden and cost; where appropriate, it includes the actual data collection instrument.

DATES: Comments must be submitted on or before October 21, 1998.

FOR FURTHER INFORMATION: For a copy of the ICR, call Sandy Farmer at EPA, by phone at (202) 260–2740, by E-Mail at Farmer.Sandy@epamail.epa.gov or download off the Internet at http://www.epa.gov/icr/icr.htm, and refer to EPA ICR No. 0167.06.

SUPPLEMENTARY INFORMATION:

Title: Verification of Test Parameters and Parts Lists for Light-Duty Vehicles and Light-Duty Trucks, OMB Control Number 2060–0094, EPA ICR Number 0167.06, expiration date 12/31/98. This is a request for extension of a currently approved collection.

Abstract: The EPA tests in-use vehicles in order to enforce compliance with light-duty vehicle and light-duty truck emission standards. The Federal Test Procedure (FTP), which is used for determining compliance, requires test parameters and procedures that are necessary to conduct a valid test. Therefore, after EPA has selected these parameters and procedures from previously submitted manufacturer data, EPA gives the motor vehicle manufacturer the opportunity to review and verify that EPA has selected the correct parameters and procedures for vehicle emission testing. Providing part numbers gives the manufacturer the opportunity to help ensure that defective or incorrect parts will be replaced by those which the manufacturer feels are necessary to correctly evaluate the emissions performance of the vehicles tested. Though this information request is voluntary, EPA uses the manufacturers' input as part of the verification of EPA's work. If this information is not reviewed and provided by the manufacturers, EPA and the manufacturers may waste resources on tests that were performed improperly and the manufacturers may not have as much opportunity to participate in a compliance program that has the potential to adversely affect them.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9 and 48 CFR chapter 15. The **Federal Register** Notice required under 5 CFR 1320.8(d), soliciting comments on this collection of information was published on May 8, 1998; no comments were received.

Burden Statement: The annual public reporting and recordkeeping burden for this collection of information is estimated to average 2 hours per response. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

Respondents/Affected Entities: Manufacturers of light-duty vehicles and light-duty trucks.

Estimated Number of Respondents: 15.

Frequency of Response: On occasion.

Estimated Total Annual Hour Burden: 150.

Estimated Total Annualized Cost Burden: 0.

Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the following addresses. Please refer to EPA ICR No. 0167.06 and OMB Control No. 2060–0094 in any correspondence.

Ms. Sandy Farmer, U.S. Environmental Protection Agency, Office of Policy, Regulatory Information Division (2137), 401 M Street, SW, Washington, DC 20460

and

Office of Information and Regulatory Affairs, Office of Management and Budget, Attention: Desk Officer for EPA, 725 17th Street, NW, Washington, DC 20503

Dated: September 16, 1998.

Joseph Retzer,

Director, Regulatory Information Division.

[FR Doc. 98–25196 Filed 9–18–98; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[FRL–6163–6]

Retrofit/Rebuild Requirements for 1993 and Earlier Model Year Urban Buses; Approval of a Notification of Intent To Certify Equipment

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of Agency approval of an application for equipment certification.

SUMMARY: The Agency received an application dated October 21, 1997 from the Engelhard Corporation (Engelhard) with principal place of business at 101 Wood Avenue, Iselin, New Jersey for certification of urban bus retrofit/rebuild equipment pursuant to 40 CFR 85.1404–85.1415. The equipment is applicable to Detroit Diesel Corporation's (DDC's) petroleum-fueled 6V92TA model engines having electronically controlled fuel injection (DDEC) of model years 1988 through 1993. On April 9, 1998 EPA published a notice in the **Federal Register** (63 FR 17411) that the notification had been received and made the notification available for public review and comment for a period of 45 days. EPA has completed its review and the Director of the Vehicle Programs and Compliance Division has determined that it meets the requirements for certification, conditioned on the terms discussed below in section IV. The effective date of certification is discussed below under **DATES**.

The certified equipment complies with the 0.10 gram per brake horsepower-hour (g/bhp-hr) particulate matter (PM) standard for the engines for which it is certified (see below). In addition, the equipment will be offered to all parties for $7,940 or less (in 1992 dollars) incremental to the cost of a standard rebuild. Certification of the ETX equipment, as it applies to engines of model years 1988 through 1990, is conditioned upon Engelhard complying with the terms discussed below in section IV.

The certification of this equipment triggers requirements for all transit operators using compliance Program 1 (including engines certified to meet California emissions standards) that have engines in their fleet covered by this certification.

ADDRESSES: The Engelhard application, as well as other materials specifically relevant to it, are contained in Public Docket A–93–42, Category XXII–A, entitled ''Certification of Urban Bus Retrofit/Rebuild Equipment''. Docket items may be inspected from 8 a.m. until 5:30 p.m., Monday through Friday. As provided in 40 CFR part 2, a reasonable fee may be charged by the Agency for copying docket materials.

DATES: Today's **Federal Register** notice announces the Agency's decision to certify the ETX equipment, as described below. The effective date of certification was established in a letter dated July 1, 1998, from the Director of the Vehicle Programs and Compliance Division to Engelhard Corporation. (A copy of the letter is in the public docket, which is located at the address noted above.) This certified equipment may be used immediately by urban bus operators, subject to the condition in Section IV. Transit operators having affected engines and using compliance program 1 are required to use equipment certified to the 0.10 g/bhp-hr PM standard when rebuilding or replacing applicable engines six months or more after September 21, 1998. For determining compliance with the requirements of program compliance option 1, the effective date of certification is September 21, 1998.

FOR FURTHER INFORMATION CONTACT: William Rutledge, Engine Programs and Compliance Division (6403J), U.S. Environmental Protection Agency, 401 M St. SW, Washington, D.C. 20460. Telephone: (202) 564–9297.

SUPPLEMENTARY INFORMATION:

I. Background and Equipment Identification

In a notification of intent to certify signed October 21, 1997, Engelhard Corporation (Engelhard) applied for certification of equipment under the urban bus program. The notification is clarified in letters from Engelhard dated February 9, 1998, June 4, 1998, June 15, 1998, July 1, and August 6, 1998. The equipment is referred to as the ETX rebuild kit, and is applicable to 1988 through 1993 model year Detroit Diesel Corporation 6V92TA diesel engines equipped with Detroit Diesel Electronic Control (DDEC).

The notification states that the ETX rebuild kit is designed to update all electronically controlled DDC 6V92TA DDEC II engines to either 253 or 277 horsepower (hp). The ETX kit incorporates engine components (cylinder head fire deck, valve faces and piston crowns) that are coated with Engelhard's proprietary GPX technology, a CMX catalytic muffler, and an improved turbocharger. The GPX® and CMX™ technologies are identical to the technologies of the kit certified to the 0.10 g/bhp-hr standard for DDC 6V92TA model engines that use mechanical unit injectors (MUI). That certification is described in the **Federal Register** on March 14, 1997 (62 FR 12166).

The basis for the kit is a 6V92TA DDEC II engine that is rebuilt to a standard 1991 to 1993 DDC specification. However, when the engine is rebuilt it will utilize ETX-specific coated cylinder heads, coated valves, cylinder kits incorporating coated piston domes, an improved turbocharger, and a CMX–5 catalytic muffler. The 1988 to 1990 model year engines also receive an upgraded control program for the electronic control module. The ETX parts list is provided in the letter to EPA dated August 6, 1998, which can be found in the public docket at the address listed above.

Engelhard indicates that the coated engine components utilize unique properties to improve the combustion efficiency of the engine to reduce the engine-out emissions of particulate matter (PM). The improved turbocharger operates like a typical turbocharger but with improved efficiency and airflow. The improved airflow improves combustion efficiency which reduces engine-out PM. The CMX–5 catalytic muffler incorporates Engelhard's oxidation catalyst technology to reduce PM emissions in the exhaust.

The specific catalytic converter part to be used depends on the type of coach as well as the type of engine. Engelhard's notification provides a table listing the various catalytic converter kits available for different engine/coach combinations. Therefore, transit operators cannot use the previously certified converter in place of the new converter in the candidate kit.

Using engine dynamometer testing conducted in accordance with the Federal Test Procedure (FTP) for heavy-duty diesel engines, Engelhard documented in its October 21, 1997 notification, PM emissions below the 0.10 g/bhp-hr level. This test data is shown in Table 1.

Engelhard presents emissions data from testing two baseline engines, one rebuilt to a 1988 California (50-state) configuration, and the other rebuilt to a 1991 through 1993 model year DDC DDEC II standard configuration (using a DDC DDEC II upgrade kit). A certification test was performed on the engine after being rebuilt with the ETX Rebuild Kit. Lists of parts used in the rebuilds are provided in a letter dated February 9, 1998, from Engelhard. This letter can be found in the public docket at the address listed above. Transient testing was performed in accordance with the federal test procedure of 40 CFR part 86, subparts N and I.

The certification testing document a PM emissions level of 0.09 g/bhp-hr, and also show that emissions of hydrocarbon (HC), carbon monoxide (CO), oxides of nitrogen (NO_X), and smoke are within the applicable standards.

The emissions data of the notification are summarized below in Table 1. Based on this testing demonstration, EPA believes that all ETX-equipped engines will meet the 0.10 g/bhp-hr PM standard because installation of the kit upon engine rebuild results in the replacement of all emissions related parts with a specific set of parts, the combination of which results in a documented PM level of 0.09 g/bhp-hr.

The fuel consumption impact of the ETX kit is discussed below as it relates to the life cycle cost analysis.

TABLE 1.—SUMMARY OF ENGELHARD TESTING

Gaseous and particulate test	g/bhp-hr					
	HDDE standards			1988 Calif 6V92TA DDEC II baseline [1]	1991–1993 6V92TA DDEC II baseline [2]	6V92TA DDEC II with ETX kit
	1988	1990	1991			
HC	1.3	1.3	1.3	0.8	0.5	0.2
CO	15.5	15.5	15.5	1.4	1.9	0.6
NO_X	10.7	6.0	5.0	5.5	4.7	5.0
PM	0.60	0.60	0.25	0.43	0.28	0.094
BSFC [3]				0.481	0.498	0.503

TABLE 1.—SUMMARY OF ENGELHARD TESTING—Continued

Gaseous and particulate test	g/bhp-hr					
	HDDE standards			1988 Calif 6V92TA DDEC II baseline [1]	1991–1993 6V92TA DDEC II baseline [2]	6V92TA DDEC II with ETX kit
	1988	1990	1991			
Hp (R/O) [4]				277/273 ...	277/281 ...	277/266
Smoke Test	Standards (percent)					
ACCEL	20			.....	.....	3.6
LUG	15			.....	.....	0.6
PEAK	50			.....	.....	8.1

[1] All 6V92TA testing was performed on engine identification number 6VF–118287.
[2] The DDC upgrade kit (25% reduction) configures an engine to the 1991 model year.
[3] Brake Specific Fuel Consumption (BSFC) is measured in units of lb/bhp-hr.
[4] Horsepower (Rated/Observed during testing).

Today's certification extends certification of equipment to engines originally certified, or rebuilt, to meet emissions standards of California (also referred to as 50-state configurations). The impact of this decision on transit operators is discussed in more detail in the ''Transit Operator Requirements'' section below.

The ETX kit is intended to be installed at the time of a standard engine rebuild. The contents of the ETX kit will vary depending upon the model year of the engine to be rebuilt. All ETX kits will include coated cylinder heads, coated cylinder kits, improved turbocharger, and CMX–5 catalytic muffler. Additionally, the kit for applicable 1988 through 1990 model year engines will include fuel injectors, engine camshafts, and ECM upgrade. To complete a rebuild of 1988 through 1990 model year engines, an operator must acquire on its own, the other required (specified) standard engine rebuild parts: Blower and engine gasket kit. To complete a rebuild of 1991 through 1993 model year engines, an operator must acquire the specified standard blower, fuel injectors, engine camshafts, and gasket kit. The emissions defect warranty will cover the parts which Engelhard supplies in the ETX kit.

Engelhard is required to provide a 100,000 mile defect warranty and 150,000 mile emissions performance warranty for the components of ETX kit.

The ETX equipment is certified to a PM emission level of 0.10 g/bhp-hr for all 1988 through 1993 DDC 6V92TA DDEC II urban bus engines using either diesel fuel #1 or #2 (including engines originally certified, or rebuilt, to meet California emissions standards). Table 2 lists the applicable engine models and certification levels associated with the certification announced in today's **Federal Register**.

TABLE 2.—CERTIFICATION LEVELS

Applicable models [1]	Engine code	Certified PM level
1988–1993 Detroit Diesel 6V92TA DDEC II	ALL (including those certified or rebuilt to meet California or 50-state emissions standards).	0.10 g/bhp-hr.

[1] Conditional certification applies to 1988 through 1990 model year engines. See discussion in section IV.

II. Summary and Analysis of Comments

Comments were received from four parties in response to the **Federal Register** notice (63 FR 17411, April 9, 1998): Detroit Diesel Corporation (DDC), Johnson Matthey, Incorporated (JMI), New York City Transit (NYCT), and Chicago Transit Authority (CTA). DDC is the original manufacturer of the engines to which the ETX kit applies, and both DDC and JMI have applied for certification of equipment to meet the 0.10 g/bhp-hr standard under the urban bus program for these engines. NYCT and CTA are both operators of urban bus fleets in areas to which the Urban Bus Rebuild Requirements apply.

Comments and issues generally fell into the following categories: (a) Equipment identification; (b) engine power rating; (c) emissions testing; (d) durability and in-service concerns; (e) installation and maintenance instructions; (f) exhaust back pressure; (g) components of the kit; (h) life cycle cost; and, (i) California Engines. These are discussed in the sections below.

Copies of the complete comments and other documentation are available in the public docket, which is located at the address stated above.

a. Equipment Identification

The Engelhard notification of October 21, 1997, proposed upgrading all engines to one standard 277 hp configuration. Both DDC and JMI comment that Engelhard should provide the programming for the electronic control module (ECM) for each applicable engine and fuel combination (left-hand rotation, right-hand rotation, diesel fuel #1, and diesel fuel #2). DDC also notes that two different sets of engine camshafts are necessary, depending upon engine rotation direction.

In response, Engelhard provides the ECM program numbers in its June 4 and 15, 1998 letters to EPA, as well as the camshaft part numbers for left-and right-hand rotating engines.

b. Engine Power Rating

Both DDC and JMI comment that the ETX kit would update all applicable engines, generally 253 and 277 horsepower, to only one standard 277 horsepower (hp) configuration. JMI questions whether there are additional costs or ramifications for transit operators who operate 253 hp engines, and states that Engelhard should justify

the upgrading of the 253 hp engines. DDC states that requiring conversion from 253 hp to 277 hp would unfairly penalize operators who presumably originally selected the 253 hp rating because it best met their operating requirements, would create hardship if vehicle cooling systems or drive lines needed to be upgraded to accommodate the higher power level. DDC states that, if the ETX kit is approved as a trigger of program requirements, then the trigger requirement should be restricted to the 277 hp rating.

In response, in letters to EPA dated June 15 and August 6, 1998, Engelhard states that it will offer 253 hp (high and low torque) configurations of the ETX kit. EPA notes that today's certification will trigger the 0.10 g/bhp-hr standard for both 253 hp and 277 hp engines. EPA notes that the only difference between either the 253 hp and 277 hp configurations is the ECM programming. Engelhard notes that DDC's own DDEC 25% upgrade kit, converts both 253 hp and 277 hp engines to one standard 277 hp. Engelhard states that the ETX 277 hp conversion does not require an upgrade of the cooling system—both the 253 hp and 277 hp engine ratings use the same cooling system. Further, the ceramic coated parts in the ETX kit reduce the load on the cooling system.

EPA notes that DDC's 25 percent upgrade kit for the DDEC engines converts applicable engines to one standard 277 hp configuration. However, this DDC kit is not required to be used by any operator, because the kit did not trigger any program requirements. Instead, the certified DDC 25 percent kit was an available option to operators that were required to meet the program requirement of reducing PM emissions by at least 25 percent.

c. Emissions Testing

NYCT comments that, although the ETX kit functioned adequately under the Federal Test Procedure (FTP), further emissions testing is required to prove that the ETX will perform to the same level of emission reduction when subjected to a bus's operational cycle. NYCT recommends using the Federal Transit Administration's Advanced Design Bus Urban Driving Cycle to provide assurance that the projected reductions are being achieved and that the full value of the investment in the technology can be achieved.

Engelhard notes that the testing required by the regulation was conducted, and that alternative cycle testing was not conducted.

EPA notes that to comply with the 0.10 g/bhp-hr PM standard of the Urban Bus Rebuild Requirements, manufacturers must show compliance using the FTP described at 40 CFR part 86 subpart N. This requirement is consistent with EPA's new engine certification program, which requires the engine FTP. Chassis cycle testing, as NYCT suggests, generally determines emission rates on a grams per mile basis, which is difficult to directly correlate to the grams per brake-horsepower-hour (g/bhp-hr) determined by the engine FTP. While the level of emissions reductions achieved by the ETX kit under the Advanced Design Bus Urban Driving Cycle would be interesting, emission reductions determined by chassis cycle testing may vary depending upon the specific driving cycle and the specific coach used, and these reductions may not be equivalent to the reductions predicted by the FTP. Chassis testing would be of no use towards determining compliance with the 0.10 g/bhp-hr standard because compliance with this absolute standard does not necessarily correlate with a specific reduction, and it would be a significant additional testing burden. The program regulation also requires that candidate equipment must not cause an engine to fail to meet applicable federal emission requirements (other than PM) under part 86, which also requires testing using the engine FTP. EPA believes that the FTP is the appropriate test cycle for determining compliance with the 0.10 g/bhp-hr standard, and that it is not appropriate to require Engelhard to conduct chassis testing to prove compliance with that standard.

d. Equipment Durability and In-service Concerns

DDC provided several comments regarding durability. First, DDC states that the performance and durability of the ETX kit has not been demonstrated and that there is insufficient information in the Engelhard notification. DDC acknowledges that the urban bus retrofit/rebuild regulations do not require such testing as a condition of certification, but expresses the concerns because trigger technology places requirements on transit operators. DDC notes that the ETX turbocharger is new, and without additional information, the effects of the turbocharger on the operational characteristics can't be assessed. DDC states concerns that the cylinder kits utilize DDC 15-to-1 nominal compression ratio piston domes modified to accept the GPX coating. The effective compression ratio of this cylinder kit is roughly 12.96 compared to roughly 13.96 with the standard DDC piston dome. The reduction in compression ratio can have substantial effects on cold starting, cold smoke, and noise. Experience with the ETX kit for the MUI engine should not be taken as evidence of satisfactory cold starting and noise performance because injection timing and spray characteristics are different between the DDEC and MUI systems.

JMI also provided several comments regarding durability. JMI notes that this ETX kit includes a new turbocharger, and that Engelhard should be required to provide durability data or history for the use of this part. Also, JMI states that Engelhard should be required to state which piston dome is used in the ETX kit, because of recent changes that DDC has made in certain design parameters in the piston dome, piston rings, and piston skirt of its 25 percent upgrade kit. JMI indicates that if the previous piston dome is used in the ETX kit, then transits should expect to incur problems related to the rings, and that Engelhard should modify its kit components and retest to confirm emissions data.

Both NYCT and CTA comment about durability and reliability. CTA asks whether Engelhard has performed thorough and long term in-service reliability testing to ensure that the coated parts will last as long as standard, non-coated parts. CTA notes durability problems that they experienced with CMX converter model 0060, requiring replacement of over 200 units in their fleet, and asks how much testing was performed on the CMX–5 to ensure that problems will not be duplicated. Maintenance, testing and reusability of used converts is a concern. CTA also asks how a transit operator judges whether a converter is still functioning correctly, and whether the engine coatings will affect oil analysis and other maintenance programs.

NYCT comments that there is virtually no in-service operation experience with the ETX kit, and states that such information is essential to show that the technology can function reliably on a large scale in daily operation. NYCT also states that it has experienced extraordinary costs using a previously certified Engelhard converter. NYCT has discovered that in certain circumstances the converter becomes plugged, which drastically reduces the service life of the units. The reduction in service life must affect the life cycle cost calculations. NYCT states that it has installed more than 1,500 Engelhard catalytic converters, and in-service back pressure checks have been very inconsistent and in some case are increasing. Two catalyst units are known to have plugged and have had to

be disassembled for repair. Increased back pressure results in greater fuel consumption, which should be included in the life cycle cost analysis.

In response to the DDC comments, Engelhard states that the improved Engelhard turbocharger of the kit operates on the same principal as DDC's certified MUI kit utilizing the Turbodyne Turbopac—increased air flow and improved turbocharger response and that Engelhard has had urban bus DDEC engines operating with GPX for nearly 7 years, turbochargers in operation for over 100,000 miles, and diesel oxidation catalysts in operation for over 300,000 miles. A turbocharger has been in operation since December 1997 on a revenue-service DDC 6V92 DDEC II bus with no durability, performance or operational problems. Engelhard says that the transit operator is happy with the improved fuel economy and performance due to the installation of the turbocharger. A similar turbocharger has accumulated over 100,000 miles of normal operation on a Class 8 tractor trailer utilized by Engelhard.

EPA notes that DDC does not specifically state what additional information on the Engelhard's turbocharger that it needs, and that Engelhard requests that information on the turbocharger remain confidential. Regarding the comment that the cylinder kit will reduce the compression ratio of the engine, Engelhard states that the statement is false and the combination of the coated cylinder head and coated piston is designed to maintain a compression ratio nearly identical to that of a standard cylinder head and piston.

In response to the JMI comments, Engelhard states that it supplies the cylinder kits of the ETX kit, which it assembles from standard DDC parts, and Engelhard wishes that the specific part descriptions remain confidential. In its May 30, 1997 letter to EPA, DDC describes the changes that it made to its cylinder kits in order to improve cylinder kit life, and states that the design changes have no effect on engine performance or emissions. DDC also notes that the previous parts are to be discontinued. Based on the available information, EPA has no reason to believe that the parts of the ETX kit will negatively affect emissions. Also, EPA notes that the components, as part of the certified kit, are required to be covered by the program warranties.

In response to the NYCT comments, Engelhard states that DDEC engines have been operating with GPX for nearly 7 years, turbochargers in operation for over 100,000 miles, and diesel oxidation catalysts in operation for over 300,000 miles. Over 500 buses (with MUI engines) have installed ETX kits with some in operation for over 18 months with no complaints about the coated components. The issue of coating durability was addressed during the certification process of the ETX kit for the MUI engines. If a coated component fails under warranty it will be replaced by Engelhard free of charge as specified in the emissions warranty. If one part of an ETX kit fails outside of the warranty, a transit will be able to purchase specific components having a standard Engelhard product warranty.

Engelhard states that it has worked closely with CTA to resolve the early problems experienced with the CMX model 0060, which were caused by inherent design defects of the bus and engine installation. The engine in this bus model vibrates excessively and has continually destroyed engine mounts, OEM mufflers, and catalytic mufflers regardless of the supplier. The CMX 0060 has been redesigned to overcome the problems. Due to the bus design, correct muffler installation is critical for the muffler durability. Engelhard worked with CTA to ensure proper installation to prevent future failures. All units have been replaced at Engelhard's expense, including those that failed due to incorrect installation, vibration failure, and muffler design failures. Engelhard states that the problems experienced are caused by the original bus design and limited to this one particular bus and CMX combination. The particular bus model is essentially limited to CTA, and is therefore not a widespread problem. Engelhard solved all of the durability issues associated with this CMX unit with the Engelhard re-design, which includes strengthening the inlet and outlet pipe mounting points to the CMX body, upgrading the muffler material from aluminized steel to stainless steel, and revising the catalyst sleeving. This redesign will be incorporated in the CMX–5 provided with the ETX kit.

Regarding NYCT's catalyst comments, Engelhard states that NYCT's problematic units were supplied by DDC and Donaldson as trap replacement converter mufflers, and do not have an Engelhard warranty. As a result, Engelhard does not know the history of the units. Engelhard and its distributor have been working very hard with NYCT to resolve their problems. Engelhard strongly suspects that the problem is caused by engine malfunctions and engine failures, because the catalysts have been installed for several years at this point in time, and the engines were probably not rebuilt prior to catalyst installation (since the catalysts were trap replacement units). Certified catalysts, which began to be installed since the end of 1995, are generally installed at the time an engine is rebuilt. When an engine begins to fail it starts to use excessive oil and emit particulate that have a very high soluble organic fraction, which can result in plugging. The 2 catalyst units that NYCT references as being plugged are Donaldson units in-use for 4 to 5 years (possibly beyond the 100,000-mile warranty period that would have been applicable to a certified catalyst), and the engines were not rebuilt prior to installation of the catalysts. Engelhard has offered to reclaim some of these Donaldson units for no cost to NYCT, but is under no warranty to provide the service.

Regarding the in-service back pressure checks conducted by NYCT, Engelhard has told EPA in a telephone conversation, that back pressure can vary due to several factors, including the amount of prior idling, and ambient pressure.

EPA notes that the NYCT comments reference several problems with catalysts. For several reasons, however, EPA does not believe that there is clear evidence that it is appropriate to apply additional costs, either in terms of additional fuel consumption or maintenance, to the life cycle cost analysis. First, catalysts used to replace exhaust traps are not certified under the urban bus program, and it is not clear that all in-service experience with such catalysts are relevant to certified catalysts. (Pursuant to an agreement between DDC and EPA, Donaldson traps were removed, because of severe durability concerns, and replaced with catalytic converter-mufflers.) As Engelhard notes, the problems NYCT has experienced occurred with uncertified trap-replacement catalysts, not those certified under the urban bus program, and the units were installed on engines that were not rebuilt prior to installation. Second, NYCT does not present any data for quantifying additional costs. NYCT does not indicate how much fuel economy is affected by any in-use increases in back pressure, or how often catalyst cleaning is necessary and how much time and material are required for cleaning. NYCT comments do not substantiate that a reduction in service life is due to catalyst plugging, or that additional maintenance for cleaning the catalyst is necessary. EPA notes that, from the information provided in NYCT's comments, 2 units plugged out of 1500, and that these were trap-replacement

units. Engelhard's service procedure for the CMX notes that ''catalytic converter mufflers are susceptible to plugging if the engine is operated under low load conditions for extended periods of time while (a) the engine is improperly maintained; or (b) the engine is not properly calibrated for the specific fuel type and use of the catalytic muffler.'' At this time, EPA does not have adequate basis to either confirm that additional maintenance or fuel consumption occurs with properly installed certified catalysts, or to quantify additional costs.

Regarding CTA's concern about re-use of catalytic converters, Engelhard states that it understands that operators would like to re-use catalytic mufflers, but a used catalyst is an unknown quantity. A method for accurately testing PM performance of a catalyst in the field does not exist. Therefore, Engelhard requires that a complete kit be installed for warranty purposes.

Engelhard states that the ETX kit does not need or require any additional maintenance above the recommended DDC maintenance and, in general, CMX converter mufflers do not require preventative maintenance if the engines are operating properly. All analysis and maintenance programs conducted by transit operators should continue as they are now.

EPA has previously certified an Engelhard equipment package utilizing GPX coatings (60 FR 47170, September 11, 1995). From the standpoint of physical durability of the coating, EPA is not aware of any premature wear or failure of this certified equipment. As mentioned previously, in response to concerns about the physical durability of the new GPX–5m coating, in a May 23, 1996 letter to EPA, Engelhard provided data from three in-use buses using previous generation GPX–4 coatings. Coating thickness measurements were made on piston crowns and cylinder head combustion chambers, and were found to be within nominal design specifications at an average of 123,000 miles. In addition, deposit formations on the combustion surfaces were nearly non-existent. Engelhard indicates that design advances in the current GPX–5m coatings are intended to further reduce deposit formation and increase coating durability beyond that of the GPX–4 coating.

EPA appreciates that transit operators are concerned with the durability of retrofit/rebuild equipment, and subsequent additional costs or engine damage that potentially could result from premature equipment failure. However, EPA notes that the urban bus retrofit/rebuild regulations do not require an in-service durability demonstration as a condition of certification. Rather, equipment certifiers, including Engelhard, are required pursuant to 40 CFR 85.1409 to provide a 100,000 mile equipment defect warranty and a 150,000 mile emissions performance warranty.

EPA believes that equipment suppliers will evaluate the durability of their equipment in order to minimize their liability resulting from the emissions defect and performance warranties. EPA believes that the available information does not indicate a durability concern with the equipment certified in today's notice, and therefore, does not provide sufficient basis to deny certification on these grounds. EPA will continue to monitor problems with this, and other certified equipment, and encourages transit operators to provide specific detailed information regarding in-service problems with certified equipment.

The equipment certifier is responsible for the emissions performance of the engine through the 150,000 mile emissions performance warranty period, if the transit properly installs and maintains equipment in accordance with the equipment manufacturer's instructions. The transit operator is responsible for proper installation and use of certified equipment, and is responsible for the emissions performance of equipment operated beyond the 150,000 miles emissions warranty period. Also, the retrofit/rebuild program does not obviate compliance with any state or local emission requirements, such as inspection/maintenance (I/M) or smoke testing programs.

e. Installation Instructions

DDC comments on several items of Engelhard's ETX ''Installation Instructions'' for the ETX kit that were unclear, contain errors, and/or lack appropriate instructions or information.

Engelhard agrees with DDC's comments, admits that these items are not necessary for installation of the ETX, and Engelhard will remove the requirements from the guidelines. Engelhard notes that the guidelines were originally developed for installation of GPX in any engine, and provided rebuild suggestions intended to prevent incorrect engine assembly.

EPA appreciates DDC's in-depth review of the instructions, but does not believe a detailed review of each item is necessary in today's **Federal Register** notice. Details of these comments are in DDC's letter to EPA dated May 22, 1998, which is available to interested parties in the public docket referenced above.

f. Catalyst Checking Procedure

Both JMI and DDC provided comments expressing opposition to the procedure recommended by Engelhard for determining whether the catalyst unit requires cleaning. JMI comments that Engelhard, in its procedure to determine whether the CMX–5 is operating properly, should be required to change its procedure to match DDC's, which states that exhaust back pressure measurements should be taken at wide open throttle and full load.

CTA asks whether the issue of back pressure exceeding DDC's limits has been addressed and resolved.

Engelhard's instructions involve operating the engine in a rated speed, no load condition (high idle) and recording the pressure drop across the CMX–5 unit. This is the same procedure recommended by Engelhard for determining back pressure across the original CMX catalytic muffler, and was derived from DDC Service Information Bulletin 7-D–95. DDC, however, contends that this service procedure was only intended for a limited population of 6V92TA engines that were originally equipped with particulate traps. (Pursuant to an agreement with EPA, these traps were removed because of durability concerns, and replaced with catalytic converter-mufflers.) DDC's states that its back pressure limits apply at all engine operating conditions, including the point of maximum exhaust flow which occurs at rated engine speed, full load. An exhaust system which just meets DDC's specified back pressure limit at WOT, no load (which is how the Engelhard procedure is conducted) will exceed the DDC limit over a large portion of the engine speed/load operating map and thus would be in violation of DDC's guidelines. Excessive back pressure results in fuel economy and power losses, and raises cylinder temperatures and increases soot build-up in the lubricating oil. These effects can reduce engine life.

Engelhard states that there is no difference between the specific 1993 engine models for which the DDC procedure applies, and the other standard DDEC II engines. EPA notes that DDC has provided no explanation of the difference, in terms of susceptibility to back pressure impacts, between the engines for which Service Information Bulletin 7-D–95 was intended, and those which are covered by this, and other, retrofit certifications utilizing catalytic mufflers.

Regarding back pressure of the CMX units on the CTA buses discussed above, Engelhard states that in testing done by Donaldson, the OEM muffler had a back pressure of 3.7 inches Hg at full load. The CMX actually has a back pressure equal to or lower than the OEM muffler. In all cases the CMX–5 converter mufflers meet the back pressure limitations of the OEM muffler designs and DDC specifications.

EPA is not requiring Engelhard to revise the screening procedure, for several reasons. First, and in general, the program regulations do not require any specific check procedures for any components of certified kits. Second, EPA notes that the maximum exhaust back pressure specification for several engine calibrations (codes) of the 6V92TA DDEC II engines is 4.0 inches of mercury (as specified in DDC's application for certification of 1991 and 1992 6V92TA DDEC engines under EPA's new engine certification program), and that the back pressure specification for the Engelhard procedure is 3.0 inches of mercury. Third, the Engelhard procedure is intended as a ''screen'' to determine whether a catalyst muffler needs cleaning, not to measure exhaust back pressure for comparison with DDC's maximum specifications. For additional discussion of the issue, refer to page 12177 of the **Federal Register** notice describing certification of the ETX kit for 6V92TA MUI engines (62 FR 12166, March 14, 1997.

Any future information provided by interested parties regarding the impacts of certified equipment on exhaust back pressure would be taken under consideration. EPA appreciates that there may room for improvement in maintenance procedures of equipment certified under this program. Such concerns, in general, can also occur with procedures relating to new engines. EPA encourages all equipment certifiers to issue revised check procedures when appropriate. If Engelhard determines that another check is appropriate, or if EPA becomes aware that back pressure is exceeding manufacturer limits on in-use buses, then Engelhard should revise such procedures. Pursuant to 40 CFR 85.1413, EPA has authority to decertify equipment that does not comply with the requirements of the regulations.

g. Components of the Kit

Engelhard has proposed to exclude certain parts from the ETX kit, which are typically replaced during a standard rebuild. JMI comments that Engelhard should include the fuel injectors, camshafts, and blower in the ETX kit, and provide program warranty coverage for the parts. JMI feels these parts should be included in the kit because the parts are emissions related.

Engelhard will make available two ETX kits—one for the 1988 through 1990 model year engines, and the other for 1991 through 1993 model year engines. The particular kit required for any specific engine will be determined by the DDC parts list requirement for the engine, which will be determined by engine serial number. The kits differ as described below. Applying the kit upon engine rebuild will result in engines configured to one general (physical) ETX configuration. A difference will be the ECM programming, which is related to power rating, fuel type, and engine rotation direction.

The ETX kit for the 1988—1990 model year engines will include fuel injectors and engine camshafts. The kit for the 1991—1993 will not include the fuel injectors or engine camshafts. Neither kit will include the blower assembly. The injectors and camshafts that must be used with the ETX kit are common, non-unique, rebuild components for the 1991—1993 model year engines, and therefore, not required to be in the certified kit for 1991—1993 model year engines. A transit operator would typically acquire the same parts for a ''standard'' engine rebuild of a 1991 through 1993 model year engine, and the operator is responsible for doing so when using the ETX kit. These parts (fuel injectors, engine camshafts, and blower assembly) are required to be the specified DDC-supplied components, because the DDC components were used for the certification testing. In a letter from DDC to EPA dated June 12, 1996, DDC states that there were no emission related design changes made to the blower between 1988 and 1991. Therefore, EPA does not require the blower to be included with the ETX kit because it is not unique for the applicable engines. Engelhard is required to provide program warranty coverage only for parts included with the kit.

The ETX kit includes a list of the specific engine rebuild parts that are required to be used upon engine rebuild with the ETX kit. EPA notes that in accordance with 85.1404, operators are required to maintain records of all parts used in rebuilds. Using incorrect components with the ETX kit at the time of kit installation can be considered as failure to install a certified kit under the urban bus rebuild requirements, and subject the operator to the significant penalties provided by the regulation.

h. Life Cycle Cost

EPA requested comments on the life cycle cost analysis in the **Federal Register** notice of April 9, 1998 (63 FR 17411) which summarized the Engelhard notification and made it available for public comment. Section 1403(b) of the program regulations describe those items which must be considered when analyzing life cycle cost of equipment, including equipment purchase price, incremental fuel cost/savings, installation costs, maintenance costs, and other costs specific to fuel additives and fuel conversions. All commenters provided input on at least one cost-sensitive topic area. The comments received are described below, and are grouped by general item or topic.

JMI comments that Engelhard should substantiate the validity of the $6,966 that Engelhard uses (in their October 21 notification) for the cost of a standard rebuild, and that EPA should scrutinize that figure and subject it to the ''weighted rebuild'' cost analysis that was completed for the Engelhard 0.10 g/bhp-hr MUI certification. EPA's determination of life cycle costs is presented below in this section. EPA's position on comments or issues, and scrutiny and analysis of life cycle costs, are discussed below.

1. Comments on Purchase Price

Both DDC and JMI comment that Engelhard should include the cost of reprogramming in the life cycle cost.

In response, Engelhard states that it will include the necessary ECM reprogramming as part of the cost of the ETX kit.

2. Comments on Maintenance Cost

NYCT comments that it does not know the details of maintenance required for the ETX kit, but it is confident that there is some maintenance required, and the cost of such maintenance should be included in the life cycle cost calculations.

Engelhard states that the ETX kit does not need or require any additional maintenance above the recommended DDC maintenance. Engelhard notes that, as with any engine there is a certain amount of up-keep required. In the ETX application, Engelhard has stated that no additional maintenance is required above and beyond the standard maintenance specified by DDC for the 6V92 DDEC engine. Because the maintenance requirement is identical to a standard engine, a cost of maintenance is not necessary for the life cycle cost calculation. Additionally, Engelhard maintains that the CMX–5 catalyst unit

is maintenance-free over the emissions performance warranty period of 150,000 miles, and notes that the currently certified CMX has been in operation for over a year.

EPA believes that the engine upgrade portion of this equipment requires no additional maintenance incremental to that required on a standard rebuild. In addition, the coated component portion of the kit cannot be serviced because the coated parts are internal to the engine. Therefore, no additional maintenance is expected related to the coated components. Regarding the catalyst unit, EPA has not seen any clear and convincing information that it requires periodic maintenance during its warranted lifetime, on properly operating engines. Therefore, in the life cycle cost analysis presented below, EPA assumes that the ETX kit does not require any additional maintenance above the recommended DDC maintenance.

3. Comments on Fuel Consumption

NYCT comments that the ETX kit will have a fuel penalty, when based on bus operating profiles, that is greater than the $1,315 determined by Engelhard based on the FTP certification engine test cycle.

Both DDC and JMI comment that the test data indicate one percent increase in fuel consumption between the ETX (0.503 lb/bhp-hr) and the 1991 DDEC engine test (0.498 lb/bhp-hr), and that this cost impact should be included in the life cycle cost analysis. JMI states that Engelhard's standard rebuild engine (a California configuration) is not an appropriate baseline for fuel consumption impact because the California standard for NO_X (6.0 g/bhp-hr) is lower than the 49-state standard (10.7 g/bhp-hr), and an engine operating with lower NO_X emissions has higher fuel consumption. Also, it is improper to use the DDC DDEC II 25% upgrade kit fuel penalty, because the ETX kit uses a different turbocharger, and calls for Engelhard to conduct a baseline test on a 1988 federal engine. JMI has accumulated test data from a 1988 federal engine, and has made this data available to EPA. The data show a brake-specific fuel consumption (BSFC) for a 1988 federal configuration 6V92TA DDEC II engine of 0.460 lb/bhp-hr. JMI presents this data solely to illustrate that there is a difference between 1988 federal and California engines, and not to suggest that Engelhard should use JMI's baseline data.

With regard to NYCT's comment about fuel consumption, Engelhard responds that the fuel consumption data was generated during the Federal Test Procedure (FTP) as specified by the urban bus rebuild regulations. Therefore, Engelhard must use it as the basis for the life cycle cost.

EPA notes that 40 CFR 85.1407 (a)(3) states, in part, that certifiers must include in their notification of intent to certify ''(t)he percent change in fuel economy * * * based on testing performed over the heavy-duty engine Federal test procedure or an approved alternative test procedure''. Engelhard complied with this requirement by providing the percent change in fuel economy resulting from use of the ETX kit as measured over the heavy-duty engine Federal test procedure (FTP) described at 40 CFR Part 86 Subpart N. In addition, in order to demonstrate compliance with the 0.10 g/bhp-hr PM, and other regulated exhaust emissions standard, testing must be conducted using the engine-based FTP. Therefore, the procedure used by Engelhard is in compliance with program requirements, and EPA is not requiring Engelhard to perform testing beyond the program requirements.

Regarding the JMI and DDC comments that the data show a one percent fuel consumption penalty when the ETX kit is applied to 1991 model year engines, Engelhard has submitted, in one of its letters dated June 15, 1998, data from one additional test of the ETX configuration and two additional tests of the original DDC 1991–1993 model year configuration. The fuel consumption data, referred to as brake specific fuel consumption (BSFC), is measured in units of pounds of fuel per unit of engine work, or brake-horsepower-hour (lb/bhp-hour). The totality of fuel consumption data provided by Engelhard is summarized below in Table 3. All of this testing was conducted in the same test cell using the same basic engine (and power rating).

TABLE 3.—ENGELHARD BASELINE AND ETX TEST DATA

Test description	BSFC [1]	Average
ETX Kit (277 hp)	0.503	
ETX Kit (277 hp)	0.513	0.508
1991 50-s (277 hp)	0.498	
1991 50-s (277 hp)	0.519	
1991 50-s (277 hp)	0.511	0.509
1988 50-s (277 hp)	0.481	0.481

[1] Brake-specific fuel consumption measured in units of pounds of fuel per brake horsepower-hour.

The average fuel consumption of the two ETX tests (0.508 lb/bhp-hr) indicate that the ETX kit will present no fuel consumption penalty when compared to the average of three tests in the 1991 model year configuration (0.509 lb/bhp-hr). Also, the data indicate that installing the ETX kit on 1988 through 1990 50-state (California) engines will result in 5.6 percent increase in fuel consumption (comparing 0.508 to 0.481).

With regard to JMI's comment that Engelhard should conduct baseline testing using a 1988 model year 49-state (federal) engine, this data is not available (Engelhard has not conducted testing on a 1988 model year configuration). With regard to Engelhard's use of DDC data (supplied by DDC during the certification process for its 25-percent DDEC upgrade kit) for Engelhard's life cycle cost analysis, EPA believes that it is not the most accurate way to determine fuel consumption impact because of variables such as engines of different power ratings, in different test cells, and being conducted two years apart. Additionally, because different test cells were used, EPA agrees with JMI that it is not appropriate to use JMI's 1988 federal engine data as a baseline to compare data from ETX testing conducted for Engelhard. Instead, EPA believes that other data, as discussed below, is adequate to determine the impact of the ETX kit on 1988 through 1990 model year 49-state (federal) engines.

In a telefax to EPA dated June 5, 1998, JMI provided documentation of testing the 1988 model year federal 6V92TA that is referenced in its above-mentioned comments. Additionally, JMI provided documentation from testing a

1992 model year 6V92TA, in its notification of intent to certify equipment dated March 6, 1998. EPA believes that these test data, performed on 277 hp engines in the same test cell, can be used to compare a 1991 configuration (the 1992 model year is considered equivalent to the 1991) with a 1988 configuration. EPA believes that the difference predicted by these data will be equivalent to the impact on 1988–1990 engines resulting from installation of the ETX kit, because the above-mentioned ETX testing indicates that the ETX kit will result in no increased consumption compared to 1991 model year engines. The JMI test documentation show a measured fuel consumption of 0.483 lb/bhp-hr for the 1992 engine, which is 5.2 percent greater than the 0.459 lb/bhp-hr measured for the 1988 engine. These data predict that 1988 through 1990 model year configurations will experience 5.2 percent increased fuel consumption when equipped with the ETX kit. This level of impact is generally supported by the above-mentioned DDC data. That DDC data, as noted by Engelhard in its October 21, 1997 notification, shows an impact of 4.7 percent. The 5.2 percent impact predicted using the JMI data is greater than originally proposed by Engelhard (based on the DDC data) in its notification of October 21. Also, EPA believes use of the JMI data is more accurate because it was conducted using two configurations (1992 and 1988 model years) of the same power rating in the same test cell. The testing conducted by JMI can be found in the public docket located at the above address.

EPA recognizes that the available data is limited, but believes it adequate for the purpose of determining the life cycle cost analysis. In summary, the installation of the ETX kit on 1991–1993 model year engines is determined to result in no additional fuel consumption, on 1988–1990 50-state (California) engines is determined to result in 5.6 percent increased fuel consumption, and on 1988–1990 49-state (federal) engines is determined to result in 5.2 percent increased in fuel consumption. The impact of increased fuel consumption on life cycle costs is determined below.

4. EPA Determination of Life Cycle Cost

Section 1403(b)(1)(ii) describes those items which must be considered when analyzing life cycle cost of equipment, including equipment purchase price, incremental fuel cost, installation costs, maintenance costs, and costs of any fuel additives required. To trigger the 0.10 g/bhp-hr standard, the life cycle cost of equipment can be no more than $7,940 (in 1992 dollars), incremental to the cost of a standard rebuild.

In this section, EPA analyzes the life cycle costs using a methodology similar to that described in the **Federal Register** notice of March 14, 1997, which describes the certification of Engelhard's ETX kit applicable to DDC's 6V92TA engines with mechanical unit injectors (MUI). The analysis first determines the cost of a ''weighted'' rebuild, which reflects operators' use of non-original equipment parts and rebuilding certain components in-house. The weighted rebuild ''corrects'' all cost information to a 1992 base, which is the time period for which the life cycle cost limit of $7,940 is based. EPA uses the cost of a weighted rebuild to represent the cost of a standard rebuild, which is then used to determine a maximum allowable purchase price such that the life cycle cost of the equipment meets the life cycle cost limit. The maximum purchase price, when added to the incremental fuel penalty and installation cost, and offset by the value of displaced standard rebuild parts, must be no more than $7,940 (in 1992 dollars), incremental to the cost of a standard rebuild.

i. Cost of a standard rebuild. Engelhard presented a life cycle cost analysis in its notification signed October 21, 1997, and made changes to the analysis in subsequent letters to EPA. The Engelhard analyses rely on DDC suggested list prices to determine the cost of a ''standard'' rebuild. Engelhard, in one of its letters dated June 15, 1998, provides a letter from Atlantic Detroit Diesel-Allison with current suggested list prices for DDC parts. Table 4 below presents OE list prices presented by Engelhard for the standard rebuild parts affected by the ETX kit. In the table, EPA has corrected the information to a 1992 time period, using a multiplicative ratio of Consumer Price Indices (CPI). The average CPI for 1992 is 140.3, as specified by the program regulation. The April 1998 CPI, for all items and all urban consumers, is 162.5. These values are available from the U.S. Department of Labor, Bureau of Labor Statistics.

TABLE 4.—ORIGINAL EQUIPMENT (OE) PARTS PRICES

Item in kit (quantity)	OE suggested list price	Normally replaced at overhaul ?	Price corrected to 1992 (based on CPIs)
Cylinder Kits (6)	$2,394	Yes	$2,067
Gasket Kit (1)	207	Yes	179
Fuel Injectors (6)	1,688	Yes	1,457
LB Camshaft (1)	854	Yes	738
RB Camshaft (1)	731	Yes	631
Blower Ass'y (1)	575	Yes	496
Turbo Ass'y (1)	890	Yes	768
Heads Ass'y (2)	1,166	Yes	1,007
ECM Program (1)	(1)	No	
Totals	$8,505		$7,343

[1] Not required.

Engelhard, in one of its letters dated June 15, 1998, states that it is their experience that almost all major transits in major metropolitan areas use 100 percent DDC parts. Therefore, non-OE parts do not affect the life cycle cost. Also, Engelhard states that, although at one time a common practice, today virtually no large urban transit companies re-manufacture their own components (such as turbochargers, blowers, and heads). Engelhard further notes that in-house engine rebuilding refers to the process of disassembling and reassembling the engine, and that this is different from re-manufacturing engine components.

In response to Engelhard's comments about the current practice of (not) re-manufacturing components in-house, EPA believes that the current practice is not relevant. Instead, the relevant practice is the amount of in-house re-manufacturing at the point in time when the life cycle cost ceiling was established (that is, in the 1992–1993 time frame). EPA acknowledges that industry practice may have changed since 1993, for various reasons, such as general industry trends, or perhaps the urban bus program certification of kits that include most emissions related parts. However, at the relevant point in time (1993 or earlier), EPA believes that a significant number of transits re-manufactured parts in-house. EPA understands Engelhard's comment concerning the difference between in-house engine rebuilding and component re-manufacturing, but the practice of in-house re-manufacturing is supported by Engelhard's comments (''at one time this was a common practice . . .'') and EPA telephone conversations with transit operators. Therefore, for the determination of the cost of a weighted rebuild, EPA assumes that some parts used in the rebuild of engines are non-OE parts, and that most transits re-manufacture certain components in-house.

In comments related to certification of its ETX kit for 6V92TA MUI engines, Engelhard stated that the weighted cost approach should be adjusted to reflect an additional cost to transit operators who rebuild in-house, because parts are occasionally not rebuildable due to catastrophic failure. EPA is retaining this methodology for determining the cost of a weighted rebuild for DDEC engines. Engelhard stated that 10 percent of turbochargers and blowers are not rebuildable, and that 50 percent of cylinder heads are not rebuildable. When parts are non-rebuildable, a transit operator would typically purchase a new component at fleet cost. The nominal cost of these components assumes the exchange of a rebuildable core. If the core is not rebuildable, then the operator pays a core charge plus the nominal cost of the component. The sum of the component fleet price plus the core charge represent additional costs to fleets that rebuild in-house, due to non-rebuildable parts. When weighted based on the frequency at which the part is non-rebuildable, it yields an additional cost on a per-component basis. Consistent with the past cost analysis, EPA assumes in-house rebuild of three components: the turbocharger, the blower, and the cylinder heads. Table 5 below summarizes estimates of the additional costs related to the in-house rebuild of these parts.

Also, EPA has included injectors in Table 5 below, based on new information presented by Engelhard in one of its letters dated June 15, 1998. Engelhard stated that injectors should be included in this table because operators normally purchase rebuilt injectors that have a core charge. The 1998 core charge is $200 per injector and approximately 10 percent fail, but since the list price of a new injector is $604, an operator will pay the core charge and still purchase a rebuilt injector.

TABLE 5.—CORE COST IMPACT OF NON-REBUILDABLE PARTS

[1992 Dollars]

Item	OE suggested price	OE fleet price	In-house rebuild cost	Fraction damaged	Core charge (1)	Total cost to transit
A	B	C	D	E	F	G
1 Injector	$243	$224	NA	0.10	$173	$242
Blower	496	459	$223	0.10	474	294
Turbo	768	710	346	0.10	288	411
1 Head	503	465	227	0.50	395	543

The OE Fleet Prices for the blower, turbocharger, and cylinder heads are estimated by EPA, using the same ratio of the prices for these parts set forth during the certification process of the ETX kit for 6V92TA MUI engines. Core charges for the blower, turbocharger, and cylinder head are estimated by EPA based on the fractions (of OE suggested prices) as the values EPA used in the methodology of the analysis of weighted rebuild in the ETX 0.10 MUI kit. The core charge for the injectors is provided by Engelhard in one of its letters dated June 15, 1998. In-House Rebuild Costs are 45% of OE suggested prices, based on JMI comment relating to certification of the DDC MUI 25% upgrade kit (60 FR 51472, October 2, 1995).

For the blower, turbocharger, and heads, Table 5 above makes a correction to the calculation described in the July 19, 1996 **Federal Register** (61 FR 37738). Table 5 determines a weighted Total Cost to Transit, based on the fraction of parts damaged. Total Cost to Transit = (1–E)(D)+(E)(C+F) for the blower and turbocharger. For the cylinder heads, the Total Cost = (D)/2 + (C+F)/2, which is an average cost for one head. For fuel injectors, the Total Cost = (1–E)(C)+(E)(C+F) per injector.

Table 6 below summarizes the cost of a weighted rebuild (in 1992 dollars) including adjustments to the above components.

TABLE 6.—COST OF A WEIGHTED REBUILD

[1992 Dollars]

Item in kit	OE list price	Non-OE cost	OE fleet price	Weighted rebuild
1 Cylinder Kit	$2,067	$1,049	$1,777	$1,540
2 Gasket Kit	179	134	153	147
3 Fuel Injectors	1,457	NA	1,346	1,450
4 LB Camshaft	738	553	632	606
5 RB Camshaft	631	473	541	519
6 Blower Ass'y	496	294	459	302
7 Turbo Ass'y	768	411	710	424
8 Heads Ass'y	1,007	1,087	930	1,079

TABLE 6.—COST OF A WEIGHTED REBUILD—Continued

[1992 Dollars]

Item in kit	OE list price	Non-OE cost	OE fleet price	Weighted rebuild
9 ECM Program	(1)	(1)	(1)	(1)
Totals	7,343			6,067

1 Not required.

The non-OE cylinder kit cost is based on an Engelhard comment dated July 19, 1995, that the aftermarket cylinder kit costs 1,139.94, corrected to 1992 dollars (the CPI for June 1995 is 152.5). The prices of non-OE gasket kit and camshafts are 75% of the 1992 corrected OE prices, based on 25 percent discount from OE list prices, as discussed in the March 14, 1997 **Federal Register** notice (62 FR 12177). The OE Fleet Prices are estimated by EPA, as the same fractions (of OE suggested prices) as the values EPA used in the analysis of the Engelhard 0.10 MUI kit.

As was done in the analyses of a MUI weighted rebuild, EPA makes two adjustments to its analysis of the cost of a weighted rebuild. First, all costs are corrected to 1992 dollars. Second, the weighted rebuild is modified to reflect non-OE parts costs that are 25 percent less than OE cost.

For the cylinder kits, gasket kit, and both camshafts, a weighted cost is determined as the sum of the non-OE cost, weighted 32.6 percent, plus the DDC suggested cost of parts, weighted 67.4 percent. This weighting is based on the APTA survey showing the relative split in operators' parts business between OE and non-OE parts suppliers. The APTA survey (American Public Transit Association Transit Bus Diesel Engine Rebuilding Survey by Michael J. Meloche, January 1991) indicates that 67.4% of operators parts business is with OE parts suppliers, and 32.6% is with non-OE suppliers. The APTA survey can be found in the public docket at the above address. The cost of the fuel injectors are determined above in Table 5. Based on the APTA survey, 95.5 % of the blower, turbochargers, and heads are assumed to be re-manufactured in-house at the Non-OE Costs, and the balance purchased at OE fleet prices. The ECM is not reprogrammed during a standard rebuild.

EPA recognizes that there are a number of uncertainties and assumptions involved with this ''weighted'' approach, but believes, based on the available information, that the cost of a standard rebuild of a DDC 6V92TA DDEC engine is best approximated by the weighted rebuild costs shown above in Table 6, for the purposes of determining the maximum allowable purchase price for the Engelhard ETX kit.

ii. Incremental fuel cost. The percentage fuel consumption impacts, as discussed in above Section 3, are shown below in Table 7 along with the impact due to increased life-time fuel costs pursuant to the calculations of 40 CFR 85.1403(b)(1).

TABLE 7.—FUEL CONSUMPTION IMPACT OF ETX KIT

[1992 dollars]

Applicable engine	Percent BSFC impact	Fuel penalty per 40 CFR 85.1403(b)(1)
1988–1990 49-s	−5.2	($1,473)
1991–1993 49-s	0.2	0
1988–1990 50-s	−5.6	(1,581)

iii. Installation costs. As defined in 40 CFR 85.1403 (b)(1)(ii)(B), the installation cost of certified equipment is ''the labor cost of installing the equipment on an urban bus engine, incremental to a standard rebuild, based on a labor rate of $35 per hour'' (in 1992 dollars). Engelhard states that the labor required to rebuild an engine will be the same for a standard rebuild and the ETX kit, with the exception of the additional labor required for installation of the CMX catalytic muffler. The urban bus engines for which this equipment is intended were not originally equipped with catalytic convertors. Therefore, the muffler unit must be removed from the engine, and the CMX–5 unit installed in its place. Engelhard states that installation of the CMX–5 catalyst unit requires a maximum time of six hours to install on an urban bus engine. Using the labor rate of $35.00 per hour, as specified in the regulation (40 CFR 85.1403), the six hours is valued at $210 (in 1992 dollars). The $210 is incremental to the cost of a standard rebuild.

iv. Maintenance costs. Engelhard states that after installation of the ETX kit, an engine will require no maintenance above the standard rebuild. EPA has no information to conclude that any additional maintenance is necessary for the CMX–5 catalyst muffler, or would increase life cycle costs. Therefore, no additional maintenance costs are listed for the ETX kit.

v. Costs of fuel additives. No fuel additives are required for the ETX kit.

vi. Total life cycle cost calculation. The regulation at 40 CFR 85.1403 requires that the life cycle cost, for equipment that triggers the 0.10 g/bhp-hr standard, be no more than $7,940 (in 1992 dollars) incremental to the cost of a standard rebuild. Table 8 below summarizes the life cycle costs for the ETX kit for each of the three groups of applicable engines: 1988 to 1990 model year 49-state engines, 1988 through 1990 model year 50-state engines, and 1991 through 1993 model year 50-state engines. Separate summaries are presented because of the differing kits, and the different fuel penalty determined for each group.

TABLE 8.—LIFE CYCLE COSTS

[1992 dollars]

	Applicable engines		
	1988–1990 49-State	1991–1993 49-State	1988–1990 50-State
Maximum Allowable Purchase Price	$11,876	$10,774	$11,768
Offset for kit parts normally replaced during a standard rebuild	(5,619)	(3,044)	(5,619)
Installation Cost	210	210	210
Fuel Penalty	1,473	0	1,581
Total Incremental Life Cycle Cost	7,940	7,940	7,940

The table displays the maximum allowable purchase prices for the ETX kits, in 1992 dollars. The total incremental life cycle cost is the sum of the listed items. An ''offset'' is provided to the life cycle cost because certain components provided in the ETX kits offset costs for parts which otherwise are replaced during a standard engine rebuild. The values, for the individual rebuild parts that are offset by the kit parts, are discussed above in conjunction with the determination of a weighted rebuild and itemized in Table 6. To determine the incremental life cycle cost, these ''offset'' costs are subtracted, as shown in Table 8. As shown in the table, the total incremental life cycle cost is no more than the ceiling specified in the program regulations, $7,940 in 1992 dollars. Engelhard, in its letter to EPA dated July 1, 1998, guarantees to make ETX kits available to all affected urban bus operators for no more than the maximum allowable purchase price. Current values of the maximum purchase prices are discussed below.

vii. Current Maximum Allowable ETX Purchase Price. Table 9 below shows the maximum allowable purchase price (in 1992 dollars) as determined above. The current (April 1998) maximum allowable purchase prices, calculated using a multiplicative ratio of CPI's, are also shown in the table. The average CPI for 1992 is 140.3, as specified by the program regulation. The April 1998 CPI, for all items and all urban consumers, is 162.5. These CPI values are provided by the U.S. Department of Labor, Bureau of Labor Statistics.

TABLE 9.—CURRENT MAXIMUM ETX KIT PURCHASE PRICE

Applicable model year	1992 maximum purchase price	April 1998 maximum purchase price
1988–1990 49-State	$11,876	$13,755
1991–1993 50-State	10,774	12,479
1988–1990 50-State (California)	11,768	13,630

III. California Engines

The NO_x emission standard for new engine certification applicable to 1988 through 1990 model year engines sold in the State of California is 6.0 g/bhp-hr. For 1991 through 1993, the standard is 5.0 g/bhp-hr. The emissions testing presented by Engelhard demonstrate a NO_x emissions level that complies with the 5.0 g/bhp-hr standard. Therefore, today's certification of the ETX kit for DDEC II engines applies to DDEC II engines certified to meet California emissions standards, subject to the conditions discussed below.

The equipment certified today may require additional review by the California Air Resources Board (CARB) before use in the State of California. EPA recognizes that special situations may exist in California that are reflected in the unique emissions standards, engine calibrations, and fuel specifications of the State. While requirements of the federal urban bus program apply to several metropolitan areas in California, EPA understands the view of CARB that equipment certified under the urban bus program, to be used in California, must be provided with an executive order exempting it from the anti-tampering prohibitions of that State. Parties interested in additional information should contact the Aftermarket Part Section of CARB, at (818) 575–6848.

IV. Certification and Conditional Certification

EPA has reviewed this notification, along with comments received from interested parties, and finds the equipment described in this notification of intent to certify:

(1) Complies with a particulate matter emissions standard of 0.10 g/bhp-hr, without causing the applicable engine families to exceed other applicable emission requirements, subject to the conditions discussed below;

(2) Will not cause an unreasonable risk to the public health, welfare or safety;

(3) Will not result in any additional range of parameter adjustability; and

(4) Meets other requirements necessary for certification under the Urban Bus Rebuild Requirements (40 CFR Sections 85.1401 through 85.1415).

With the following conditions, EPA hereby certifies this equipment for use in the Urban Bus Retrofit/Rebuild Program. As noted above, the equipment being certified today includes, for 1988–1990 model year engines, an upgraded control program for the electronic control module. EPA has recently become concerned that many electronically controlled engines may have been equipped by the original manufacturers with strategies designed to decrease fuel consumption during certain driving modes not substantially included in the federal test procedure, with the effect of substantially increasing NO_x during these modes. Such electronic control strategies have the potential to be ''defeat devices'' as defined at 40 CFR 86.094–22, and thus may violate 40 CFR 85.1406 and 85.1408 if included in an urban bus retrofit application. The upgraded control program used for the 1988–1990 model year upgrade must therefore be reviewed for such violations.

As a result, certification of the ETX kit, as it applies to 1988 through 1990 model year engines, is conditioned upon Engelhard demonstrating by January 1, 1999 that any replacement engine control module (ECM) or ECM program used in conjunction with the certified kit will not adversely impact the emissions of NO_X in comparison to the ECM or ECM program that is being replaced under conditions which may reasonably be expected to be encountered in normal vehicle operation and use unless such conditions are substantially included in the Federal emission test procedure. The equipment, the ETX–2002™ Emissions Rebuild Kit, may be used immediately by transit operators in compliance with requirements of this program, subject to the above condition.

V. Transit Operator Responsibilities

Today's **Federal Register** notice announces certification of the above-described Engelhard equipment, when properly applied, as meeting the 0.10 g/bhp-hr particulate matter standard of the Urban Bus Rebuild Program for urban bus engines certified as meeting both federal and California emissions standards. Affected urban bus operators who choose to comply with compliance program 1 are required to use this, or other equipment that is certified to meet the 0.10 g/bhp-hr particulate matter standard, for any engines listed in Table 2 which are rebuilt or replaced on or after March 22, 1999, subject to the condition of Section IV.

Urban bus operators who choose to comply with compliance program 2 may use the certified Engelhard equipment, and those who use this equipment may claim the respective particulate matter certification level from Table 2 when calculating their Fleet Level Attained (FLA), subject to the condition of Section IV.

Urban bus operators must be aware of their responsibility for maintenance of records pursuant to 40 CFR 85.1403 through 85.1404. The ETX kit may not include, depending upon model year of the applicable engine, fuel injectors, engine camshafts, and blower assembly. As stated in the program regulations (40 CFR 85.1401 through 85.1415), operators should maintain records for each engine in their fleet to demonstrate that they are in compliance with the Urban Bus Rebuild Requirements beginning on January 1, 1995. These records include purchase records, receipts, and part numbers for the parts and components used in the rebuilding of urban bus engines. Urban bus operators must be able to demonstrate that all parts used in the rebuilding of engines are in compliance with program requirements. In other words, urban bus operators must be able to demonstrate that all required components of the kit certified in today's **Federal Register** notice are installed on applicable engines.

Dated: September 11, 1998.

Robert Perciasepe,

Assistant Administrator for Air and Radiation.

[FR Doc. 98–25198 Filed 9–18–98; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[FRL–6164–3]

Clean Air Act Advisory Committee: Accident Prevention Subcommittee's RMP Implementation Workgroup; Series of Conference Call Meetings September–December, 1998

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of meeting.

SUMMARY: Section 112(r) of the Clean Air Act (CAA) requires covered facilities to develop risk management programs to prevent accidental releases of dangerous chemicals. Facilities are to submit risk management plans (RMPs) to a central location by June 1999. The RMPs will be electronically available to State and local governments and citizens to help them understand local chemical hazards and take steps to prevent accidents.

The Accident Prevention Subcommittee of the CAA Advisory Committee was established in September 1996 to provide EPA with advice and counsel on scientific and technical aspects of CAA section 112(r). In October 1996, the Accident Prevention Subcommittee established the Electronic Submission Workgroup which submitted its final recommendations report on June 18, 1997. At its May 9th meeting, the Accident Prevention Subcommittee established a second workgroup, the RMP Implementation Workgroup, to ensure that all stakeholders have the tools they need to implement a risk management program under CAA § 112(r).

The RMP Implementation Workgroup identifies activities that must be undertaken and products that must be developed. Additionally, the Workgroup makes recommendations to EPA and the Accident Prevention Subcommittee about the best methods for carrying out these activities. The Workgroup works with EPA to ensure that products are developed and issues are addressed within appropriate time frames.

The Workgroup addresses the following:

1. Risk Communication
2. Guidance for Implementing Agencies
3. Guidance for Industry
4. Audit protocol and guidance
5. RMP*Info, RMP*Submit
6. Outreach, Training, and Program Evaluation
7. Guidance for LEPCs

The Workgroup includes 30–35 members, with balanced membership from the following organizations: States, local government and LEPCs, industry, environmentalists, non-profits, EPA CEPPO (HQ and Regions), other EPA offices, and other groups.

DATES: Pursuant to the Federal Advisory Committee Act, 5 U.S.C. App. 2, notice is hereby given that the next four meetings of the RMP Implementation Workgroup will be held at the following times (all Eastern time).

(1) September 16, 1998—2:00 p.m. to 4:00 p.m.

(2) October 21, 1998—2:00 p.m. to 4:00 p.m.

(3) November 18, 1998—2:00 p.m. to 4:00 p.m.

(4) December 16, 1998—2:00 p.m. to 4:00 p.m.

On September 9, 1998, the Accident Prevention Subcommittee voted for continuation of the RMP Implementation Workgroup through calendar year 1999. Meetings after December of this year will be scheduled and announced at least four weeks in advance. All meetings are open to the public.

ADDRESSES: The Workgroup meetings held in September, October and November will be located at EPA Headquarters in Washington, D.C., in Washington Information Center (WIC) conference room #13 North. The address is 401 M St., SW, Washington, D.C. 20460. The location of the final meeting in December will be announced at least two weeks prior to the meeting date. Members of the public are welcome to attend in person.

FOR FURTHER INFORMATION: Members of the public desiring additional information about these meetings should contact Kate Narburgh, US EPA (5104), 401 M. St., SW, Washington, DC 20460, via the Internet at: *narburgh.kate@epamail.epa.gov*, by telephone at (202) 260–8247 or FAX at (202) 401–3448.

Additional information on the RMP Implementation Workgroup is available on the Internet at: *http://www.epa.gov/swercepp/rmp-imp.html.* Information on