DDC presents exhaust emissions data from testing a Detroit Diesel Corporation (DDC) engine in accordance with procedures set forth at 40 CFR Part 86, Subparts N and I. A 1984 model year DDC 6V92TA MUI model engine (277 HP) was rebuilt to the 1989 urban bus configuration as per the previously certified DDC kit and was retrofit with the specified components of the 0.1 g/bhp-hr kit prior to testing. In the rebuild process, all parts not included in the rebuild kit were inspected. Prior to testing the engine was tuned with the injector timing set at 1.460 in. The throttle delay was set for optimum vehicle driveability according to DDC. The data is summarized in Table A below.

TABLE A.—EXHAUST EMISSIONS SUMMARY

	g/bhp-hr	
	1989 HDDE standards	6V92TA MUI with kit
Gaseous and particulate test:		
HC	1.3	0.1
CO	15.5	0.4
NO_X	10.7	9.8
PM	0.60	0.091
BSFC[1]	—	0.464
	Standards	
Smoke test:		
ACCEL	20%	3.3%
LUG	15%	2.5%
PEAK	50%	4.2%

[1] Brake Specific Fuel Consumption (BSFC) is measured in units of lb/bhp-hr.

The data of Table A indicate that, when rebuilt with the kit, PM emissions of the test engine are less than 0.10 g/bhp-hr, and emissions of hydrocarbon (HC), carbon monoxide (CO), and smoke opacity are within applicable Federal standards. The Agency requests comments on whether the emissions test data presented by DDC demonstrate that all engines for which certification is requested will meet applicable Federal standards with the candidate kit installed.

Applicability of the candidate is restricted to 6V92TA, urban bus engine models made by Detroit Diesel Corporation (DDC) from model years 1979 to 1989 and equipped with mechanical unit injectors (MUI). The Agency requests comments on whether the emissions data presented by DDC demonstrate that all engines for which certification is intended will meet the 0.10 g/bhp-hr PM standard. The part numbers of the specified rebuild components are provided in DDC's notification.

DDC's notification does not provide life cycle cost information for the candidate kit. Therefore, this kit will not be certified to comply with the life-cycle cost requirements of the program. The 0.10 g/bhp-hr PM level has already been triggered for all the engines covered by this notification. If certified as proposed in the notification, this equipment may be used by operators who are required to use equipment that meets the 0.10 g/bhp-hr PM level based on earlier trigger certification.

DDC indicates that the engine is to be rebuilt according to the engine manufacturer's standard written rebuild procedures and specifications except where amended by DDC written instructions. The incremental maintenance cost and fuel economy impact are not provided in DDC's notification and are not necessary for certification as the cost limitation is not being certified to by DDC.

The DDC notification provides a product warranty that references the emissions performance and emissions defect warranties required in accordance with section 85.1409 of the program regulations.

Even if ultimately certified by the Agency, the equipment described in DDC's notification may require additional review by the California Air Resources Board (CARB) before use in California. The Agency 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, the Agency 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. Those interested in additional information should contact the Aftermarket Part Section of CARB, at (818) 575–6848.

If the Agency certifies the candidate equipment, then urban bus operators who choose to comply with compliance Option 1 of this regulation will have the option to use this equipment or other equipment which has previously been certified to the 0.10 g/bhp-hr standard when applicable engines are rebuilt or replaced. If certified, then operators using Option 2 will use the 0.10 g/bhp-hr certification level in calculations for fleet level attained (FLA).

The date of this notice initiates a 45-day period during which the Agency will accept written comments relevant to whether the equipment described in the DDC notification of intent to certify should be certified pursuant to the urban bus retrofit/rebuild regulations. Interested parties are encouraged to review this notification, and provide written comments during the 45-day review period. Separate comments should be provided in writing to each of the addresses listed under the **ADDRESSES** section of this notice.

At a minimum, the Agency expects to evaluate this notification of intent to certify, and other materials submitted as applicable, to determine whether there is adequate demonstration of compliance with: (1) the certification requirements of § 85.1406, including whether the testing accurately substantiates the claimed emission reduction or emission levels; and, (2) the requirements of § 85.1407 for a notification of intent to certify.

The Agency requests that those commenting also consider these regulatory requirements, plus provide comments on any experience or knowledge concerning: (a) problems with installing, maintaining, and/or using the equipment on applicable engines; and, (b) whether the equipment is compatible with affected vehicles.

The Agency will review this notification of intent to certify, along with comments received from the interested parties, and attempt to resolve or clarify issues as necessary. During the review process, the Agency may add additional documents to the docket as a result of the review process. These documents will also be available for public review and comment within the 45-day period.

Dated: October 29, 1997.

Richard D. Wilson,

Acting Assistant Administrator for Air and Radiation.

[FR Doc. 97–29394 Filed 11–5–97; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[FRL–5918–5]

Retrofit/Rebuild Requirements for 1993 and Earlier Model Year Urban Buses; Certification of Equipment

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of EPA certification of equipment provided by Johnson Matthey Incorporated.

SUMMARY: Today's **Federal Register** notice announces EPA's decision to

certify equipment to the 0.10 g/bhp-hr standard for the Urban Bus Retrofit/Rebuild Program. The equipment is provided by Johnson Matthey Incorporated (JMI).

JMI submitted to EPA a notification of intent to certify equipment, in materials signed December 9, 1996, pursuant to the program regulations at 40 CFR part 85, subpart O. On January 30, 1997, EPA published a notice in the **Federal Register** that the JMI notification had been received and made the notification available for public review and comment for a period of 45 days (62 FR 4528). EPA has completed its review and the Director of the Engine Programs and Compliance Division has determined that it meets all requirements for certification. Therefore, EPA certified this equipment in a letter to JMI dated September 8, 1997.

The certified equipment, initially referred to by JMI as the Catalytic Reduction Technology-Cam kit, is a kit consisting of proprietary camshafts, CEM II catalytic exhaust muffler, and specific engine rebuild parts and certain engine settings. The nomenclature of the kit, Catalytic Reduction Technology-Cam, has been discontinued by JMI. The kit will be marketed by JMI under the name, Cam Converter Technology (CCT™) upgrade kit. Therefore, today's notice will refer to the equipment as the CCT™ kit.

The kit is applicable to 6V92TA urban bus engine models made by Detroit Diesel Corporation (DDC) from model years 1979 to 1989 and equipped with mechanical unit injectors (MUI), and may be used immediately by transit operators in compliance with program requirements. The kit is available in four horsepower ratings (253, 277, 294, and 325 horsepower).

EPA has determined that the CCT™ kit complies with the 0.10 gram per brake horsepower-hour (g/bhp-hr) particulate matter (PM) standard for the applicable engines. In addition, because JMI will offer the kit to all parties for $7,940 (in 1992 dollars) or less, incremental to the cost of a standard rebuild, EPA has determined that JMI's notification complies with the life cycle cost requirements of the program regulations. JMI may make an alternative supply option available to purchasers.

Today's **Federal Register** notice triggers requirements for transit operators utilizing compliance Program 1 that have engines rated above 294 horsepower in their fleet covered by this certification (excluding engines certified to meet California emissions standards).

The notification of intent to certify, as well as other materials specifically relevant to it, are contained in Category XV–A of Public Docket A–93–42, entitled ''Certification of Urban Bus Retrofit/Rebuild Equipment''. This docket is located at the address listed below.

Additional details concerning this certification, the JMI CCT™ kit, and responsibilities of transit operators, are provided below.

DATES: EPA certified this equipment in a letter to JMI dated September 8, 1997. Today's **Federal Register** notice announces this certification, and triggers the 0.10 g/bhp-hr standard for applicable engines above 294 hp. The 0.10 g/bhp-hr standard was triggered on March 14, 1997 (62 FR 12166) for applicable engines rated at 294 hp and below.

ADDRESSES: The JMI notification, as well as other material specifically relevant to it, are contained at the U.S. Environmental Protection Agency's Public Air Docket A–93–42 (Category XV–A), Room M–1500, 401 ''M'' Street SW, Washington, DC 20460.

The JMI notification of intent to certify, as well as other materials specifically relevant to it, are contained in the public docket indicated above. Docket items may be inspected from 8:00 a.m. until 5:30 p.m., Monday through Friday. As provided in 40 CFR part 2, a reasonable fee may be charged by EPA for copying docket materials.

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) 233–9297.

SUPPLEMENTARY INFORMATION:

I. Description of the Certified CCT™ Kit

The certified CCT™ kit described in today's **Federal Register** notice, the Cam Converter Technology (CCT™) upgrade kit, is provided by Johnson Matthey Incorporated (JMI). It is certified to the 0.10 g/bhp-hr standard, and complies with the applicable life cycle cost requirements.

The certification described in today's notice applies to 1979 though 1989 model year DDC 6V92TA engines that are equipped with mechanical unit injectors (MUI) and certified to federal emissions standards. It does not apply to engines certified to California emissions standards. The impact of this decision on transit operators is discussed in more detail in the ''Transit Operator Requirements'' section below.

The CCT™ kit, described further below, consists of a CEM II catalytic exhaust muffler, proprietary cam shafts, specified emissions-related engine rebuild parts, and specified engine settings. The kit is available in four horsepower (hp) ratings (253, 277, 294 and 325 horsepower).

The CEM II is the same size and shape as the CEM catalytic exhaust muffler (certified for the Urban Bus Program as described in the **Federal Register** on April 17, 1996, at 61 FR 16773), is a direct, bolt-on replacement for the original equipment muffler, and is designed to fit the specific bus/engine combination.

The camshafts, a proprietary JMI design, change exhaust valve lift and duration. The CCT™ kit includes a timing height gauge for the unique timing height of the fuel injectors. The procedure and specifications for setting the exhaust valve clearance is unchanged from the DDC recommended procedure.

For retrofit with the CCT™ kit, an engine is rebuilt in accordance with standard DDC rebuild procedures, using specified engine parts that produce unique engine configurations. The specified emissions-related engine parts consist of the following DDC components: turbocharger, fuel modulator, piston dome kit, piston skirt, piston ring set, cylinder liner, blower drive gear, blower assembly, fuel injectors, blower by-pass valve, and governor assembly. The specified engine settings apply to the fuel injector height and fuel modulator setting. The specified settings and part numbers for the emissions related DDC parts are provided in letters from JMI dated July 18, 1997 and August 21, 1997.

For service of a CCT™-equipped engine, the DDC compression check procedure remains applicable and JMI will provide compression specifications with the kit instructions. Other DDC service procedures remain applicable.

All configurations of the CCT™ include a fuel modulator to limit throttle advance during acceleration, as replacement of the standard throttle delay of the original coach engine configuration. The CCT™ kit includes instructions for installation of the fuel modulator, and adjustment settings for the fuel modulator.

All affected transit operators may purchase the specified emissions-related parts from JMI as part of a CCT™ kit. Additionally, JMI may make available a second supply option whereby the kit consists of the CEM II, proprietary camshafts, and a list of the specified emissions-related parts and engine settings. With the second supply option, an operator is responsible for acquiring the specified parts from sources of its own choosing, as discussed further below. Neither option includes parts that are rebuilt by transit operators.

All of the testing presented by JMI for this certification was conducted using OE parts, except for the CEM II and camshafts. As a result, EPA has no assurance that engines rebuilt using parts that are not original equipment (OE) would comply with the 0.10 g/bhp-hr standard. Therefore, use of engine parts that are not the specified OE parts, or engine parts rebuilt in-house, are not covered by the certification described in today's **Federal Register** notice.

Pursuant to 40 CFR 85.1409, JMI will provide a 100,000-mile defect warranty and a 150,000-mile emissions performance warranty for the CCT™ kit, and all of its components regardless of which of the two supply options is used by a transit operator.

JMI states that the maximum cost of the CCT™ kit for 6V92TA MUI engines is $11,495.00 (in 1997 dollars), which includes the CEM II, proprietary camshafts, specified emissions-related parts, and specified engine settings. JMI indicates that installation of the whole CCT™ kit requires an additional two hours (for installation of the CEM II) beyond the labor associated with a standard rebuild.

EPA's certification of the Engelhard Corporation's ETX™ kit (62 FR 12166; March 14, 1997) triggered the 0.10 g/bhp-hr standard for 1979—1989 6V92TA MUI engines. That kit provided three power ratings: 253, 277, and 294 horsepower (hp). JMI will offer the CCT™ kit in four power ratings: 253, 277, 294, and 325 hp. Certification of the CCT™ kit described in today's **Federal Register** notice, which includes compliance with life cycle cost requirements, triggers the 0.10 g/bhp-hr standard for engines rated above 294 hp. This topic is discussed further below.

II. Background and Bases for Certification

In a notification of intent to certify equipment, composed of an initial document signed December 9, 1996 and subsequent documents, Johnson Matthey (JMI) applied for certification of the CCT™ kit under the Environmental Protection Agency's (EPA) Urban Bus Retrofit/Rebuild Program. Engines applicable to the certified kit are 6V92TA urban bus engine models made by Detroit Diesel Corporation (DDC) from model years 1979 to 1989 that are equipped with mechanical unit injectors (MUI) and certified to comply with federal emissions standards.

The equipment, referred to in initial documents as the Catalytic Reduction Technology—Cam kit, was renamed by JMI to the Cam Converter Technology (CCT™) upgrade kit. The certifier's principal place of business is: Johnson Matthey Incorporated, Environmental Products, Catalytic Systems Division, 460 East Swedesford Road, Wayne, Pennsylvania 19087–1880.

Using engine dynamometer (transient) testing in accordance with the Federal Test Procedure for heavy-duty diesel engines, JMI demonstrated compliance with the 0.10 g/bhp-hr particulate matter (PM) emissions standard. Engine dynamometer data, shown below in Table 1, are the bases for the certification approval of the CCT™ kit when used on applicable engines. The emissions test data are part of JMI's notification of intent to certify, which is available in the public docket located at the above-mentioned address. All testing was conducted using #2 low-sulfur diesel fuel.

TABLE 1.—SUMMARY OF JMI TESTING

Gaseous and particulate test	g/bhp–hr	1988 HDDE standards				
		1984 6V92TA MUI baseline[1]	1984 6V92TA MUI baseline[1]	6V92TA MUI with CCT™ [1]	1983 6V71TA MUI baseline	6V71TA MUI with CCT™
HC	1.3	0.7	0.5	0.3	0.6	0.2
CO	15.5	1.1	0.9	0.5	1.7	0.8
NO_X	10.7	9.5	13.0	10.2	10.4	10.2
PM	0.6	0.56	0.251	0.08	0.329	0.096
BSFC[2]		0.475	0.456	0.470	0.468	0.464
Hp (R/O)[3]		253/249	277/269	277/274	225/211	265/254
Smoke Test	**Standards (%)**	**Percent Opacity**				
ACCEL	20	3.1	1.3	2.9	2.0	2.3
LUG	15	2.0	0.5	2.0	2.6	1.3
PEAK	50	4.8	3.3	3.6	3.0	2.9

[1] All 6V92TA testing was performed on engine identification number 6VF–118287.
[2] Brake Specific Fuel Consumption (BSFC) is measured in units of lb/bhp–hr.
[3] Horsepower (Rated/Observed during testing).

The exhaust emissions data presented by JMI are from testing Detroit Diesel Corporation (DDC) engine models 6V71TA and 6V92TA, in accordance with procedures set forth at 40 CFR part 86, Subparts N and I. The two engine models were tested in baseline configurations and equipped with the CCT™ kit. The baseline 6V92 engine was tested in two horsepower ratings: 253 and 277.

The data of Table 1 demonstrate that for both test engines, when rebuilt with the CCT™ kit, PM emissions are less than 0.10 g/bhp–hr and, emissions of hydrocarbon (HC), carbon monoxide (CO), and smoke opacity are within applicable federal standards. The data for the 6V92TA engine indicate that the kit increases NO_X emissions roughly seven (7) percent above the level of the baseline 6V92TA rated at 253 hp. The data for the 6V71TA engine indicate that the CCT™ kit does not increase NOx emissions. With CCT_X kits installed, the NO_X levels for both the 6V92 and 6V71 certification engines are less than the federal standard for model years 1985—1989 (10.7 g/bhp–hr).

To facilitate the review process, JMI requested in a letter dated August 6, 1997, that EPA temporarily restrict its review to 6V92TA engine models. Therefore, today's **Federal Register** notice describes certification of equipment only for 6V92TA MUI engine models. The emissions data for the 6V71TA engine is included in today's notice to support the demonstration of compliance of the CCT™ kit with the 0.10 g/bhp–hr standard. Further action taken with regard to 6V71 engines would be done by subsequent **Federal Register** notice.

This action applies a PM emissions level of 0.10 g/bhp–hr to all 1979 through 1989 DDC 6V92TA MUI urban bus engines, when properly equipped with the CCT™ kit and when using either diesel fuel #1 or #2. Table 2 lists the applicable engine models and certification levels associated with the certification announced in today's **Federal Register**.

TABLE 2.—CERTIFICATION LEVEL OF CCT™ KIT

Engine models	Engine codes	Certification PM level
1979–1989 DDC 6V92TA MUI	All certified to meet federal emissions standards	0.10 g/bhp–hr.

All engines for which the CCT™ kit is intended to apply are expected to meet the 0.10 g/bhp–hr PM standard because the kit instructs the rebuilder to replace all emissions-related parts during the rebuild with JMI-specified parts, and install a CEM II. The engine-out emissions level (upstream of the CEM–II catalyst) is expected to be predictable because all emission-related parts are replaced using the JMI specified emissions-related parts and settings of the kit. As demonstrated by the two test engines, the combination of the specified parts, proprietary camshafts, specified settings of the kit, and CEM–II, results in a PM level less than 0.10 g/bhp–hr.

Summarized below in Table 3 is a life cycle cost analysis presented by JMI for the CCT™ kit. A cost analysis is necessary only for certification of equipment that is meant to trigger a program emissions standard. Certification of Engelhard Corporation's ETX™ kit triggered the 0.10 g/bhp–hr standard for 6V92TA MUI engines, and made available kits rated at 253, 277, and 294 hp. The Engelhard certification does not provide a kit rated above 294 horsepower. JMI's emissions demonstration and cost analysis applies to engines rated at 253, 277, 294, and 325 hp. Therefore, the certification described in today's notice triggers the 0.10 g/bhp–hr standard for engines rated above 294 horsepower.

JMI's initial notification presented a life cycle cost analysis based on the CCT™ kit containing the CEM II, the proprietary cam shafts, and a list of specified emissions related parts and settings. In a letter dated June 2, 1997, JMI stated its intent to market the CCT™ kit to include all emissions related parts. In a letter dated July 3, 1997, JMI presented a cost analysis in accordance with section 85.1403, for the supply option where JMI provides all components of the CCT™ kit, including the specified engine parts. EPA determines that, based on this information, the notification meets life cycle cost requirements. The analysis is discussed below.

As shown in the summary of Table 3, total life cycle costs are less than the life cycle cost ceiling specified in the program regulations ($7,940 in 1992 dollars). The life cycle cost ceiling, updated to May 1997, is to $9,060.54.

TABLE 3.—LIFE CYCLE COST ANALYSIS OF CCT™ Kit for 6V92TA ENGINES

	1997 dollars
CCT™ Upgrade Kit Maximum Cost	$11,495.00
Cost Offset (for Kit parts normally replaced during standard rebuild)	[1] (3,978.58)
Installation Labor for CEM II (2 hours)	79.88
3% Fuel penalty	964.30
Total Life Cycle Costs	8,560.60
LCC Ceiling [2] ($7,940 x 160.1÷ 140.3)	9,060.54

[1] Weighted Rebuild Costs for parts, normally replaced during a standard rebuild, are from 62 FR 12166, March 14, 1997, and adjusted to 1997 dollars using a base CPI of 158.3 for October 1996, and the CPI of 160.1 for May 1997.
[2] CPI for 1992=140.3. CPI for May 1997=160.1.

As shown above in Table 3, JMI states that the maximum cost of the CCT™ kit, including all specified engine parts, is $11,495.

The proprietary camshafts and other specified engine components provided with the CCT™ kit result in an ''offset'' for parts which otherwise are replaced during a standard engine rebuild. The costs for the individual rebuild parts that are offset by the kit parts, as shown in Table 4 below, were determined by EPA in (1996 dollars) for certification of Engelhard Corporation's ETX™ kit (see 62 FR 12166; March 14, 1997). JMI updates the costs to May 1997 based on a ratio of the Consumer Price Indexes (CPI) noted in Table 4. These ''offset'' costs are subtracted from the maximum purchase cost of the CCT™ kit, as shown above in the summary of Table 3.

TABLE 4.—CCT™ UPGRADE KIT PARTS LIST FOR 6V92TA MUI ENGINES

	No. Part	Part of standard rebuild?	October 1996 cost (CPI=158.3)	May 1997 cost (CPI=160.1)
1	CEM II	No		
2	Cam RB	Yes	$607.45	$614.363
3	Cam LB	Yes	607.45	614.364
4	Modulator	No		

TABLE 4.—CCT™ UPGRADE KIT PARTS LIST FOR 6V92TA MUI ENGINES—Continued

	No. Part	Part of standard rebuild?	October 1996 cost (CPI=158.3)	May 1997 cost (CPI=160.1)
5	Blower drive gear 40T.	No		
6	Blower bypass valve.	No		
7	Governor Ass'y	No		
8	Governor cover ass'y.	No		
9	Turbocharger	Yes	464.43	469.71
10	Fuel Injectors	Yes	420.50	425.28
11	Dome kit or crown.	Yes	1,522.74	1,540.05
12	Piston Skirt	Yes	With #11	With #11
13	Ring Set	Yes	With #11	With #11
14	Cylinder Liner	Yes	With #11	With #11
15	Blower Ass'y	Yes	311.28	314.82
Offset Total				3,978.58

Except where amended by JMI written instructions, an engine is to be rebuilt according to the engine manufacturer's standard written rebuild procedures and specifications. Therefore, installation of the CCT™ kit is essentially identical to a standard engine rebuild plus the installation of the CEM II catalyst exhaust muffler. Therefore, the labor cost for installation of the kit, incremental to a standard rebuild, is based on an additional two hours for installation of the CEM II. The two hours additional installation time is added to the life cycle costs of the kit, as shown above in Table 3. In accordance with section 85.1403, the labor rate specified in the regulation, $35/hour (in 1992 dollars), when updated to May 1997, is $39.94/hour.

JMI states that engines equipped with the CCT™ kit will have no additional maintenance or service requirements. Therefore, incremental maintenance costs for engines equipped with the CCT™ kit is zero.

JMI presents baseline data from testing two standard 1984 model year configurations rated at 253 and 277 horsepower. Based on comparison with the testing of the baseline 277 hp engine, fuel consumption when the CCT™ kit is installed is determined to be three (3) percent higher. Based on this 3 percent penalty, the incremental fuel cost for the kit is calculated in accordance with section 85.1403(b)(1)(ii)(c)(1), and added to the life cycle costs as shown above in Table 3.

The total life cycle costs for the CCT™ kit, as shown above in Table 3, is determined to be $8,560.60. The life cycle cost ceiling ($7,940 in 1992 dollars), when updated to May 1997 using a ratio of the CPIs noted in Table 3, is $9,060.54. In conclusion, based on the above analysis, EPA determines that the CCT™ kit for 6V92TA MUI engines complies with the life cycle cost requirements of the urban bus program.

In a letter dated August 6, 1997, JMI requested the ability to supply transits under two supply option scenarios. Under supply option 1, JMI would supply the CCT™ kit including the CEM II, the proprietary camshafts, and all of the specified emissions related engine parts. Under supply option 2, the CCT™ kit would include the CEM II, the proprietary camshafts, and a list of specified parts with certain fuel injector and fuel modulator settings. JMI indicated that supply option 2 might include specific parts that could be rebuilt by transits to JMI specifications and subject to strict controls by JMI.

EPA approves supply option 1 and part of supply option 2. For supply option 1, transit operators purchase the entire CCT™ kit from JMI or its distributors. This supply option is the option upon which life cycle costs have been determined, and upon which the 0.10 g/bhp-hr standard is triggered for engines having ratings above 294 horsepower. Therefore, the supply option 1 is required to be available to any and all operators. Supply option 2, described below, may be made available at JMI's discretion. Operators that choose the supply option 2, do so voluntarily, and EPA makes no representation concerning the impact of this supply option on life cycle costs. The certification of today's **Federal Register** notice does not include use of parts that are rebuilt by transit operators because EPA lacks assurance that parts rebuilt by transit operators would have the same emissions performance.

For supply option 2, JMI will provide the list of specified DDC emissions-related engine parts and engine settings to transit operators upon purchase of the CEM II and proprietary camshafts. Transit operators will then purchase the specified emissions-related parts (excluding the CEM II and proprietary camshafts, which must be obtained from JMI) through supply channels of the operator's choosing. The certification of today's **Federal Register** notice does not include use of parts that are rebuilt by transit operators.

III. Summary and Analysis of Comments and Concerns

Comments were received from three parties in response to the **Federal Register** notice of January 30, 1997 (62 FR 4528). The commenters are Detroit Diesel Corporation (DDC), Engelhard Corporation, and New York City Transit Authority (NYCTA). DDC and Engelhard, provided extensive comment. DDC is the original manufacturer of the engine models to which the CCT™ kit applies, and has applied for certification of equipment to comply with the 0.10 g/bhp-hr standard. Engelhard is the manufacturer of equipment certified under the urban bus program that triggered the 0.10 g/bhp-hr standard for the 1979–1989 6V92TA MUI engines (see 62 FR 12166; March 14, 1997). NYCTA, as a large transit bus operator in a major metropolitan area, is subject to requirements of the urban bus program.

Comments or issues fell into the following general categories: (A) applicability of the kit; (B) description of the kit; (C) testing demonstration and documentation; (D) life cycle cost analysis; and, (E) warranty. All correspondence, comments, and other documentation are located in the public docket at the address above.

(A) Applicability

In the January 30, 1997, **Federal Register** notice, EPA stated that the information provided in JMI's initial notification did not support certification of engines beyond model year 1989, because the federal new engine standard for NO_X dropped in 1990 to 6.0 g/bhp-hr and in 1991 to 5.0 g/bhp-hr. (The NO_X level of either certification test engine, when rebuilt with the kit, is greater than 10 g/bhp-hr.) Additionally, EPA noted that the JMI notification lacked support for certification of DDC's ''DDEC'' engines, because neither test engine is equipped with electronically-controlled fuel injection.

In comments dated March 14, 1997, DDC stated that the CCT™ kit should not be certified for numerous types of DDC two stroke/cycle engines including all California engine models. In general, DDC indicated that the JMI notification lacked support of testing demonstration and/or documentation, and because the test data showed that the kit exceeds the California NO_X standards. DDC also noted that engines rated at 325 and 340 hp are beyond the range normally used in urban bus applications.

In a letter dated December 17, 1996, JMI restricted its notification to DDC 6V92TA, 6V71T, and 6V71TA MUI engines of model years 1979 through 1989. Furthermore, in a letter dated August 6, 1997, JMI requested that EPA temporarily restrict its review to 6V92TA MUI engines in order to expedited the certification process. Therefore, today's **Federal Register** notice pertains only to EPA's certification of the CCT™ kit as applicable to 6V92TA MUI engine models. EPA also notes that documentation from Dallas Area Rapid Transit indicates that it has buses equipped with 325 hp 6V92TA MUI engines. EPA therefore believes it appropriate to include the 325 hp rating in the certification described in today's notice.

In a letter to JMI dated March 17, 1997, the California Air Resources Board (CARB) indicated that, without further test data showing that California-certified engines are not adversely affected by the CCT™ kit, CARB cannot allow use of the CCT™ kit. 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. Those interested in additional information should contact the Aftermarket Part Section of CARB, at (818) 575–6848.

(B) Description of the CCT™ Kit

Engelhard commented that the CCT™ kit specifies use of a fuel modulator, and notes that it is not standard on 6V92TA coach engines. Standard equipment on such coach engines is a throttle delay. Engelhard claims that the fuel modulator will cause serious bus driveability problems if not properly set and used in combination with the appropriate engine configuration. DDC states that it has no experience with the hardware combinations for which JMI has requested certification. Both DDC and Engelhard indicate that the effect of the CCT™ kit on bus driveability needs to be determined before the kit is certified.

EPA notes that field experience to date, although limited, does not indicate driveability problems. (Field experience is discussed further below.) The basis for Engelhard's claim concerning driveability problems appear to be conjecture based on theory of how an improperly set fuel modulator would function in conjunction with an engine operating on ''low'' boost pressure. Given the field experience presented by JMI, EPA does not believe there is justification for a delay in certification.

DDC questions JMI's original proposal to allow operators to use aftermarket parts equivalent to original equipment, noting that DDC's design and manufacturing specifications and tolerances are proprietary and not available to aftermarket part suppliers. Relatedly, NYCTA questions the use of non-DDC components, and expresses concern regarding the maintenance, durability, emissions levels, and warranty coverage associated with such parts.

In response, JMI modified its notification in a letter dated June 2, 1997, to restrict the specified parts of the CCT™ kit to DDC-supplied original equipment. EPA notes that JMI's 6V92TA certification engines were equipped with DDC components.

DDC questions the applicability of its procedures for checking cylinder compression and camshaft timing, given the unique combination of parts in the CCT™ kit. JMI states that the injector cam maintains a standard profile, and the exhaust valves open less and for a shorter time. JMI states that the DDC service method for checking camshaft timing by measuring cam lift versus crank angle remains applicable. JMI indicates that the procedure for checking cylinder compression remains appropriate, but that the compression specifications are different as a result of the lower compression ratio of the CCT™ engine. JMI will provide cylinder compression specifications with the CCT™ kit.

DDC references section 85.1406(d) of the program regulations, which includes the requirement that ''* * * installation of any certified retrofit/rebuild equipment shall not * * * result in any additional range of parameter adjustability or accessibility to adjustment than that of the vehicle manufacturer's emission related part'', and notes that the JMI injector height setting of 1.420 inches is outside the range of 1.460 to 1.520 inches which DDC allows and supports with gauges for service adjustment.

EPA notes that the purpose of the cited passage of section 85.1406(d) is to prevent retrofit/rebuild equipment from increasing the likelihood or potential for tampering. Although the CCT™ kit requires a unique fuel injector timing height, the kit does not change the inherent ''range of adjustability'' or ''accessibility to adjustment'' of DDC's basic fuel injector system. The height setting of the CCT™ kit is not tampering, indeed it is a requirement of the kit to ensure compliance with emissions levels demonstrated by JMI's testing. JMI will provide a gauge, for setting fuel injector height, with the CCT™ kit.

Both Engelhard and DDC provide numerous comment on the unique components and settings in the CCT™ kit, and are concerned that there is not sufficient field or in-use experience. DDC notes that the JMI fuel injection height specification (1.420 inches) is less than the minimum DDC allows (1.460 inches), and states that a potential unfavorable stack-up of component and adjustment tolerances may cause engine problems due to injector follower bottoming in real-world operating conditions. DDC notes that its minimum timing height specification takes into consideration such unfavorable stack-up plus the potential separation of the injector actuation linkage which can occur under engine overspeed (over-revving) conditions. Engelhard notes that JMI's 277 and 294 hp ratings use the same injector, asks how much power the JMI 325 hp rating actually produces, and asks for explanation of why the CCT™

kit use larger injectors than the corresponding original DDC ratings.

JMI acknowledges that the fuel injector height setting (1.420 inches) of the CCT™ kit is outside DDC's normal range. However, JMI states that testing performed on injectors at Southwest Research Institute and JMI distributors indicate that the injectors bottom-out between 1.380 and 1.390, and that successful operation has been sustained at a setting of 1.400. JMI believes that the specified injector setting will present no risk to the correct operation of the engine. JMI notes that the CCT™ technology, including the 1.420 setting, has been used extensively in other industry applications, as described further below. JMI will provide a gauge for setting injector height with the CCT™ kit.

EPA does not know whether or how prevalent engine over-speed conditions occur in transit operation (for example, whether it may occur during long downhill conditions when a bus might drive its engine to high speeds), or how significant of a problem it presents to the JMI settings for the injectors. Consequently, EPA does not know whether there is an adequate margin of safety in the injector height setting of the CCT™ kit to preclude any engine problems under all potential bus engine operating conditions. JMI, however, has demonstrated engine-dynamometer experience, some in-use transit bus operation (discussed further below), and in-use experience in other industries with no noted problems. Additionally, an emissions defect warranty, pursuant to section 85.1409 of the program regulations, is provided by JMI for all components of the CCT™ kit, which include the fuel injectors and proprietary camshaft. The warranty may leave other parts of the injector actuating mechanism without coverage. However, EPA does not believe such coverage to be necessary at present. EPA may take additional action, if significant in-use problem develop. For example, EPA has authority under section 85.1413 of the program regulations to decertify equipment if, for example, use of certified equipment severely degrades driveability, operation, or function.

EPA does not believe it necessary for JMI to explain why injectors in the CCT™ kit are larger than those typically used in corresponding DDC ratings. EPA recognizes that the CCT™-equipped engine is a unique combination of components, and fuel injectors are clearly emissions-related components.

Engelhard comments that the severe injection advance plus lower compression ratio of the CCT™ kit will result in problems, including cold weather starting problems, shorter engine life, reduction in low speed performance and higher fuel consumption, and calls for JMI to demonstrate the need for the injection advance and the affect on durability, fuel economy and performance. Engelhard states that JMI should use a non-biased third party test facility to demonstrate that the kit does not degrade performance. DDC notes that the kit differs from DDC configurations and that they have no experience with it.

Engelhard and DDC also comment on the design of the proprietary camshaft, indicating that a change in camshaft design can impact engine performance and durability. Engelhard's concerns range from the dynamics of the valve train, which might affect durability of valve train parts, to increased internal exhaust gas recirculation (EGR), which might increase wear of cylinder liners and rings due to increased oil contamination with soot. Engelhard calls for durability data to verify that the valve train will not fail prematurely, and to ensure that the CCT™ kit will not cause additional maintenance and/or engine failure.

JMI has presented information in support of the durability and performance of the CCT™ kit. JMI states that it has two field trials underway. One is a 1983 Gillig powered by a 6V92TA MUI at Kitsap Transit in Bremerton, Washington. No problems have been reported as of July, with 16,000 miles of routine transit service. A second transit trial on a 6V92TA DDEC II engine has been initiated in an un-named northern city. JMI presents three routine analyses of the lubrication oil from the Kitsap transit bus, and indicates that the analyses show typical, normal patterns of engine break-in with no unusual results. Soot is unmeasurable in the oil at 4,451 miles. In a letter to EPA dated June 10, 1997, the Kitsap Director of Vehicle Maintenance, acknowledging that six weeks and 12,000 miles of accumulated service is a relatively short period of time, notes that the bus is responsive to driver demands in a fashion that is in keeping with this engine (somewhat more powerful), and no increase in fuel or oil consumption.

Additionally, JMI presents information that the engine components of the CCT™ kit have been used on several engines in the oil and water pumping industries in stationary source locations, with no reported problems. In general, these stationary engines operate in a cyclic mode from low speed to wide-open-throttle, full load, to supply power for drilling and pumping rigs. One such engine, a 6V92TA, has been run for more than 3,500 hours with no reported problems. Another diesel engine has been run more than 13,000 hours with no reported problems.

In comments dated July 21, 1997, DDC states that the differences in fuel modulator and throttle delay response characteristics may also be observed in real world driving conditions. DDC further notes that, although the Kitsap tests may not be representative of all engine, bus, and driving pattern combinations, it suggests that the CCT™ kit can be employed without serious loss of vehicle performance and the tests go a long way to allaying the concern expressed in DDC's original comments.

Regarding its proprietary camshaft, JMI states that the injector cam profile of its proprietary cam is identical to the original equipment (OE) cam profile, and the ramps and acceleration of the exhaust cam are the same as the original equipment (OE) camshaft. Additionally, the transition from the cam base circle to the first rise is slightly more gradual than the OE camshaft. JMI states that the dynamics of the CCT™ camshaft (exhaust valves open less and for a shorter time) may result in improved mechanical durability compared to the OE camshaft. While noting that the CCT™ technology slightly increases the amount of internal EGR, JMI notes the above-described long-term experience in the oil and pumping industry. Further, oil analyses being conducted in the Kitsap field trial, described above, indicates no additional soot contamination of the lubrication oil.

JMI presented the above-discussed information in support of the operability and durability of the CCT™ kit. No evidence has been presented that indicates a specific problem with the design, operability, or durability of the CCT™ kit. While there is no requirement under the program regulations for a certifier to demonstrate operability or durability of equipment, EPA remains concerned about the long-term performance of all certified equipment. However, any conclusions regarding decreased performance, durability, or operability of CCT™-equipped engines are speculative at present, and the in-use information presented by JMI does not indicate concern with the CCT™ kit. As noted above, EPA has authority under section 85.1413 to decertify equipment that fails to comply with requirements of the regulations.

EPA notes that JMI is required to cover the fuel injectors, camshaft, cylinder liners, pistons, piston rings, and other components of the CCT™ kit, regardless of supply option, under the emissions defect warranty required pursuant to section 85.1409.

DDC notes that its maximum back pressure limit for the 6V92TA MUI bus engines is typically 3 inches of mercury, and expresses concern that the addition of the CEM II catalytic muffler could cause DDC exhaust back pressure limits to be exceeded in many bus installations. DDC also is concerned about the JMI's field service procedure for checking exhaust back pressure, which states that it should be measured at full stall conditions. DDC indicates that the only way to check back pressure for conformance with DDC back pressure limits is with an engine operating at rated speed and wide-open-throttle. Back-pressure measurements made at any other condition will under-represent the full engine exhaust back pressure, and checking back pressure under these conditions may lead to excessive back pressure when the engine is operated in service. DDC calls for assurances that the CEM II will not cause DDC back pressure limits to be exceeded for any affected bus application. Verification must account for not only for the restriction of a clean catalyst core, but must also account for restrictions imposed by other exhaust system components, and the effects of core aging and ash accumulation over time.

JMI states that the CEM II is physically identical to the design of the original CEM, and its back pressure performance will be identical to the back pressure performance of the CEM under the same conditions. JMI notes that back pressure due to standard commercial mufflers vary, and may range from less than 0.5″ mercury (Hg) to more than 1.0″ Hg. Additionally, total back pressure may vary according to exhaust system design, engine speed or horsepower. JMI states that back pressure testing was conducted, as standard production practice, on CEM and CEM II units, using a 6V92TA of 322 hp, to ensure compliance with the 3.0″ Hg maximum set by DDC. All CEM models tested had back pressure values between 1.0″ to 1.5″ mercury.

EPA, in general, is concerned with in-use problems resulting from excessive back pressure. However, no information presented by commenters substantiate a concern for excessive back pressure with the CEM II. More specifically, EPA has not received comments from transit operators or others indicating significant problems with high back pressure from the CEM catalyst muffler, which JMI indicates is physically identical to the CEM II.

Regarding the ''full stall'' method of checking back pressure, JMI states that it is a common, practical tool used by transit operators to measure exhaust backpressure. JMI notes that conducting measurements at rated speed and wide-open-throttle is difficult because transit operators typically do not have chassis dynamometers available to permit such measurements. EPA notes that, as a general diagnostic tool, such measurement of back pressure could be useful with any exhaust system (catalyst or muffler). While the full transmission stall test may under represent full back pressure, it appears to provide some usefulness as a back pressure check. As with other CCT™ kit components, JMI is required to warrant the CEM II under the warranties required pursuant to section 85.1409. As noted previously, EPA can take action in the event of significant in-use problems and, ultimately, has authority to decertify equipment.

Few certifiers have extensive experience from in-use transit service to comprehensively demonstrate the durability and performance of equipment certified for the urban bus retrofit/rebuild program. Nor does the program regulation require such comprehensive demonstration. JMI has presented information of in-use experience in support of these characteristics of the CCT™ kit, and EPA knows of no reason at this time to oppose certification.

(C) Testing Demonstration and Documentation

NYCTA comments that the PM emissions levels of the certification engines are close to the 0.10 g/bhp-hr standard, expresses concern that CCT™ equipped engines will emit above the standard after in-use operation, and asks whether deterioration factors have been included in the certification levels. NYCTA also notes that the emissions data for the 6V92TA engine indicates that NO_X emissions increase, and NYCTA believes that some buses equipped with the CCT™ kit will emit above the 1988 emissions standard (10.7 g/bhp-hr).

The urban bus program regulations do not specifically require manufacturers to demonstrate the durability of their candidate equipment. Similarly, there is no requirement for certifiers to develop an empirical basis for determining a deterioration factor. During the initial design of the urban bus program, EPA recognized that durability demonstration would impose a significant burden on certifiers, and expected that such burden would prevent technologies from coming forward. A program without certified technology would provide minimal emission reductions. Instead of requiring a durability demonstration, the program is based on the requirement for certifiers to warrant their equipment for defects and emissions performance (as specified in section 85.1409), on EPA's authority to perform in-use testing of certified equipment, and on EPA's authority to decertify noncompliant equipment (as specified in section 85.1413). As stated in the preamble to the final rule of April 21, 1993 (58 FR 21379): ''EPA believes that, therefore, it is sufficient to hold manufacturers responsible for the emissions performance of their equipment through an emissions performance warranty * * *'' and ''Manufacturers will want to evaluate the durability of their equipment before selling it under this program to minimize their liability risk.'' Section 85.1413 provides authority to EPA to decertify equipment that EPA determines does not meet emissions requirements in-use. These emissions requirements include the HC, CO, NO_X, and smoke standards of a particular engine, in addition to the PM standards of the urban bus regulation.

The JMI notification indicates that the test engines were selected as ''worst case'' based on Table 3 of 58 FR 21373 (April 23, 1993). Engelhard comments that the test engine is not worst case for emissions from a catalyst-equipped engine, basically because the exhaust flow from higher horsepower engines would increase engine exhaust back pressure and reduce residence time of the exhaust within the catalyst, lowering catalyst effectiveness. Engelhard also claims that the CEM II, subject to higher exhaust temperatures from the higher horsepower engines, will have a greater tendency to make sulfate. DDC comments that the exhaust flow from higher hp engines is expected to be greater, but the 277 hp engine is the most popular for transit usage and therefore makes it the proper choice for certifying equipment for use on engines rated at 253, 277, and 294 horsepower.

For several reasons, EPA believes that the 6V92TA test engine equipped with the CCT™ kit, and rated by JMI at 277 hp, is acceptable to demonstrate compliance for 253, 277, 294, and 325 hp ratings. First, the test engine is clearly the engine model for which JMI is claiming applicability of the CCT™ kit. Further, the rating of the certification test engine is the most popular power rating according to the engine manufacturer. It therefore is the most representative power rating. Second, JMI has also presented emissions testing data from a 6V71TA engine model, which also demonstrates compliance of the CCT™ kit with the 0.10 g/bhp-hr standard.

Regarding Engelhard's concern for higher exhaust flow with higher horsepower, no information is presented for the potential increase in sulfate emissions and that contribution to the total particulate emissions of any of the engine ratings. Additionally, it is not clear that an engine of the JMI-rated 294 hp or 325 hp, would have significantly different exhaust emissions or flow rate from the certification test engine. This is because, as DDC notes, higher horsepower ratings generally produce higher exhaust temperatures which may compensate for lower catalyst residence time (that is, higher temperatures are generally conducive to higher catalytic conversion efficiency). Furthermore, JMI analyzed data published for DDC engine configurations, to show that exhaust flow rates of higher horsepower engines may increase only in the order of a few percent over the flow rate of a 277 hp engine. JMI notes that one 330 hp 6V92TA has a standardized flow rate that is 1.4 percent greater, and another 330 hp 6V92TA has a standardized flow rate that is 3.7 percent less, than the published flow rate for a 277 hp 6V92TA coach engine. JMI states that this increase in flow rate is well within the margin of safety that is engineered into the CEM II and will represent no loss in conversion. In summary, EPA is not convinced that exhaust flow is clearly related to engine horsepower rating, or that a higher horsepower test engine would necessarily be worst case. EPA is not aware of evidence suggesting a problem with back pressure from this catalytic muffler design. Also, JMI has more than one catalyst biscuit size, and the emissions testing on the 6V92TA was performed on its smallest biscuit. JMI bears the burden of the emission performance warranty required by program regulations.

In its letter of August 11, 1997, Engelhard comments that the same fuel injectors are used in the CCT™ kit for the 277 hp rating and 294 hp rating, and concludes that there is no 294 hp kit. Engelhard indicates that JMI needs to provide an explanation regarding the injector specifications.

EPA is aware that typical industry practice is to use larger fuel injectors for higher horsepower, because, as Engelhard notes in its comments, larger injectors result in higher horsepower. JMI has not provided EPA with torque curves for its power ratings other than the certification test engine rated at 277 hp. The requirements of the urban bus program were designed to minimize testing burden, while demonstrating emissions compliance, but not to verify performance of every engine rating. While JMI has demonstrated compliance with the 0.10 g/bhp-hr standard, operators should be aware that EPA has not verified the power output of ratings other than that which JMI tested for exhaust emissions.

Engelhard compares the engine torque curves developed during JMI's testing of the CCT™ kit and baseline engine, and comments that the CCT™ kit results in an significant loss of low torque and horsepower compared to a standard urban bus engine. Engelhard concludes that this will cause significant performance, acceleration, and fuel economy problems for users of the CCT™ kit. In its initial comments of March 14, 1997, DDC also notes the low torque developed at low engine speeds. DDC and Engelhard call for demonstration of in-use performance and durability evaluation.

In response, JMI states that low speed acceleration of a bus equipped with the CCT™ kit is improved, because the kit includes replacement of the throttle delay (standard equipment on bus engines) with a fuel modulator. JMI states that a bus equipped with a standard throttle delay experiences a limit on the full fuel acceleration. The throttle delay is designed to make full engine torque developed available in 4 to 7 seconds. An engine equipped with the CCT™ kit will immediately have all the torque developed available to the driver for acceleration. Therefore, low speed acceleration is improved.

Comments from Kitsap Transit, reflecting limited experience with the CCT™-equipped engine, state that ''* * * our drivers believe that on board power has been improved.'' In its comments of July 21, 1997, DDC notes that, although the Kitsap tests may not be representative of all engine, bus, and driving pattern combinations, it suggests that the CCT™ kit can be employed without serious loss of vehicle performance and the tests go a long way to allaying the concern expressed in DDC's original comments.

EPA recognizes differences between the torque maps generated for the baseline and the certification engine. However, EPA believes that the torque curve (that is, the torque map) generated for transient emissions testing can be a misleading representation of the torque that would be available at any instant from a similar engine during in-use service. This is due to the manner in which the torque map is generated for the transient emissions test and the particular fuel control means (such as throttle delay or fuel modulator) used on an engine. As DDC notes in its comments, the torque map is generated with the throttle delay fully discharged and the fuel rack in the full fuel position. Therefore, the influence of the throttle delay on fuel control is not reflected in the torque reported for the torque map. DDC states that the differences in fuel modulator and throttle delay response characteristics may also be observed in real world driving conditions. EPA therefore believes that conclusions based solely on comparison of torque maps may be misleading.

In summary, regarding the relative performance of CCT™-equipped engines, EPA is not aware of any clear evidence indicating a performance concern. Actual in-use experience, although limited, suggests that the CCT™ kit provides performance comparable to an original configuration.

DDC notes that during certification testing the CEM II was installed at a distance of six feet from the exhaust outlet of the turbocharger turbine, and comments that if the CEM II is installed in a location on a bus which is more than 6 feet from the turbine outlet, then the exhaust gases will be cooler and the effectiveness of the catalyst in oxidizing soot emissions will be less than was observed in the certification testing.

JMI presents exhaust temperature data from testing performed during certification of the CEM, which indicate a reduction of 10 degrees in exhaust gas temperature (from 627 degrees F to 617 degrees F) over a six-foot length between the turbine outlet and CEM. JMI states that if the CEM II is located an additional three or even six feet away from the outlet, then the exhaust temperature would decline by only an additional 5 to 10 degrees, which would have no effect on catalyst activity.

The temperature of the exhaust gases from a bus engine is continually changing during in-use operation due to variations in engine speed and load. EPA has no information that an additional few degrees drop in exhaust gas temperature is of significant concern regarding catalyst effectiveness. EPA has accepted in the past, as demonstration of compliance with emissions requirement of the urban bus program, emissions data developed from testing catalysts at a distance of six feet from the turbine outlet.

(D) Life Cycle Cost Analysis

NYCTA comments that the power ratings of the JMI certification test engine is above the range normally used in urban bus applications, and this should be included in the incremental life cycle cost analysis because of implications related to higher wear on driveline components and higher fuel consumption. Also, NYCTA states that it is not clear what power ratings are being offered by JMI.

JMI states that it will offer the CCT™ kit for the 6V92TA models in four horsepower ratings (253, 277, 294, and 325) that are for the most part, typical to the transit industry. (JMI has asked EPA to temporarily restrict its review to CCT™ kits applicable to 6V92TA engine models.) While JMI has not provided EPA with torque curves for its ratings other than the certification test engine rated at 277 hp, EPA notes that the certification engine produced a maximum power of 274 hp during the torque map, which is within roughly 1 percent of the JMI rating (277 hp). Therefore, EPA believes that JMI's nomenclature (that is, the ''rating'') for the CCT™ kit configuration it tested, 277 hp, is consistent with the actual power produced for the emissions test. EPA believes that operators having engines originally rated at 277 hp will most likely choose a retrofit kit of the same horsepower rating.

NYCTA also comments that data is needed, such as periodic catalyst inspection or replacement, in order to estimate the incremental maintenance cost component of the life-cycle costs. NYCTA also indicates that field testing experience in transit service is needed in order to estimate incremental life cycle costs.

JMI states that there is no incremental maintenance costs associated with the CCT™ kit—the maintenance checks required for a standard DDC engine also apply, at the same interval, to a CCT™-equipped engine. There is no scheduled replacement of the CEM II catalyst.

NYCTA notes the significant difference in the torque characteristics of the CCT™ equipped engine compared to the original configuration. NYCTA comments that modifications to the drive train may be required to maintain acceptable acceleration, and this should be included in the life-cycle estimates.

The need for drive train modifications appear to be speculative at present. EPA believes that comparing the torque maps of the baseline and CCT™ equipped engine as discussed above, may be misleading for purposes of predicting vehicle acceleration. Additionally, JMI states that the field trial being conducted at Kitsap Transit indicate that the performance, power and acceleration of the CCT™ equipped engine is not impaired.

The JMI cost analysis includes incremental costs for 2 hours of labor for installation of the CEM II catalytic muffler. Both DDC and Engelhard question this cost. Engelhard comments that an installation time of 4 to 6 hours is more appropriate. DDC questions the appropriateness of the time estimate for installation of the CEM II, given that the installation time budgeted for the converter muffler of the Engelhard ETX™ kit (see 62 FR 12166; March 14, 1997) is 6 hours, and installation of the two converters are ''* * * seemingly similar activities * * *''. DDC also states that installation time should include time to check that back pressure limits are not exceeded, and should account for installation of the water drainage device required for some applications of the kit, and incremental maintenance costs associated with routine vehicle maintenance.

JMI indicates that over 54 designs of CEMs have been engineered to cover the broad range of coach and engine combinations. The initial application for the CEM estimated a maximum installation time of 6.5 hours as a best estimate. JMI's installation time for the CEM II of 2 hours is based on field experience with actual installation of the CEM. JMI also has provided data and statements from operators supporting the accuracy of the two-hour installation time.

EPA believes that 2 hour installation time is appropriate for the cost analysis, and is included above in Table 3. JMI states that the water drainage device is not necessary on any vertical exhaust stack, and is therefore not included in the LCC analysis. JMI provides an emissions defect warranty, pursuant to section 85.1409 of the program regulations, which includes coverage of the CEM II. JMI also states that the CCT™ kit does not have additional routine maintenance requirements, incremental to standard DDC maintenance, service or installation procedures, including routine checks of the CEM II.

Engelhard comments that JMI's initial baseline engine, a DDC 6V92TA engine configured to a 253 hp rating, is invalid for comparison because of the specific parts used in the JMI certification engine. Engelhard claims that the turbocharger and fuel injectors of JMI's certification engine are from a 294 hp configuration and, therefore, for an accurate comparison of fuel economy and emissions, the CCT™ kit of 277 rating needs to be compared with a baseline engine of 294 hp. Engelhard claims that comparing the JMI engine with a 294 hp baseline engine from a previous Engelhard test program shows a 12 percent loss in fuel economy for the CCT™ kit.

In response, JMI subsequently tested a second baseline engine, a DDC configuration rated at 277 hp as shown above in Table 1. Engelhard comments that this baseline engine is not performing properly because the NOx emissions (13.0 g/bhp-hr) are significantly higher than the federal standard (10.7 g/bhp-hr) applicable to 1985 through 1989 model year.

EPA notes that JMI's 6V92TA certification engine produced a maximum power of 274 hp during the torque map, which is within roughly 1 percent of the JMI rating (277 hp). Therefore, EPA believes that JMI's nomenclature (that is, the ''rating'') for the CCT™ kit configuration it tested, 277 hp, is consistent with the actual power produced for the emissions test. The actual combination of parts developed by JMI for its 277 hp rating, while perhaps unique, is not relevant to choice of baseline engine for fuel consumption comparison. EPA believes that operators having engines originally rated at 277 hp will most likely choose a retrofit kit of the same horsepower rating. Therefore, for comparison of fuel consumption, engines of the same rating should be compared.

Regarding the NO_X emission level of the 277 hp baseline engine, the measured value (13.0 g/bhp-hr) may be higher than typical for this rating. However, EPA believes that the test of the 277 hp baseline engine is adequate for its sole purpose—to determine the impact of the CCT™ kit on fuel consumption.

DDC comments that the only proper way to make fuel economy comparisons is at equivalent power ratings, and Engelhard in its comments notes the potential for significant cell-to-cell variations that make correlating data between test cells unreliable.

DDC also comments that comparison made at maximum hp and maximum torque with DDC's published values suggests that the CCT™ kit imposes a 6 to 7 percent fuel economy penalty.

EPA believes that a typical operating cycle for urban buses cannot be characterized by fuel consumption determined at steady state, full power output, as DDC has suggested. EPA notes that a comparison of the 253 hp baseline engine with the certification engine (JMI-rated at 277 hp) indicates a one percent improvement with the kit. Additionally, JMI references preliminary in-service experience from the Kitsap field trial that indicates a 20 percent improvement in fuel economy, and states that JMI's position is that no fuel penalty should apply. Section 85.1407 of the program regulations require that incremental fuel cost be determined based on testing performed over the heavy-duty engine federal test procedure, or an approved alternative test procedure. EPA believes that it is appropriate to compare data from engines of the same horsepower and from the same test cell, when available, for determining the fuel economy impact. This data is available from the JMI testing and such comparison is consistent with the requirements of the regulations. Comparison of the baseline DDC-rated 277 hp engine to the JMI-rated 277 hp certification engine indicates a fuel penalty of 3 percent for the CCT™ kit. Using the calculations required for this determination, as set forth at section 85.1403(b)(1), the impact on the life cycle cost analysis of the CCT™ kit, as shown above in Table 3, is determined to be a penalty of $964.30.

Engelhard states that fuel modulators are not standard on 6V92TA coach engines. The standard throttle delay will have to be removed and the fuel modulator installed and the additional labor associated with this should be included in the LCC analysis. JMI indicates that a standard rebuild would include the removal, and reinstallation and re-calibration of the throttle delay. This is necessary in order to remove and replace the fuel injectors and other key engine components. When an engine is rebuilt with the CCT™ kit, the fuel modulator is installed in place of the throttle delay. EPA believes that use of the fuel modulator in a CCT™ kit presents no costs, incremental to the costs of a standard rebuild.

In its comments of July 21, 1997, DDC indicates that it is in fundamental agreement with the JMI life cycle cost analysis, except for the cost offset of the proprietary cam of the CCT™ kit. The cost offset in the analysis is $1229, and DDC believes that the offset should be $320, which is the cost for remanufactured camshafts available from DDC. DDC believes that most operators would be expected to use remanufactured parts when replacing camshafts at the time of rebuild.

EPA determined the cost of a ''weighted'' rebuild for the cost evaluation of DDC's upgrade kit for the 6V92TA MUI (61 FR 37734; July 19, 1996), and later updated that cost for certification of the Engelhard ETX™ kit (62 FR 12166; March 14 1997), both using cost information provided by DDC, and others, at those times. For the evaluation of the CCT™ kit, EPA relies on the cost determination for a ''weighted'' rebuild published in the **Federal Register** on March 14, 1997, updated to May 1997. EPA has not modified its March 14th determination of the cost because it has no data on the fraction of operators which are expected to use remanufactured camshafts.

(E) Warranty

DDC commented that the JMI warranty does not provide coverage for non-JMI parts that are used in conjunction with a CCT™ kit in rebuilding an engine, and does not cover any liability for labor costs or for any incidental or consequential damages. DDC also noted that use of standard DDC parts in conjunction with the CCT™ kit could result in the parts being subjected to unduly harsh operating environments, and DDC's parts warranty does not extend to parts that have been misapplied or misused. DDC noted that the warranty applies coverage only if an engine is operated with ''unadulterated'' diesel fuel, yet it is common practice for many operators to use fuel additives.

During the review process, JMI's warranty language underwent changes, as did the description of the CCT™ kit of today's notice. As noted previously, JMI restricted the specified emissions-related parts of the kit to DDC-supplied parts. Also, JMI changed its warranty language to make clear that it covers the emissions-related parts that JMI specifies to be used with the CCT™ kit. Warranty coverage applies to both supply options. The JMI warranty was also modified so that coverage is not conditioned on the use of ''unadulterated'' fuel. JMI states that additives are permissible, but requests to review the constituents of any additives used by transit operators before they are used by the transit.

With regard to labor costs, JMI is not required to cover labor costs associated with warranty repair because labor associated with equipment installation and maintenance is the responsibility of the transit operator. (Maintenance includes warranty repair.) This point is stated in the preamble to the final rule of April 21, 1993 (58 FR 21381): ''Bus operators will be responsible for the proper installation and maintenance of the equipment.'' Additionally, incidental or consequential damages, or non-JMI parts used in conjunction with retrofitting with a CCT™ kit, are not required to be covered pursuant to the warranty requirements of the program regulations (section 85.1409). EPA is not aware of any evidence that incidental or consequential damages will occur. If significant in-use problems develop, then EPA may take action.

IV. Certification

The Agency has reviewed the notification of intent to certify and other information provided by JMI, along with comments received from interested parties, and finds that the CCT™ kit described above:

(1) Complies with the particulate matter exhaust emissions standard of 0.10 g/bhp-hr, without causing the applicable engine families to exceed other exhaust emissions standards;

(2) Complies with the life cycle cost requirements pursuant to section 85.1403(b)(1);

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

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

(5) Meets other requirements necessary for certification under the Retrofit/Rebuild Requirements for 1993 and Earlier Model Year Urban Buses (40 CFR Sections 85.1401 through 85.1415).

Therefore, today's **Federal Register** notice announces certification of the above-described Johnson Matthey CCT™ kit for use in the urban bus retrofit/rebuild program as discussed below in section V.

V. Transit Operator Responsibilities

Today's **Federal Register** notice announces certification of the above-described CCT™ kit, when properly applied, as meeting the 0.10 g/bhp-hr particulate matter standard of the Urban Bus Retrofit/Rebuild Program.

In a **Federal Register** notice dated March 14, 1997 (62 FR 12166), EPA announced certification of a retrofit/rebuild kit produced by the Engelhard Corporation (the ETX™ kit). That certification means that urban bus operators using compliance program 1 must use equipment certified to the 0.10 g/bhp-hr standard when rebuilding or replacing applicable 1979 through 1989 model year DDC 6V92TA MUI model engines after September 14, 1997. The certified JMI equipment described in today's notice may be used by operators in compliance with the 0.10 g/bhp-hr standard. Operators using compliance program 2 having applicable engines may use the certified CCT™ kit and claim the certification PM level from Table 2 above, when calculating their Fleet Level Attained (FLA). Under program 2, an operator must use sufficient certified equipment so that its actual fleet emission level complies with the target level for its fleet.

As mentioned above, certification of the Engelhard ETX™ kit triggered the 0.10 g/bhp-hr standard for applicable 1979–1989 6V92TA MUI engines. That kit provides three power ratings: 253, 277, and 294 horsepower. JMI will offer the CCT™ kit in four power ratings: 253, 277, 294, and 325 hp. Certification of the CCT™ kit described in today's

Federal Register notice triggers the 0.10 g/bhp-hr standard for engines rated above 294 hp. This means that urban bus operators using compliance program 1 must use equipment certified to the 0.10 g/bhp-hr standard when rebuilding or replacing applicable engines above 294 hp after May 6, 1998.

Urban bus engines certified to meet California emissions standards are not applicable to the CCT™ kit discussed in today's **Federal Register** notice. Additionally, the 0.10 g/bhp–hr PM standard is not triggered for engines certified to meet California emission standards. Operators of such urban buses, who choose to comply with program 1, are not required to use equipment certified to the 0.10 g/bhp–hr PM standard until the standard has been triggered for such engines. Operators of urban buses having engines certified to meet California emission standards, and who choose to comply with program 2, may not use the CCT™ kit described in today's notice to meet program requirements.

As stated in the program regulations (40 CFR 85.1401 through 85.1415), operators must, beginning January 1, 1995, maintain records for each engine in their fleet to demonstrate that they are in compliance with the requirements of the Urban Bus Retrofit/Rebuild Program. 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 using the supply option 2, as described previously in today's **Federal Register** notice, must be aware of their responsibility for maintenance of records pursuant to 40 CFR Sections 85.1403 through 85.1404, because they do not purchase the complete CCT™ kit from JMI. Urban bus operators using supply option 2 must be able demonstrate that all parts used in the rebuilding of engines are in compliance with program requirements. In other words, such urban bus operators must be able to demonstrate that all components of the kit certified in today's **Federal Register** notice are installed on applicable engines.

Dated: October 29, 1997.

Richard D. Wilson,

Acting Assistant Administrator for Air and Radiation.

[FR Doc. 97–29397 Filed 11–5–97; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[FRL–5917–6]

Underground Injection Control Program; Hazardous Waste Injection Restrictions; Petition for Exemption—Class I Hazardous Waste Injection; CECOS International, Inc. (CECOS)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of final decision on petition modification.

SUMMARY: Notice is hereby given that modification of an exemption to the land disposal restrictions under the 1984 Hazardous and Solid Waste Amendments to the Resource Conservation and Recovery Act has been granted to CECOS, for the Class I injection well located at Sulphur, Louisiana. As required by 40 CFR part 148, the company has adequately demonstrated to the satisfaction of the Environmental Protection Agency by petition and supporting documentation that, to a reasonable degree of certainty, there will be no migration of hazardous constituents from the injection zone for as long as the waste remains hazardous. This final decision allows the underground injection by CECOS, of the specific restricted hazardous waste identified in the exemption modification, into the Class I hazardous waste injection well at the Sulphur, Louisiana facility specifically identified in the modified exemption, for as long as the basis for granting an approval of this exemption remains valid, under provisions of 40 CFR 148.24. As required by 40 CFR 124.10, a public document was issued July 31, 1997, and closed on September 15, 1997. No comments were received. This decision constitutes final Agency action and there is no Administrative appeal.

DATES: This action is effective as of October 28,1997.

ADDRESSES: Copies of the modified petition and all pertinent information relating thereto are on file at the following location: Environmental Protection Agency, Region 6, Water Quality Protection Division, Source Water Protection Branch (6WQ–S), 1445 Ross Avenue, Dallas, Texas 75202–2733.

FOR FURTHER INFORMATION CONTACT: Philip Dellinger, Chief, Ground Water/ UIC Section, EPA—Region 6, telephone (214) 665–7165.

Oscar Ramirez, Jr.,

Acting Director, Water Quality Protection Division (6WQ).

[FR Doc. 97–29387 Filed 11–5–97; 8:45 am]

BILLING CODE 6560–50–U

ENVIRONMENTAL PROTECTION AGENCY

[FRL–5918–9]

National Environmental Justice Advisory Council; Notification of Meeting Public Comment Period(s) and Environmental Justice Enforcement Roundtable Open Meetings

Pursuant to the Federal Advisory Committee Act (FACA), Public Law 92–463, we now give notice that the National Environmental Justice Advisory Council (NEJAC) along with the subcommittees will meet on the dates and times described below in conjunction with a NEJAC and EPA-sponsored Environmental Justice Enforcement Roundtable. All times noted are Eastern Standard Time. All meetings are open to the public. Due to limited space, seating at the NEJAC meeting will be on a first-come basis. Documents that are the subject of NEJAC reviews are normally available from the originating EPA office and are not available from the NEJAC. The NEJAC and subcommittee meetings will occur at the Regal University Hotel, 2800 Campus Walk Avenue, Durham, NC 27705–4479, telephone number: 919/383–8575. The NEJAC and EPA-sponsored Environmental Justice Enforcement Roundtable will occur at North Carolina Central University in Durham, NC.

The full NEJAC will convene Monday, December 8 from 9:00 a.m. to 10:30 a.m. and from 6:30 p.m. to 9:00 p.m., and Wednesday, December 10 from 9:00 a.m. to 5:00 p.m. and from 6:45 p.m. to 9:00 p.m. to follow-up on pending items from the May 1997 meeting, to hear a presentation from the newly created EPA's Office of Children Health Protection, and several NEJAC new business interest items. NEJAC will have a break in the meeting schedule Monday, December 8 at 10:30 a.m. to conduct a bus tour of local environmental justice sites. There will be public comment periods scheduled from 7:00 p.m.—9:00 p.m. on Monday, December 8 and on Wednesday, December 10.

The six subcommittees will meet Tuesday, December 9 from 9:00 a.m. to 6:30 p.m. Any member of the public wishing additional information on the subcommittee meetings should contact the specific Designated Federal Official at the telephone number listed below.