

**ENVIRONMENTAL PROTECTION
OFFICE OF AIR QUALITY MANAGEMENT**

National Low Emission Vehicle (NLEV) and Heavy-Duty Diesel New Engine Standards Program

Proposed Amendments: N.J.A.C. 7:27-26.1 through 26.7.

Proposed New Rules: N.J.A.C. 7:27-28.1, 28.2, 28.5, 28.6, 28.7, 28.9 and 28.10.

Proposed Recodification: N.J.A.C. 7:27-26.11 and 26.16 as 26.8 and 26.10, respectively.

Proposed Recodification with Amendments: N.J.A.C. 7:27-26.8, 26.9, 26.10 and 26.15 as 28.3, 28.4, 28.8 and 26.9, respectively.

Authorized by: Bradley M. Campbell, Commissioner, Department of Environmental Protection.

Authority: N.J.S.A. 13:1B-3(e), 13:1D-9, 26:2C-8 et seq., specifically 26:2C-8, 8.1 through 8.5, and 8.11, and 39:8-61.

Calendar reference: See Summary below for explanation of exception to calendar requirement.

DEP Docket Number: 29- 04- 11 /455

Proposal Number: PRN 2004-470

A **public hearing** concerning this proposal will be held at 10:00 A.M. on Friday, January 21, 2005, at:

First Floor Public Hearing Room
Department of Environmental Protection
401 E. State Street
Trenton, New Jersey

Submit written comments by February 18, 2005, to:

Alice A. Previte, Esq.
Attn: DEP Docket No. 29-04-11/455
Office of Legal Affairs
New Jersey Department of Environmental Protection
PO Box 402
Trenton, NJ 08625-0402

The Department of Environmental Protection (Department) requests that commenters submit comments on disk or CD as well as on paper. Submittal of a disk or CD is not a requirement. The Department prefers Microsoft Word 6.0 or above. Macintosh™ formats should not be used. Each comment should be identified by the applicable N.J.A.C. citation, with the commenter's name and affiliation following the comment.

Several documents are cited within this proposal as references or as documents being incorporated by reference. Copies of these documents may be requested from:

New Jersey Department of Environmental Protection
Public Access Center

401 E. State Street, 1st floor
PO Box 402
Trenton, NJ 08625

An additional source of documents cited within this notice as references or as documents being incorporated by reference are available from the website of the United States Environmental Protection Agency (USEPA), Office of Transportation and Air Quality, at <http://www.epa.gov/otaq>, and from the website of the California Air Resource Board (CARB) at: <http://www.arb.ca.gov/regact/HDDE2007/HDDE2007.htm>.

The agency proposal follows:

Summary

Since the Department has provided a 60-day comment period on this proposal, the proposal is exempted from the rulemaking calendar requirement pursuant to N.J.A.C. 1:30-3.3(a)5.

The Department is proposing to recodify with amendments its rules governing heavy-duty diesel new engine requirements, at N.J.A.C. 7:27-26, National Low Emission Vehicle Program and Heavy-duty Diesel New Engine Requirements, in order to clarify and supplement requirements regarding the sale, for use or registration in New Jersey, of certain heavy-duty diesel vehicles (HDDVs) (on-road, only) and heavy-duty diesel engines (HDDEs), model years (MYs) 2007 and later (manufactured for use in HDDVs, only).

Existing Subchapter 26 contains provisions that control New Jersey's participation in the National Low Emission Vehicle (NLEV) program, a program primarily directed at ensuring that gasoline-fueled cars sold in New Jersey and across the nation meet a low emission standard agreed upon by the United States Environmental Protection Agency (USEPA), the automobile industry and the participating states. Existing Subchapter 26 also contains the requirement that, beginning with MY 2005, new, HDDE-equipped HDDVs that are sold for use in New Jersey must be certified by the California Air Resource Board (CARB) as complying with its emission standards and testing requirements for new HDDEs. For clarity, the Department proposes to separate these two sets of program rules by recodifying the provisions relating to the heavy-duty diesel new engine requirements at N.J.A.C. 7:27-28, and by retaining the NLEV program rules at N.J.A.C. 7:27-26.

In addition to separating the rules for the two programs, the Department is proposing to amend the provisions relating to the certification of HDDEs to underscore that the standards to which these engines will be certified by CARB will change significantly beginning with MY 2007. CARB's HDDE standards for MYs 2007 and beyond are based on and closely parallel or are identical to Federal standards promulgated by the USEPA on January 18, 2001, effective beginning with MY 2007.

New Jersey promulgated the CARB certification requirement for HDDEs and HDDVs sold for use in New Jersey to close the "regulatory gap" that would have otherwise existed for MYs 2005 and 2006. As is explained in greater detail in the Department's proposal and adoption of the existing requirements, MYs 2005 and 2006 fell into the gap between the model years to which the consent decrees containing the so-called "Not-to-Exceed" or "NTE" testing requirements applied and the commencement, with MY 2007, of the analogous Federal testing

requirements. (See 33 N.J.R. 2381(a) (July 16, 2001) and 33 N.J.R. 4128(b) (December 3, 2001)).

The Department's NTE rulemaking was part of a nationwide rulemaking effort to ensure that engine manufacturers would continue to use the NTE testing requirements in demonstrating compliance with the applicable emission standards. This nationwide effort was in response to the opposition and legal challenges to the October 1, 2002, deadline of the consent decrees that was mounted by engine makers, truck makers, and fleet operators.

Beginning with model year 2007, USEPA's rules contain testing requirements similar to those in the consent decrees and the NTE rules, as well as more stringent emission standards. California based its heavy-duty diesel engine requirements for MY 2007 and beyond on these Federal 2007 rules. However, some of the same groups that challenged the 1998 consent decrees began to raise similar arguments respecting the technologies that will be employed to meet the 2007 rules. Some members of Congress responded to those assertions by requesting a study by the United States Government Accounting Office (GAO). That study recognized a concern expressed by the regulated community as to the feasibility of timely meeting the Federal 2007 rule requirements. In its March 2004 report, the GAO recommended that the USEPA consider ways to address concerns about technology costs, reliability, and availability to meet the 2007 standards—such as improving communication with all stakeholders and using an independent panel to assess progress and consider industry incentives. (GAO Report #04-313: “EPA Could Take Additional Steps to Help Maximize the Benefits from the 2007 Diesel Emissions Standards,” p. 1 (March 2004).) On the other hand, the USEPA released its Highway Diesel Progress Review, Report 2 in March 2004, finding that compliance with the Federal 2007 rule was on track. (EPA420-S-04-001, March 2004.)

In preparing this report, the USEPA met with more than 20 companies and drew on work from a wide variety of government and industry sources to reach its conclusions regarding the progress by industry to develop clean diesel technologies for the heavy-duty 2007 diesel emissions regulations. The USEPA concluded that engine manufacturers were on target to introduce new engines in 2007; diesel particulate filters that reduce harmful PM emissions by more than 90 percent will be used by all manufacturers; NO_x control will be accomplished using proven technologies, some of which are in production today; and engine manufacturers will conduct early prototype testing with trucking customers in 2005. In 2007, these new clean engines operating on the 15 ppm sulfur diesel fuel will reduce NO_x emissions by 50 percent, reduce PM emissions by more than 90 percent, will substantially contribute to air quality improvement, help states meet Clean Air Act goals and further protect public health and the environment.

Some of the states participating in the NTE rulemaking effort, including New Jersey, chose not to limit the CARB certification requirement to only those model years affected by the regulatory gap (MYs 2005 and 2006). They, like New Jersey, promulgated open-ended rules so that the CARB certification requirement did not end after MY 2006. What this means for New Jersey and the other states with open-ended rules is that, beginning with MY 2007, HDDVs and HDDEs to which the rules apply must be certified by CARB as having met the more stringent emission standards for HDDEs that phase in with that model year. Some of the states that adopted NTE rules only for model years 2005 and 2006 have joined in a nationwide movement to extend the CARB-certification requirement beyond those model years by opting in to

California's HDDE emission standards for MYs 2007 and beyond. As is explained below, this nation-wide movement is intended to show support for the USEPA's promulgation and retention under challenge of the standards and requirements upon which CARB's rules are based. The states with open-ended rules, such as New Jersey, and those with only model year 2005 and 2006 NTE rules, are seeking to establish a regulatory backstop should the USEPA, in what is hoped to be an unlikely event, repeal its requirements for MY 2007 and later HDDEs.

To assist states interested in pursuing rulemaking to opt in to CARB's standards and requirements for MY 2007 and later HDDEs, the State and Territorial Air Pollution Program Administrators/Association of Local Air Pollution Control Officials (STAPPA/ALAPCO), the national air pollution association, developed a Model Rule for States, which it released on September 29, 2004. The Department participated in the development of this Model Rule and has drawn on it in preparing these proposed rules. It should be noted that the Model Rule does not include either a low sulfur diesel fuel requirement or an urban bus certification requirement to correspond to CARB's requirements, nor does the Department propose to add these requirements to its current HDDE program.

To date, a number of states have adopted, proposed or committed to propose rules that would opt in to CARB's MY 2007 HDDE standards, and more are expected to follow suit. Those states include at least Connecticut, Delaware, Georgia, Maine, Maryland, Massachusetts, New Jersey, New York, North Carolina, Pennsylvania and Rhode Island. The District of Columbia has made the same commitment. As discussed above, STAPPA/ALAPCO has prepared a Model Rule that should facilitate the promulgation of state rules requiring CARB certification requirements for model years 2007 and beyond across the nation.

In addition, the Ozone Transport Commission (OTC) on June 9, 2004, approved a Memorandum of Understanding (MOU) supporting the efforts of the OTC states to propose the adoption of the California heavy-duty diesel requirements to cover model years 2007 and beyond. By this MOU, the OTC indicated that it supported the USEPA HDDE 2007 standards rule and wished to ensure its full implementation and to protect it against weakening or delay. The OTC also reaffirmed therein its commitment to encourage the adoption of the most effective motor vehicle emission control programs available, such as this program. By entering into the MOU, the OTC signatory member states and the District of Columbia committed to propose rules implementing the California heavy-duty diesel requirements for model years 2007 and beyond. New Jersey is a signatory to the OTC MOU.

It is anticipated that the total population represented by states that have expressed an intent to adopt the CARB certification requirements would be large enough to result in a de facto national standard, even if the USEPA were to repeal its standards for MY 2007 and later HDDEs.

Because the Department's existing and proposed amended rules are based upon the California rules, which are, in turn, based upon the existing Federal rule, a discussion of those Federal and California rules is instructive.

The Federal and California Standards for HDDEs MYs 2007 and Later

When it established the Clean Air Act (CAA), 42 U.S.C. §§7401 et seq., in 1970, Congress determined that air pollution prevention and control "is the primary responsibility of States and local governments" with the Federal government providing leadership in developing

cooperative Federal, State, regional and local programs to effect this goal. (CAA §101, 42 U.S.C. §7401.) Congress attempted to balance this overall principle with the need of the motor vehicle manufacturing industry to avoid dozens of potentially conflicting requirements for motor vehicles by providing a general prohibition against state regulation of vehicle emissions, except in California. (See CAA §209, 42 U.S.C. §7543.) However, Congress also provided that a state that has had its implementation plan provisions approved under Part D ("Plan Requirements for Nonattainment Areas") of the CAA may, under certain circumstances, adopt and enforce California's vehicle emission standards. (See CAA §177, 42 U.S.C. §7507.)

In establishing new emission standards for HDDEs MY 2007 and later, the USEPA recognized that millions of Americans live in areas with unhealthful air quality that currently endangers public health and welfare. According to the USEPA, without the new HDDE standards there is a significant risk that an appreciable number of 45 areas with a total of 128 million people across the country will violate the health-based one-hour National Ambient Air Quality Standard (NAAQS) for ground level ozone. Furthermore, USEPA's analysis shows that 28 million people live in areas that face a significant risk of exceeding the NAAQS for particulate matter with a diameter 10 microns and smaller (PM₁₀), unless there are significant emission reductions between 2007 and 2030. New Jersey continues to be in non-attainment of the NAAQS for ozone throughout the State. Although the State has never been designated as non-attainment for the NAAQS for PM₁₀, attainment of the annual NAAQS for PM_{2.5} (PM with a diameter 2.5 microns and smaller, otherwise referred to as fine PM), which the USEPA established in 1997, is problematic in New Jersey. Two northern New Jersey monitors show exceedances of the NAAQS for PM_{2.5}, according to three-year average data from 1999 through 2001 and 2000 through 2002, and several other counties contribute to those exceedances.

The adverse health effects of ground level ozone and PM_{2.5} include premature death, aggravation of respiratory and cardiovascular disease (as indicated by increased hospital admissions and emergency room visits, school absences, lost work days, and restricted activity days), increased respiratory symptoms, changes to lung tissues, structures and function, altered respiratory defense mechanisms, and chronic bronchitis.

Ozone also causes crop and forestry losses, and PM causes damage to materials and soiling of commonly used building materials and culturally important items, such as statues and works of art. Nitrogen oxides (NO_x), sulfur dioxide (SO₂) and PM each contribute to substantial visibility impairment in many parts of the United States. States are coming together in a national effort to improve visibility in parks and wildlife areas across the United States. Visibility problems are attributed to regional haze, which is caused when sunlight encounters tiny pollution particles, primarily fine particulate matter, in the air. The USEPA has designated Brigantine National Wildlife Refuge, which is located in Atlantic County, as one of the 156 key areas throughout the nation requiring visibility improvements. Therefore, New Jersey is required to develop and implement an air quality protection plan to reduce the pollution that causes visibility impairment. NO_x emissions also contribute to the acidification, nitrification and eutrophication of water bodies, while SO₂ emissions contribute to acid rain that denudes forests and renders streams and lakes in the Eastern United States unable to support aquatic life.

Across the country, including in New Jersey, Federal, state and local governments are working to bring ozone and particulate levels into compliance with the NAAQS through State Implementation Plan (SIP) attainment plans and maintenance plans in order to ensure that future

air quality reaches and continues to achieve these health-based standards. In New Jersey, these plans address mobile sources of air pollution as well as stationary sources, since in many instances regulation of stationary sources cannot, by itself, achieve the necessary improvements in air quality.

Emissions from heavy-duty vehicles, whether gasoline-fueled or diesel-powered, include or contribute to the formation of ozone, PM, NO_x, SO₂, and volatile organic compounds (VOCs). Both NO_x and VOCs contribute to the formation of ground level ozone, while PM, NO_x, SO₂ and VOCs contribute to PM levels. In particular, emissions from HDDEs account for substantial portions of the country's ambient PM and NO_x concentrations. The USEPA has estimated that by 2007, heavy-duty vehicles will account for 28 percent of mobile source NO_x emissions and 20 percent of mobile source PM emissions. These proportions are even higher in some urban areas, such as in Sacramento, Atlanta, and Washington, DC, where heavy-duty vehicles contribute over 34 percent of the mobile source NO_x emissions, and in Santa Fe, Los Angeles, and Hartford, where heavy-duty vehicle PM emissions account for 38, 25 and 30 percent of the mobile source PM emissions inventory, respectively. New Jersey's urban areas are experiencing comparable problems with NO_x and PM emissions from mobile sources. Given the anticipated increase in the number of vehicles and vehicle miles traveled, the impact from heavy-duty diesel emissions will increase absent further controls.

In addition to its contribution to PM inventories, diesel exhaust PM is of special concern because it has been implicated in an increased risk of lung cancer and respiratory disease. The USEPA's draft Health Assessment Document for Diesel Exhaust was reviewed in public session by the Clean Air Scientific Advisory Committee (CASAC) on October 12 and 13, 2000. (See CASAC's Review of EPA's Health Assessment Document for Diesel Exhaust (EPA 600/8-90/057E), December 2000 (EPA-SAB-CASAC-01-003).) The USEPA concluded, and the CASAC agreed, that diesel exhaust is likely to cause cancer in humans.

Over time, USEPA regulations have taken NO_x emissions from HDDEs from uncontrolled levels of approximately 13 grams per brake horsepower hour (g/bhp-hr) to six g/bhp-hr (MY 1990); then to five g/bhp-hr (MY 1991); four g/bhp-hr (MY 1998); and finally to 2.5 g/bhp-hr (MY 2004). In addition, seven of the largest HDDE manufacturers implemented measures to reduce emissions beginning October 1, 2002, to meet the requirements of the Heavy-Duty Diesel Engine Settlement Agreements reached with the USEPA and CARB. USEPA regulations have similarly reduced allowable PM levels incrementally from 0.60 g/bhp-hr (MY 1990) to 0.25 g/bhp-hr (MY 1991), and finally to 0.10 g/bhp-hr (MY 1994).

The Federal 2007 Rule

On January 18, 2001, the USEPA promulgated a comprehensive rule affecting heavy-duty vehicle emissions commencing in MY 2007 (the Federal 2007 rule). The rule represents the first time that heavy-duty trucks will be required to employ aftertreatment devices similar to the catalytic converters employed on passenger cars for the past 25 years. (See 66 FR 5001, January 18, 2001.) The Federal 2007 rule established a NO_x emission standard of 0.2 g/bhp-hr, which engine manufacturers have the option of meeting on a phased-in basis. That is, for MYs 2007 through 2009, manufacturers will be in compliance provided at least 50 percent of the new engines they produce meet the new limit; full compliance is required commencing with MY 2010. When fully implemented, the Federal 2007 rule will require an overall NO_x emission

reduction of 98.5 percent from uncontrolled highway cruise levels, and an emission level that is 90 percent below the current Federal standard. The Federal 2007 rule also establishes a new lower limit on emissions of non-methane hydrocarbons (NMHC) of 0.14 g/bhp-hr, phased-in in the same manner as the NO_x limits. The Federal 2007 rule would further reduce allowable PM emissions to 0.01 g/bhp-hr, to take full effect for the 2007 model year (that is, there is no phase-in for PM). The technologies needed to meet these more stringent standards for diesel engines are very sensitive to sulfur in the fuel. For this reason, the Federal 2007 rule requires low sulfur diesel to be generally available by late 2006. Sulfur in diesel fuel for on-road use is currently limited to 500 parts-per-million (ppm) by weight; the Federal 2007 rule will reduce this limit to 15 ppm sulfur, which is a 97 percent reduction. Refiners can take advantage of a temporary compliance option, including an averaging, banking and trading (ABT) component, beginning in June 2006 and lasting through 2009, with credit given for early compliance before June 2006. Under this option, up to 20 percent of highway diesel fuel may continue to be produced at the existing 500 ppm sulfur maximum standard, though it must be segregated from 15 ppm fuel in the distribution system, and may only be used in pre-2007 model year heavy-duty vehicles. All MY 2007 and later diesel-fueled vehicles must use the new low sulfur diesel fuel.

The Federal 2007 rule also includes supplemental certification test procedures that apply to MY 2007 and later heavy-duty diesel-cycle engines. (Heavy-duty diesel-cycle engines include diesel-cycle engines fueled with diesel, natural gas, and liquefied petroleum gas.) These test procedures differ slightly from those in the 1998 Federal Consent Decrees and California Settlement Agreements, and the 2005 supplemental test procedures adopted by CARB and 13 other states, including New Jersey's existing NTE rules. These changes generally reflect the more stringent emission standards than those for which the predecessor test procedures applied and were appropriate. Changes to the Federal 2007 rule's supplemental test procedures also reflect the expected effectiveness of advanced diesel PM filters. In addition, changes to the test procedures include allowing warm-up time for NO_x and NMHC aftertreatment devices and otherwise accommodating vehicles that either operate minimally or are not capable of operating at all at the specific conditions of certain regions of the Not-to-Exceed Test control zone. Other changes include modification of the sampling time for the NTE test and changes to improve the precision of emission measurements. For a more detailed discussion of these changes to the supplemental certification test procedures, see CARB's Updated Informative Digest, where CARB discusses its own identical changes to its supplemental test procedures.

The California 2007 Rule

On October 25, 2001, CARB approved amendments to Section 1956.8 of the California Code of Regulations (CCR), Title 13, Chapter 1, Article 1.5, and the incorporated "California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles" (the California 2007 rule), to provide for nearly identical emission standards, test procedures, and other requirements contained in the Federal 2007 rule. In addition to the emission standards and test procedures, CARB incorporated other requirements from the Federal 2007 rule to harmonize Federal and California requirements for HDDEs built in model years 2007 and later. CARB did not, as part of its rulemaking, address requirements for urban buses, which it had previously promulgated, or requirements for low sulfur diesel fuel, which it subsequently promulgated.

The following discussion is drawn from CARB's comparison of the California 2007 rule and the Federal 2007 rule set forth in its "Updated Information Digest, Amendments to Adopt More Stringent Emission Standards for 2007 and Subsequent Model Year New Heavy-Duty Diesel Engines." This document is available from CARB's website at <http://www.arb.ca.gov/regact/hdde2007/uid.pdf>. A useful comparison of the two rules is also included in CARB's "Staff Report: Initial Statement of Reasons," (ISOR) also available on CARB's website at <http://www.arb.ca.gov/regact/HDDE2007/hdde2007.htm>, more specifically, at <http://www.arb.ca.gov/regact/HDDE2007/ISOR.doc> (for the Microsoft Word version) and at <http://www.arb.ca.gov/regact/HDDE2007/isor.pdf> (for the PDF version).

A more detailed description of CARB's HDDE standards can be found at CARB's website, generally, at <http://www.arb.ca.gov/homepage.htm>.

Emission Standards

The California 2007 rule includes the emission standards for MY 2007 and later heavy-duty diesel-cycle engines and medium-duty diesel engines found in the Federal 2007 rule. Generally speaking, for CARB this includes engines designed for use in HDDVs with a Gross Vehicle Weight Rating (GVWR) of at least 14,001 pounds, and for the USEPA it also includes engines designed for use in HDDVs with a GVWR of at least 8,001 pounds. That is, while CARB and USEPA employ identical weight categories for the HDDE subcategories of medium and heavy heavy-duty diesel engines (MHDDEs and HHDDEs), the USEPA includes in the subcategory light heavy-duty diesel engines (LHDDEs) those engines designed for use in HDDVs with a GVWR of 8,501 to 14,000 pounds in addition to those meeting the GVWR requirement of 14,001 to 19,000 pounds established by CARB, as illustrated below:

<u>LHDDE</u>		<u>MHDDE</u>	<u>HHDDE</u>
USEPA:	CARB:	USEPA and CARB:	USEPA and CARB:
8,501 - 19,500 lbs	14,001 - 19,500 lbs	19,501 - 33,000 lbs	33,001 lbs and up

The CARB certification requirements that the Department proposes herein apply only to those HDDVs with a GVWR greater than 14,000 pounds. Impact analyses prepared by the USEPA include the lighter weight LHDDEs not covered by CARB's requirements or this proposal.

CARB adopted a four-year phase-in program identical to the Federal 2007 rule, which provides that only the NO_x and NMHC emission standards will be phased-in. Identical to the Federal 2007 rule, the California 2007 rule does not provide for a phase-in of the PM and CO emission standards, which will be fully implemented beginning with model year 2007. The California 2007 rule also provides an averaging, banking and trading (ABT) program identical to the Federal ABT program reflected in the Federal 2007 rule. CARB's ABT program allows manufacturers to certify engine families such that the aggregate average does not exceed the emission standard. Additionally, manufacturers may bank excess emission credits for later use or trade these credits to other manufacturers.

Like the Federal 2007 rule, the California 2007 rule provides incentives for the early introduction of lower-emitting engines. Engines that satisfy the adopted requirements and that are introduced into the marketplace before 2007 will receive credits equal to 1.5 times the number of these early-introduction engines. For example, a manufacturer that introduces two

lower-emitting, early-introduction engines will reduce the number of engines that it is required to produce in model years 2007 through 2009 by three. Each early-introduction engine must meet all requirements applicable to the MY 2007 engines. If the engine complies only with the PM requirements, then the offsets may be used only for MY 2007 PM credits. Engines that can meet one-half of the adopted NO_x emission standard (0.10 g/bhp-hr) earlier than the phase-in period, in addition to all other requirements applicable to the MY 2007 engines, will be classified as "Blue Sky Series" engines. Each of these engines will be credited as two MY 2007-compliant engines. Thus, two Blue Sky Series engines will reduce the number of required phased-in engines by four.

The California 2007 rule is also identical to the Federal 2007 rule in eliminating or limiting the prior exception for turbocharged diesel engines from controlling crankcase emissions. Due to technological advances in crankcase filtration, crankcase emissions can be filtered and returned to the engine inlet or controlled by venting the crankcase emissions upstream or downstream of the aftertreatment device, making this exception largely unnecessary. However, engine manufacturers wishing to take advantage of the exception for turbocharged engines would be required to add crankcase emissions vented downstream of the aftertreatment device to the exhaust emissions (either physically or arithmetically) in determining compliance with the more stringent emission standards. Due to the stringency of these standards, however, CARB did not expect engine manufacturers to vent crankcase emissions downstream of the aftertreatment device.

Test Procedures

As mentioned above, the California 2007 rule contains supplemental certification test procedures identical to those contained in the Federal 2007 rule.

New Jersey's rules

State and local governments, particularly in New Jersey, in their efforts to protect the health of their citizens and to comply with requirements of the CAA, have recognized the need to achieve major reductions in diesel PM emissions, and have sought Federal action in setting stringent new standards to bring this about. New Jersey has recently stepped up its efforts to address the need for these reductions in diesel PM emissions. Governor McGreevey established an initiative to reduce fine PM emissions from diesel engines and other sources as part of the goal of reducing air pollution by at least 20 percent over the next 10 years. As part of that initiative, the Department is using a variety of strategies to reduce diesel emissions, including an education and enforcement program regarding excessive idling of heavy-duty diesel vehicles; the heavy-duty diesel vehicle inspection and maintenance program; and an effort working with the New Jersey Legislature to design a cost-effective Statewide retrofit program for certain on-road and off-road diesel vehicles. New Jersey's Clean Air Council (CAC), comprised of representatives from public, private and non-profit groups who serve in an advisory capacity to the Department regarding air matters, recently issued a report entitled "Fine Particulate Matter in the Atmosphere: Health Impacts in NJ & Need for Control Measures," endorsing the Governor's diesel PM reduction initiative. The report, which the Council presented at its 2004 Annual Public Hearing, indicates that the health risks from PM are greater than first thought - only smoking and obesity outrank PM in the estimated number of premature deaths caused every

year. The report also includes extensive recommendations on how best to address this serious health issue in New Jersey. The Department has posted the Council's report at www.nj.gov/dep/cleanair.

As discussed above, in promulgating CARB-certification requirements to address the regulatory gap for NTE testing requirements, the Department established requirements that also addressed MY 2007 and later HDDEs and HDDVs. Nevertheless, since the Federal 2007 rule and the CARB 2007 rule include changes to the requirements underlying CARB certification (that is, emission standards and supplemental test procedures) beginning with MY 2007, the Department proposes to amend its rules and provide further explanation of those changes. These CARB standards and test procedure changes also prompted the Department to review its rules at N.J.A.C. 7:27-26 for its Heavy-Duty Diesel New Engine Requirements program, also referred to as the "HDDE program," in order to simplify and clarify the rules in a number of ways. The simplifications and clarifications include, for example, splitting the program rules for the OTC-LEV/NLEV program and the HDDE program into two subchapters, clarifying that the HDDE rules apply to both HDDEs and new HDDVs, eliminating definitions of terms not used in either the Department's OTC-LEV/NLEV or HDDE program rules, and simplifying some definitions to reference the CARB definitions upon which they are based or to which they otherwise refer. The Department also proposes adding a prohibition of the practice known as "stockpiling" engines, that is, the generally-prohibited (by the USEPA and CARB) early purchase of vehicles and/or engines before the implementation of more stringent standards as a way to avoid purchasing these vehicles and engines a year or two later when the more stringent emission standards apply.

In addition, the Department is proposing to add provisions that would require recordkeeping and reporting of the sale, for use in New Jersey, of MY 2007 and later HDDEs, but only in the event that the Federal 2007 requirements are not in effect.

A more detailed explanation of the proposed amendments follows.

N.J.A.C. 7:27-26

The Department is proposing to recodify at N.J.A.C. 7:27-28 those portions of N.J.A.C. 7:27-26 that relate only to the State's Heavy-Duty Diesel New Engine Requirements program, also referred to as the State's "HDDE program." Some sections in N.J.A.C. 7:27-26, such as the definitions at N.J.A.C. 7:27-26.1, contain language that relates to both the HDDE program and the OTC-LEV program. Accordingly, the Department proposes to delete the language relating only to HDDE program, and place it in new rules at N.J.A.C. 7:27-28.

The Department proposes to move the definitions of "diesel engine," "heavy-duty diesel engine," "ultra-small volume manufacturer" and "urban bus" from N.J.A.C. 7:27-26.1 to the proposed new definition rule at N.J.A.C. 7:27-28.1, with minor changes, as described more fully below. It also proposes to delete from N.J.A.C. 7:27-26.1 the definitions of "California standards," "CCR," and "certification application," and not include them in N.J.A.C. 7:27-28.1, as these terms are not used in either the existing N.J.A.C. 7:27-26 or the proposed new N.J.A.C. 7:27-28. The Department also identified an incorrect citation in the definition of "California Air Resources Board" or "CARB" and proposes to correct that citation. Finally, the Department proposes to delete from N.J.A.C. 7:27-26.1 the definitions of "heavy-duty engine" and "heavy-duty motor vehicle" as these terms are not used in either the OTC-LEV/NLEV program rules that will be retained at N.J.A.C. 7:27-26 or in proposed new N.J.A.C. 7:27-28.

The Department proposes to amend N.J.A.C. 7:27-26.2 Applicability, so that it no longer refers to the Department's HDDE program, but only to the OTC-LEV/NLEV program. The Department also proposes to remove the parenthetical label "OTC-LEV Program" from the titles of N.J.A.C. 7:27-26.3 through 26.7 since, with the removal of the provisions relating to the HDDE program, this label would no longer be needed.

The Department proposes to recodify N.J.A.C. 7:27-26.8, 26.9 and 26.10 as N.J.A.C. 7:27-28.3, 28.4 and 28.8, respectively, with minor amendments to the wording of the sections. It further proposes to delete N.J.A.C. 7:27-26.15(e)13 through 16, since those provisions were promulgated in connection with New Jersey's HDDE program and are not necessary to the OTC-LEV/NLEV program. The Department does not propose to move these provisions to the new N.J.A.C. 7:27-28 as it has determined that they are also not necessary to the HDDE program. That is, while these regulations are relied upon by the USEPA and CARB in their engine certification processes, it is not necessary for New Jersey to incorporate them herein by reference.

In light of the deleted portions of N.J.A.C. 7:27-26, the Department proposes to recodify N.J.A.C. 7:27-26.11, 26.15 and 26.16 as 7:27-26.8, 26.9 and 26.10, respectively, and delete the reservation of the N.J.A.C. 7:27-26.12 through 7:27-26.14 section citations.

N.J.A.C. 7:27-28.1. Definitions

As discussed above, the Department is proposing definitions of terms at N.J.A.C. 7:27-28.1. A number of these definitions were taken from the definitions at N.J.A.C. 7:27-26.1. The proposed definition of "heavy-duty diesel engine" is modified to reference a "heavy-duty diesel vehicle" as opposed to a "heavy-duty motor vehicle," thus eliminating the need to define an otherwise unnecessary term.

The Department also proposes to duplicate at N.J.A.C. 7:27-28.1, without change, the definitions of those terms that are used in connection with both the OTC-LEV/NLEV and the HDDE program rules, as follows: "business," "Department," "engine family," "established place of business," "gross vehicle weight rating" or "GVWR," "motor vehicle" or "vehicle," "motor vehicle engine," "person," "sale" or "sell," "State" and "ultimate purchaser." The Department proposes to duplicate at N.J.A.C. 7:27-28.1, with change from N.J.A.C. 7:27-26.1, the definitions of the term "California Air Resources Board" (or its acronym "CARB"), which is changed to correct the reference to California's Health and Safety Code; "diesel engine," which is changed to clarify that type of fuel is not relevant; and "model year" (or its acronym "MY"), which is changed mirror California's definition of this term as set forth in California's Health and Safety Code, Division 26, Part 1, Chapter 2, §39038.

The Department also proposes to define at N.J.A.C. 7:27-28.1 a number of terms essentially as it had defined similar terms at N.J.A.C. 7:27-26.1, including "certification" and "heavy-duty diesel vehicle." The definition of "certification" is essentially the same as the existing definition of "certified" at N.J.A.C. 7:27-26.1, but now refers to certification by both CARB and the USEPA and cites the relevant CARB and USEPA regulations. The definition of "heavy-duty diesel vehicle," a term not used in N.J.A.C. 7:27-26, matches the definition, with some grammatical modification, of "heavy-duty motor vehicle" at N.J.A.C. 7:27-26.1, but the new term specifically reflects that the vehicle is equipped with an HDDE. The Department also

proposes to define the term "new complete HDDV" essentially as it had defined the term "new motor vehicle" at N.J.A.C. 7:27-26.1, substituting the new term to more simply indicate that the requirements at proposed N.J.A.C. 7:27-28.3 apply to HDDVs equipped with an HDDE.

The Department also proposes to define a number of terms it did not define in N.J.A.C. 7:27-26.1. The Department proposes a definition of the new term "lease" to reflect its commonly accepted meaning. Finally, the Department proposes adding a definition of the term "recall" based on that provided by CARB in its rules at California Code of Regulations, Title 13, Division 3, Chapter 1, Article 1, §1900(b)(13), to reflect efforts to ensure that vehicles be corrected.

N.J.A.C. 7:27-28.2 Applicability

The proposed new applicability provision at N.J.A.C. 7:27-28.2 is based upon the portions of existing N.J.A.C. 7:27-26.2 that relate to the Department's HDDE program. The Department proposes to modify the HDDE program applicability provisions to conform them to the applicability implicit in the current provisions at N.J.A.C. 7:27-26.8 in order to clarify that the CARB certification requirements apply only to new complete HDDVs (that is, HDDVs already equipped with MY 2005 and later HDDEs) and MY 2005 and later HDDEs, whether or not they are mounted in an HDDV.

N.J.A.C. 7:27-28.3 Requirements for engine and vehicle transactions

The Department proposes to recodify the provisions of N.J.A.C. 7:27-26.8 as 28.3, and amend them to reflect that CARB certification is required for unmounted HDDEs, MY 2005 and later, and those mounted in new HDDVs. The existing N.J.A.C. 7:27-26.8(a)3 could be misinterpreted to imply that the CARB certification requirements also apply to existing or incomplete HDDVs, not just new complete ones.

N.J.A.C. 7:27-28.4 Exemptions and technology review

The Department proposes to recodify existing N.J.A.C. 7:27-26.9, with amendments, as N.J.A.C. 7:27-28.4. The proposed amendments would correct citations and make other grammatical improvements and would remove the exemptions currently at N.J.A.C. 7:27-26.9(a)3 and 4, which relate only to the OTC-LEV/NLEV program. The Department also proposes to remove the exemption currently at N.J.A.C. 7:27-26.9(a)8, which is outdated and thus not applicable to CARB's requirements regarding the certification of MY 2005 and later HDDEs.

The Department also proposes clarifying, at N.J.A.C. 7:27-28.4(a)1, that it is CARB's rules that determine if a MY 2005 or 2006 HDDE is exempt as either an engine manufactured by an ultra-small volume manufacturer or an engine installed in an urban bus. The Department proposes a new provision as N.J.A.C. 7:27-28.4(a)2 that would exempt a MY 2007 or later HDDE intended for use in an urban bus. While CARB does have a separate program that addresses urban buses, it is not part of the CARB 2007 rule that is the subject of this proposal, and the Department is, therefore, exempting these engines from its certification requirements.

Furthermore, the Department proposes to continue the exemptions for emergency vehicles and military tactical equipment, but proposes to articulate at N.J.A.C. 7:27-28.4(a)4 and

5 what these vehicles are. The description for emergency vehicle is based on the definition of that term in N.J.A.C. 7:27-14. The description of military vehicle and tactical equipment is based on the provisions of the California Code of Regulations at Title 13, Division 3, Chapter 1, Article 1, §1905, which define the exclusion and exemption of these heavy-duty diesel engines and vehicles.

N.J.A.C. 7:27-28.5, Recordkeeping and 28.6, Annual reporting

The Department proposes to add new recordkeeping and reporting requirements that would only apply in the event the existing Federal certification requirements for MY 2007 and later HDDEs are no longer in effect. Were that to occur, these proposed requirements would provide a useful enforcement and audit tool to ensure compliance with the Department's CARB certification requirements. This would be particularly important during the phase-in model years, that is, 2007 through 2009, during which time CARB's averaging, banking and trading provisions would be in effect. The proposed requirements would not be in effect for any model year for which the current or equally stringent future Federal certification requirements are in effect.

7:27-28.7 Prohibition against stockpiling

By proposing the stockpiling prohibitions at N.J.A.C. 7:27-28.7, the Department intends to address the potential for reduced rule effectiveness that could result from stockpiling. Without the proposed prohibition, there is the possibility that purchasers could circumvent the emission reduction requirements by buying extra older, higher-emitting engines or vehicles while they are still available, without violating the CARB certification requirements. This would allow them to meet their projected need for such engines or vehicles early, in order to avoid having to buy them a year or so later, when only the lower-emitting, cleaner engines and vehicles would be available. The proposed provisions would also prevent the sale of a new complete HDDV manufactured after April 1, 2007 unless it is equipped with a MY 2007 or later CARB-certified engine. Setting a compliance date later than December 31, 2006, is intended to smooth the transition and provide some latitude to truck manufacturers who may have in good faith overestimated their business need for these older engines.

N.J.A.C. 7:27-28.8 Manufacturer compliance with California orders and voluntary recalls

The Department proposes to recodify N.J.A.C. 7:27-26.10 as 28.8, with only minor grammatical changes. Both the existing rule and the proposed recodified rule would make any order, enforcement action or recall by CARB of the heavy-duty diesel engines and vehicles subject to this program applicable to all such engines and vehicles subject to New Jersey's HDDE program, unless, within 21 days of CARB's action, the manufacturer demonstrates to the Department's satisfaction, that the order, enforcement action or recall is not applicable to the engines or vehicles in question.

N.J.A.C. 7:27-28.9, Enforcement, and 28.10, Severability

The Department proposes these new rules, which are identical to the provisions at existing N.J.A.C. 7:27-26.11 and 26.16, respectively. New N.J.A.C. 7:27-28.9 would continue

to allow the Department to enforce the heavy-duty diesel new engine requirements. New N.J.A.C. 7:27-28.10 provides that the provisions of subchapter 28 will remain in effect, even if one or more provisions is held to be invalid.

Social Impact

The Department's requirement that MY 2007 and later HDDEs be CARB-certified would be clarified by the proposed amendments and new rules and will act as a backstop to the Federal 2007 rule requirements. The Federal 2007 rule will in turn aid the State in attaining and maintaining the NAAQS for ozone and the annual NAAQS for PM_{2.5} by reducing the in-use emissions of air contaminants from HDDVs. Diesel emissions contain NO_x which, in the presence of sunlight, reacts with other compounds in the ambient air to form ozone and other oxidants harmful to health. Ground level ozone is a major public health problem in New Jersey. Studies have proven that ozone, a known respiratory irritant, has severe and debilitating effects on lung capacity and can have detrimental effects on respiration. Even at low levels, ozone can cause the average person to experience breathing difficulty, chest pains, coughing and irritation to the nose, throat and eyes. For individuals who already experience respiratory problems or who are predisposed to respiratory ailments, these symptoms can become much more severe, forcing those individuals to alter their lifestyles to avoid unnecessary exposure. In addition, chronic ozone exposure studies performed on laboratory animals indicate that long-term exposure to ozone affects lung physiology and morphology. These studies suggest that humans exposed to ozone over prolonged periods of time can experience chronic respiratory injuries resulting in premature or accelerated aging of human lung tissue.

In addition to its participation in the formation of ozone, NO_x by itself causes serious human health effects. Although nitric oxide (NO) itself is a relatively nonirritating gas, it is readily oxidized to nitrogen dioxide (NO₂), which can damage respiratory defense mechanisms, allowing bacteria to proliferate and invade the lung tissue. NO_x causes irritation to the lungs, lower resistance to respiratory infections, and contributes to the development of emphysema, bronchitis, and pneumonia. NO_x also reacts chemically in the air to form nitric acid, which contributes to acid rain formation.

Heavy-duty diesel vehicles are also significant contributors of air toxics and PM, especially PM_{2.5}. The Department's concern with PM is primarily, but not exclusively, its negative impact on human health. PM is an irritant to the lungs and respiratory system and can cause irreversible damage if inhaled into the deeper regions of the lungs. Aside from its inherent irritant effects, PM also has the ability to adsorb other harmful compounds to it, potentially creating a substance more detrimental to human health than the PM alone. These factors have caused the USEPA to label PM a possible human carcinogen.

Because of PM's effects on human health, the USEPA established a National Ambient Air Quality Standard (NAAQS) for Total Suspended Particulate Matter (TSPM) in 1971. In 1987, the USEPA revised and redesignated the NAAQS for TSPM to a PM₁₀ standard, referring to particles with a diameter of 10 microns or less. This redesignation reflected the need for a particulate matter standard based on particle size, since smaller particles pose the greatest health risk. (Godish, Thad. Air Quality, 2nd Ed., (Chelsea, Michigan: Lewis Publishers)). Unlike the larger particles, PM₁₀ cannot be removed by the human respiratory system's filtering mechanisms prior to respiration and inhalation to the deepest regions of the lungs. The PM₁₀ becomes

embedded in the alveoli of the lungs and has been correlated with increased susceptibility to lung infection and other respiratory disorders.

While levels of PM are high in New Jersey, the air in this State currently does not exceed the NAAQS for PM₁₀. However, recent studies have revealed that diesel exhaust PM is generally significantly smaller than 10 microns in diameter; in fact, 90 percent of the particles were found to be less than one micron in size. Particles of this size are considered more hazardous to human health than their larger counterparts. Based on this hazard and other new information, the USEPA has added a NAAQS for PM_{2.5}, that is, a new national health standard for particles that are 2.5 microns or less in size. Meeting the annual NAAQS for PM_{2.5} is problematic in two New Jersey counties, and several other counties contribute to the problem. By continuing to address diesel emissions in New Jersey, the Department is acting proactively to increase the likelihood that the State will be able to attain the annual PM_{2.5} standard. Current studies show that in addition to the PM itself, diesel exhaust contains several categories of air toxins. Such toxins include polycyclic aromatic hydrocarbons, nitro-aromatic compounds, nitrated hydrocarbons and nitrocyclic aromatics. Several substances within these categories are known or suspected human carcinogens. Diesel exhaust is also suspected to be a source of polychlorinated dibenzo-dioxins and -furans, both of which are known to have carcinogenic properties, (Jones, Kay H., Diesel Truck Emissions, an Unrecognized Source of PCDD/PCDF Exposure in the United States. Risk Analysis, Vol. 13, #3. November 3, 1990.)

In addition, the toxic effect of PM may be due to the direct irritant effects of substances that are readily adsorbed onto the surface area of the particles. Adsorbed substances of particular concern include oxides of sulfur (SO_x), polycyclic aromatic hydrocarbons (PAHs), and heavy metals such as lead, cadmium, zinc and mercury. The PAHs include such compounds as benzo(a)pyrene and 1-nitropyrene, which are known carcinogens. Moreover, the particles themselves may have intrinsic toxic and carcinogenic properties. (Health Effects Institute, A Critical Analysis of Emissions, Exposure and Effects. Health Effects Institute, Cambridge, MA. April 1995.)

In addition to the irritating and intrinsic toxic and carcinogenic characteristics of the particles themselves, when the chemical compounds contained in diesel exhaust are emitted into and transported through the atmosphere, certain chemical and physical transformations occur, producing secondary compounds. These transformations can be induced by the presence of sunlight, ozone, hydroxyl radicals and/or nitrate radicals. These secondary compounds can be as, if not more, detrimental to human health as the primary components of diesel exhaust. Their presence can increase the toxicity and carcinogenicity of the primary constituents of diesel exhaust and lengthen the time the primary compounds remain in the ambient air. For example, PAHs react in the atmosphere with hydroxyl radicals in the presence of NO_x to form nitro-PAHs and oxygenated nitro-PAHs, which are often more mutagenic, carcinogenic and water-soluble than the parent PAHs. (Health Effects Institute, A Critical Analysis of Emissions, Exposure and Effects. Health Effects Institute, Cambridge, MA. April 1995.)

By ensuring the reduction of emissions of NO_x, PM and toxics throughout the State, the Federal 2007 rule will generally have a beneficial and positive impact on the State's residents by providing them with cleaner air and thus a healthier environment, particularly those who reside in areas with a high volume of diesel-powered motor vehicle traffic. By acting as a backstop to the Federal 2007 rule, the continuation of the Department's CARB certification requirements for

model years 2007 and beyond preserves this positive social impact for the residents of this State.

Additional analysis of the projected impacts of the Federal 2007 rule are available in The Regulatory Impact Analysis for the Federal 2007 rule – EPA420-R-00-010, July, 2000 and The Technical Support Document for the Federal 2007 rule: Air Quality Modeling and Analysis – EPA420-R-00-028, December, 2000.

Economic Impact

CARB's emission standards and supplemental test procedures for MY 2007 and later HDDEs are essentially identical to those adopted by the USEPA. The Department's adoption of the proposed CARB certification requirements would not, therefore, have an economic impact beyond that already generated by the requirements set forth in the Federal 2007 rule. However, as CARB did in its rulemaking, the Department is providing information regarding the impact of the underlying Federal rule for informational purposes only, as this impact is not attributable to the Department's proposed new rules and amendments.

The Federal 2007 standards will have an economic impact primarily on manufacturers of new HDDEs and HDDVs, as well as on those who purchase these vehicles. In the Staff Report: Initial Statement of Reasons (ISOR) that CARB prepared for its 2007 rulemaking, CARB identified 21 major engine manufacturers worldwide. Of that worldwide production, the Department has projected that in New Jersey approximately 3,400 to 3,500 new HDDVs may be affected each model year from 2007 through 2009, and 3,600 to 3,700 HDDVs may be affected beginning with the 2010 model year.

CARB has projected that certification of compliance with its standards may require additional or upgraded engine accessories. As a result, CARB-certified HDDEs may be more costly to manufacture, and hence HDDVs may cost more. The baseline average costs for an HDDE, an HDDV, and the operating costs based on a 30-year lifetime projected by CARB in its ISOR are shown in Table 1, with potential nationwide increases shown in Table 2.

Table 1 - Baseline Heavy-Duty Engine and Vehicle Costs

Heavy-Duty Class	Engine Cost	Vehicle Cost	Operating Cost
Light Heavy-Duty	\$ 8,995	\$ 25,952	\$ 14,357
Medium Heavy-Duty	\$ 14,300	\$ 53,199	\$ 36,028
Heavy Heavy-Duty	\$ 25,024	\$111,272	\$124,577

Source: USEPA's Final Regulatory Impact Analysis: Heavy Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements, December 2000. Costs are in year 2001 dollars.

Table 2 - Potential Nationwide Cost Increases for Transportation Businesses

Heavy-Duty Class	Increased Engine and Vehicle Cost (2007)	Increased Annual Operating Cost	Total Annualized Cost (20 year)
Light Heavy-Duty	\$ 2,095.00	\$ 43.36	\$ 241.11
Medium Heavy-Duty	\$ 2,705.00	\$ 80.10	\$ 335.44

Heavy Heavy-Duty \$ 3,405.00 \$ 321.78 \$ 643.19
 Source: USEPA’s Final Regulatory Impact Analysis: Heavy Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements, December 2000. Costs are in year 2001 dollars.

Note: These costs include low sulfur diesel fuel costs and the associated decrease in maintenance costs due to use of low sulfur diesel fuel.

As CARB indicated in its ISOR, since its emission standards and supplemental test procedures are identical to those in the Federal 2007 rule, there is no increase in costs for engine manufacturers to produce CARB-certified HDDEs. Again, while no costs are attributable to the Department's proposed new rules and amendments, the Department is providing information regarding the potential increase in engine costs due to the Federal 2007 rule. These costs are provided for information purposes only, as they are not attributable to the proposed rulemaking.

CARB estimated these costs based on the USEPA’s analysis for the Federal 2007 rule. The USEPA’s analysis includes not only costs to comply with identical emission standards and supplemental test procedures, but also costs for using low sulfur diesel fuel. The USEPA assumed that all engine manufacturers would utilize multiple technologies to satisfy the proposed requirements for MY 2007 and later medium- and heavy-duty engines. The technologies that are assumed to be used include a NO_x adsorber system, a catalyzed diesel particulate filter (DPF), a hydrocarbon (HC) and hydrogen sulfide (H₂S) clean-up catalyst, a closed crankcase system, and low sulfur diesel fuel. Additionally, the USEPA expected there to be a savings in maintenance costs due to the use of low sulfur diesel fuel. The USEPA included these costs and savings since, at the time of the analysis (and currently), the assumed technologies require the use of low sulfur diesel fuel. Using the assumed technologies results in the most conservative cost estimate, since manufacturers will likely use several of the technologies, in addition to averaged and banked emission credits, and does not account for improvements in technology. Assuming that engine manufacturers pass on the entire costs of the new Federal requirements to the end users, the USEPA estimated the incremental increase in per-engine price and overall lifetime operating costs. These cost estimates are presented in Table 3 and are identical to those determined by the USEPA.

Table 3 - Projected Additional Unit Costs per Engine

<u>Item</u>	HDDEs for HDDVs, 14,001 - 33,000 lbs GVWR			30-year net present value (NPV)
	<u>Fixed Cost</u>	<u>Variable Cost</u>	<u>Operating Cost</u>	
NOx Adsorber System	\$ 231.00	\$ 1,080.00	\$ 0.00	
Catalyzed DPF	\$ 98.00	\$ 852.00	\$ 56.00	
HC and H2S Clean-up Catalyst	\$ 0.00	\$ 261.00	\$ 0.00	
Closed Crankcase System	\$ 0.00	\$ 42.00	\$ 59.00	
Low Sulfur Diesel Fuel	\$ 0.00	\$ 0.00	\$ 1,077.00	
Maintenance Savings	\$ 0.00	\$ 0.00	\$ (249.00)	

NOTE: THIS IS A COURTESY COPY OF THIS RULE PROPOSAL. THE OFFICIAL VERSION WAS PUBLISHED IN THE DECEMBER 20, 2004, NEW JERSEY REGISTER. SHOULD THERE BE ANY DISCREPANCIES BETWEEN THIS TEXT AND THE OFFICIAL VERSION OF THE PROPOSAL, THE OFFICIAL VERSION WILL GOVERN.

TOTAL	\$ 329.00	\$ 2,235.00	\$ 943.00
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HDDEs for HDDVs, 33,001 lbs. and greater GVWR			30 yr NPV
<u>Item</u>	<u>Fixed Cost</u>	<u>Variable Cost</u>	<u>Operating Cost</u>
NOx Adsorber System	\$ 191.00	\$ 1,456.00	\$ 0.00
Catalyzed DPF	\$ 89.00	\$ 1,103.00	\$ 208.00
HC and H2S Clean-up Catalyst	\$ 0.00	\$ 338.00	\$ 0.00
Closed Crankcase System	\$ 0.00	\$ 49.00	\$ 218.00
Low Sulfur Diesel Fuel	\$ 0.00	\$ 0.00	\$ 3,969.00
Maintenance Savings	\$ 0.00	\$ 0.00	\$ (610.00)
TOTAL	\$ 280.00	\$ 2,946.00	\$ 3,785.00

Source: USEPA's Final Regulatory Impact Analysis: Heavy Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements, December 2000. Costs are in year 2001 dollars.

Note: costs shown in parentheses are negative costs, or cost savings.

The estimated costs are separated into incremental engine purchase price and annual operating costs. The incremental engine purchase price for new engines includes the fixed and variable costs. Fixed costs are costs associated with research and development, retooling, and certification. Variable costs are costs associated with hardware and assembly. Annual operating costs include any expected increases in maintenance and/or fuel consumption. The two studies of the economic impacts on HDDEs upon which the USEPA relied presented all costs in 1999 dollars. CARB recalculated these costs in 2001 dollars. The Department has not recalculated these costs in 2004 dollars. These estimated costs are expected to decrease over time due to decreased costs for mass production. CARB used the conservative costs shown above and an annual discount rate of 7.0 percent to produce a weighted average lifetime net present value (NPV) cost per engine of \$4,221.02.

CARB also determined that, if the entire hardware costs resulting from the Federal requirements were passed on to the consumer, heavy-duty vehicle retail prices would increase by approximately \$2,100 to \$3,400 per medium-duty and heavy-duty diesel vehicle. Further, operating costs are expected to increase by approximately \$500.00 to \$3,400 per medium-duty and heavy-duty diesel vehicle in present value over its lifetime. The operating cost increases are due to maintenance of the aftertreatment system, maintenance of the closed crankcase system, low sulfur diesel fuel, and additional maintenance savings. Based on the total cost increase, CARB calculated the cost effectiveness of the proposed reduced emission standards to range from \$0.29 to \$0.63 per pound of NO_x and NMHC emissions reduced and from \$3.03 to \$6.65 per pound of PM emissions reduced. This compares to the cost-effectiveness of California mobile source and motor vehicle fuels regulations adopted over the past decade that ranges from \$0.17 to \$2.55 per pound of ozone precursors (NO_x and NMHC) reduced and approximately \$17.90 per pound of PM reduced. Similar cost effectiveness figures are not available in New Jersey, but it is reasonable to assume that they are comparable to California's.

Table 2 - CARB's Estimated Price and Cost Increases for New On-Road Diesel Vehicles (per vehicle)

	<u>2007 MY</u>	<u>Operating Costs NPV (20 yr)</u>	<u>Annualized Total Cost</u>
Light Heavy-Duty	\$ 2,095.00	\$ 459.31	\$ 241.11
Medium Heavy-Duty	\$ 2,705.00	\$ 848.61	\$ 335.44
Heavy Heavy-Duty	\$ 3,405.00	\$ 3,408.96	\$ 643.19
<i>Weighted Average of All-Heavy-Duty</i>	<i>\$ 2,772.37</i>	<i>\$ 1,441.89</i>	<i>\$ 398.43</i>

Based on: USEPA's Final Regulatory Impact Analysis: Heavy Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements, December 2000. Costs are in year 2001 dollars.

The costs shown above are only for engines that are phased-in during the 2007 model year. Due to projected changes in purchasing, CARB projected that the weighted average costs will be slightly different (less than one percent) from year to year.

A more detailed explanation of the cost of compliance to the engine manufacturers, based on the USEPA's calculations, is provided by CARB in its Staff Report: Initial Statement of Reasons. This report is available at CARB's website at: <http://www.arb.ca.gov/regact/HDDE2007/HDDE2007.htm>.

However, counterbalancing the cost of compliance is the positive economic impact that these proposed amendments will have, in that the resulting air quality benefits from the implementation of the heavy-duty diesel new engine standards will reduce the substantial cost to the State and its citizens associated with air pollution. These costs include health care costs and the cost of damage to buildings, materials, crops and vegetation. Health care costs for air pollution-related illnesses in the United States are estimated to be on the order of \$50 billion per year. In addition, the American Lung Association estimates that, nationally, 182 million people face health threats from ground-level ozone alone. By decreasing the public's exposure to ozone, NO_x, PM_{2.5} and air toxics, these proposed rules would lessen these health care costs. Air pollutants also have a direct adverse effect on vegetation, livestock, and certain materials, such as rubber and glass. Although economic losses due to air pollution damage in these areas are difficult to quantify, since it is difficult to distinguish between natural deterioration and that which is caused by air pollutants, past estimates have indicated that losses from material damage alone have exceeded \$4 billion annually nationwide. (Godish, Thad. Air Quality, 2nd Ed., (Chelsea, Michigan: Lewis Publishers, Inc., 1991), p.207.)

Environmental Impact

Because CARB's emission standards and supplemental test procedures for MY 2007 and later HDDEs are essentially identical to those adopted by the USEPA, the Department's continuation of its CARB-certification requirements for model years 2007 and beyond would not have an environmental impact beyond that already generated by the requirements set forth in the

Federal 2007 rule. However, as it is the environmental benefit of the Federal 2007 rule that has prompted this national effort to ensure its continuation in force and effect, the Department offers the following analysis.

In the ISOR for its 2007 rule, CARB analyzed the air quality benefits of the Federal 2007 rule in California. Using the ratio of the MY 2007 emission standard and the pre-2007 (MY 2004) emission standard, CARB calculated the amount of emissions of criteria pollutants that would be reduced from the baseline emission inventory. CARB determined that, over the lifetime of a typical phased-in HDDV from the 2007 and subsequent model years, the average amount of emissions reduced would be 4.2 tons of NO_x plus NMHC per vehicle and 0.1 tons of PM per vehicle. As stated above, the Department has projected that in New Jersey alone approximately 3,400 to 3,500 new HDDVs may be affected each model year from 2007 through 2009, and 3,600 to 3,700 HDDVs may be affected beginning with the 2010 model year. In its analysis of the environmental impact of the Federal 2007 rule, the USEPA concluded that 10 nonattainment areas, including northern New Jersey, would need to rely in part on the reductions from the MY 2007 standards to attain the one-hour ozone standard by 2007 or 2010, and to maintain the standard from 2007/2010 and 2030. The USEPA also concluded that these MY 2007 standards would help states address the risk of non-attainment of the NAAQS for PM_{2.5}. The USEPA stressed the importance of this contribution in concluding that, in the period 2007 to 2030, when the MY 2007 standards will help reduce ambient PM_{2.5} concentrations, a significant portion of the United States population, including those living in New Jersey, may be exposed to ambient PM_{2.5} concentrations that studies have found may cause adverse health effects.

The impact of ground-level ozone and fine particulate matter is primarily upon human health and well-being. These effects are discussed at length in the Social Impact statement, above. In addition to human health effects, studies have shown that increased ozone levels damage foliage. One of the earliest and most obvious manifestations of ozone impact on the environment is this type of damage to sensitive plants. Subsequent effects include reduced plant growth and decreased crop yield. A reduction in ambient ozone concentrations will mitigate damage to foliage, fruits, vegetables and grain.

Decreased ozone levels will also result in less degradation of various man-made materials, such as rubber, plastics, dyes and paints. This degradation is caused by the oxidizing properties of ozone. However, if the photochemical production of ground-level ozone can be limited, as it will be with the implementation of the proposed amendments and new rules, this degradation will be significantly reduced.

Although ozone is well known for its damaging effects on the environment, NO_x can also independently cause significant environmental degradation. Oxides of nitrogen are the primary constituents involved in the deposition of air toxics, commonly referred to as acid rain, into lakes and coastal waters. Acid rain damages plants and trees, and injures aquatic life by acidifying lakes and streams.

At elevated concentrations, particulate matter can adversely affect not only human health, but also visibility, and materials. Components of particulate matter (for example, sulfuric or nitric acid) also contribute to acid deposition, nitrification of surface soils and water and eutrophication of surface water. Fine particles have been clearly associated with the impairment of visibility over urban areas and large multi-State regions. Fine particles, or major constituents thereof, also are implicated in materials damage, soiling and acid deposition.

By ensuring the application of the CARB and Federal standards for model year 2007 and beyond, the Department is continuing its efforts, begun with the enhanced diesel inspection and maintenance program, to decrease emissions of diesel exhaust from HDDVs into the atmosphere and benefit the environment of New Jersey.

Federal Standards Analysis

Executive Order No. 27 (1994) and N.J.S.A. 52:14B-1 et seq. (P.L. 1995, c. 65), require State agencies that adopt, readopt or amend State regulations that exceed any Federal standards or requirements to include in the rulemaking document a Federal Standards Analysis. The proposed new rules and amendments do not exceed Federal standards for HDDEs sold for use in New Jersey, as they are based on California's standards for these engines, which are identical to the existing Federal standards promulgated by the USEPA for these engines. (See 66 Fed. Reg. 5002, January 18, 2001.)

The proposed recordkeeping and reporting requirements at N.J.A.C. 7:27-28.5 and 6 will not go into effect so long as the Federal 2007 rule is in effect. In the event that the Federal 2007 rule is not in effect, however, the proposed recordkeeping and reporting requirements will affect engine and vehicle manufacturers and those who sell or lease a vehicle subject to these certification requirements. The proposed recordkeeping and reporting requirements are different from those currently imposed on engine and vehicle manufacturers by the USEPA, inasmuch as there are no parallel Federal reporting requirements for those who manufacture and sell these new HDDEs and HDDVs. The proposed recordkeeping and reporting requirements are necessary, though, because if the Federal 2007 rule is not in effect, then the USEPA will no longer audit or enforce compliance with the 2007 standards. Accordingly, New Jersey will need to enforce the standards within the State.

The proposed New Jersey rules require certification by CARB that CARB's requirements have been met. The proposed recordkeeping and reporting provisions of N.J.A.C. 7:27-28.5 and 28.6, which would be in effect only if the Federal 2007 rule is not in effect, require that the engine and vehicle manufacturers maintain and provide the Department with records demonstrating that they are in compliance with CARB's standards. Although CARB's recordkeeping and reporting requirements may differ somewhat from the proposed requirements, there should be minimal additional expense in complying with the proposed recordkeeping and reporting requirements, since the manufacturers must now demonstrate to CARB that they are in compliance with CARB's requirements.

Compliance with the proposed recordkeeping requirements for vehicle manufacturers may involve more effort than for engine manufacturers, insofar as they include keeping a record of the identity of the seller, first purchaser and the state in which the vehicle was first registered. The proposed requirements will not, however, require the hiring of experts or consultants in order to comply, but rather simple bookkeeping regarding sales. The Department does not anticipate vehicle or engine manufacturers to incur substantial costs to comply with the proposed recordkeeping and reporting requirements.

Similarly, those who sell or lease vehicles subject to the proposed subchapter will only be required to retain bookkeeping records, some of which they already keep. Any information that they do not currently keep should be readily available from the documents provided with the engines and the vehicles. They must also provide the purchaser with documentation indicating

that the engine or vehicle is CARB certified. This information is readily available from the documentation that the manufacturer has provided to the seller or lessor.

Jobs Impact

The Economic Impact statement above provides, for informational purposes only, a discussion of the costs that the USEPA and CARB anticipate will result from the implementation of California's standards for new HDDEs, MY 2007 and beyond, and the Federal standards on which they are based. Because the Department's proposed rulemaking does no more than reflect the current requirements for HDDEs, MY 2007 and beyond, there will be no impact on jobs in New Jersey resulting from the Department's proposed rulemaking. To the extent, however, that there are costs associated with the Federal requirements, each member of the regulated community will choose its own approach or combination of approaches to defray these costs. Examples of such approaches include decreasing the rate of growth of any of the following: other business expenditures; dividends and other distributions; and compensation to management and other employees. In addition, increased compliance costs could be passed on in the form of higher prices for goods and services sold by regulated companies. More specifically, entities purchasing HDDVs might cut back on their equipment investments, or their facility improvements, or reduce their workforce. On the other hand, some jobs may be created in research and development to enhance the design of current engine models and develop additional systems to reduce emissions from HDDEs. Currently, engine manufacturers lack significant experience with aftertreatment systems expected to be used for compliance. This may result in additional jobs from researchers, developers and manufacturers of aftertreatment systems. Some jobs may also be created in businesses manufacturing and distributing parts related to the aftertreatment systems. Some of these jobs may be created in New Jersey.

Agriculture Industry Impact

Pursuant to P.L. 1998, c. 48, adopted on July 2, 1998, the Department has evaluated this rulemaking to determine the nature and extent of the impact of the proposed new rules and amendments on the agriculture industry. The proposed new rules and amendments, regarding standards for new HDDEs, because they are identical to promulgated Federal requirements, will have no additional impact on the agriculture industry in New Jersey. In any event, to the extent that the Federal requirements have an impact on the New Jersey agriculture industry, they will have no greater impact upon the agriculture industry than on any other industry in New Jersey. That is, to the extent that farmers and other participants in the agriculture industry purchase new HDDVs, application of the Federal 2007 rule requirements may mean somewhat increased purchase costs, depending upon the extent to which the increased cost of producing compliant engines is passed on to the purchaser. In addition, they, like all other purchasers of such vehicles in New Jersey, would face an increased operation cost, as these vehicles may be somewhat more costly to fuel and operate. It should be noted that "non-road" heavy-duty farming equipment is not covered by this rulemaking and only the on-road vehicles used in agriculture to, for example, transport crops and other agriculture-related materials would be covered by these proposed amendments and rules.

Regulatory Flexibility Analysis

In accordance with the New Jersey Regulatory Flexibility Act, N.J.S.A. 52:14B-16 et seq., the Department has determined that the proposed new rules and amendments would not impose any additional compliance, reporting or recordkeeping requirements on small businesses (defined in the Regulatory Flexibility Act as those with fewer than 100 employees) except in the event that the Federal 2007 rule is not in effect, as discussed in the Federal Standards Analysis, above. There are no engine or vehicle manufacturers in New Jersey that meet the definition of small business. Some vehicle sellers or lessors, and some vehicle purchasers or lessees may fit the definition of small businesses.

In the event that the proposed recordkeeping and reporting requirements go into effect, no small business that sells or leases regulated engines or vehicles would be required to hire experts or consultants in order to comply with the recordkeeping or reporting requirements, or any other provision of the proposed rules. Instead, those who sell or lease vehicles subject to the proposed subchapter would only be required to maintain, and to provide to the purchaser documentation indicating that the engine or vehicle is CARB certified. This information is readily available from the documentation that the manufacturer provides to the seller or lessor.

Furthermore, the proposed new rules and amendments would not impose additional compliance requirements on small businesses selling or buying regulated vehicles or engines. That is, under the Federal 2007 rule only HDDVs that have been certified by the USEPA or CARB as meeting their identical standards are available for sale or purchase throughout the United States. In the event the Federal 2007 rule is not in effect, under the proposed rules only HDDVs that have been certified by CARB would be available for sale or purchase in New Jersey. Therefore, to require small businesses to purchase, lease, or sell only compliant vehicles places no additional requirement on them, as the sale, purchase, or lease of non-compliant vehicles would already be illegal.

The cost of compliance for such small businesses would presumably not differ from the cost borne by all other affected entities. The cost of purchasing a compliant vehicle cannot yet be determined and would depend upon how much of the increased cost of manufacture is passed on to the purchaser. Nor would small businesses need to employ professional services in order to comply with these requirements. These costs are discussed in greater detail in the Economic Impact statement above. As these increased compliance costs are not expected to be excessive or to fall disproportionately on these small businesses, no provision is being made to minimize their impact.

Smart Growth Impact

Executive Order No. 4 (2002) requires State agencies that adopt, amend or repeal State regulations to include in the rulemaking document a Smart Growth Impact statement that describes the impact of the proposed rule on the achievement of smart growth and implementation of the State Development and Redevelopment Plan (State Plan). The proposed rulemaking does not relate to the State's official land use and development policies in a way that would either encourage or discourage any development or redevelopment in this State contrary to the guiding principles of the State Plan. As a result, the Department does not expect this rulemaking to have an impact on the State's achievement of Smart Growth or the implementation of the State Plan.

Since the proposed rules amendments and new rules will help protect air quality, the proposed amendments and new rules support the conservation and environmental protection goals and policies underlying the State Plan.

Full text of the proposal follows (additions indicated in boldface **thus**; deletions indicated in brackets [thus]):

SUBCHAPTER 26. NATIONAL LOW EMISSION VEHICLE (NLEV) [AND HEAVY-DUTY DIESEL NEW ENGINE REQUIREMENTS] PROGRAM

7:27-26.1 Definitions

The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise.

...

"California Air Resources Board" or "CARB" means the agency **or its successor agency** established and empowered to regulate sources of air pollution in the State of California, including motor vehicles, pursuant to **section 39003**, California Health & Safety Code [Sections 39500 et seq.] **, 1999, as amended or supplemented.**

["California standards" means those emission standards for motor vehicles and new motor vehicle engines that the state of California has adopted and for which it has received a waiver from the United States Environmental Protection Agency pursuant to the authority of 42 U.S.C.A. Section 7543 and which other states are permitted to adopt pursuant to 42 U.S.C.A. Section 7507.

"CCR" shall mean the California Code of Regulations (Barclays, 1991).]

...

["Certification application" means the application and associated information that a motor vehicle manufacturer, a motor vehicle engine manufacturer or an air contaminant emission control system manufacturer submits to the California Air Resources Board in the process of applying for certification of a motor vehicle, motor vehicle engine, engine family or air contaminant emission control system.]

...

["Diesel engine" means a compression ignition type of internal combustion engine.]

...

["Heavy-duty diesel engine" means a diesel engine that is used to propel a heavy-duty motor vehicle.

"Heavy-duty engine" means an engine which is used to propel a heavy-duty vehicle.

"Heavy-duty motor vehicle" means a motor vehicle with a GVWR of 14,001 pounds or more.]

...

["Ultra-small volume manufacturer" means any manufacturer with cumulative California sales of new passenger cars, light-duty trucks, medium-duty vehicles, heavy-duty vehicles, and heavy-duty engines, that total no more than 300 per model year based on the average number of vehicles and engines sold by the manufacturer in the previous three consecutive model years.

"Urban bus" means a passenger-carrying vehicle powered by a heavy heavy-duty diesel engine, or of a type normally powered by a heavy heavy-duty diesel engine, with a load capacity of 15 or more passengers and intended primarily for intra-city operation, that is, within the confines of a city or greater metropolitan area. Operation of such vehicles is characterized by short rides and frequent stops. To facilitate this type of operation, more than one set of quick-operating entrance and exit doors would normally be installed. Since fares are usually paid in cash or token, rather than purchased in advance in the form of tickets, such vehicles would normally have equipment installed for the collection of fares. Such vehicles are also typically characterized by the absence of equipment and facilities for long distance travel, for example, restrooms, large luggage compartments, and facilities for stowing carry-on luggage.]

...

7:27-26.2 Applicability

(a) [N.J.A.C. 7:26.1 through 7, 26.11, 26.15 and 26.16 shall apply] **This subchapter applies** to all 1999 model year and subsequent model year [motor vehicles which are] passenger cars and light-duty trucks, motor vehicle engines in such motor vehicles, and air contaminant emission control systems for such motor vehicles and motor vehicle engines, otherwise referred to in this subchapter as "OTC-LEV program vehicles, engines and control systems."

(b) (No change.)

(c) Upon termination of the State's participation in the NLEV Program, the provisions of [N.J.A.C. 7:27-26.1 through 7, 26.11, 26.15 and 26.16] **this subchapter** shall apply to OTC-LEV program vehicles, engines, and control systems. [Notice] **In such event, the Department shall publish notice** of such termination [shall be published] in the New Jersey Register.

(d) Notwithstanding (a) above, the provisions of [N.J.A.C. 7:27-26.1 through 7, 26.11, 26.15 and 26.16 shall] **this subchapter do** not apply to OTC-LEV program vehicles, engines, and control systems unless the combined number of registrations of new motor vehicles in those states and the District of Columbia, excluding New Jersey, within the OTR that have enacted legislation or adopted rules and regulations establishing and implementing a low emission vehicle program for a motor vehicle model year not later than 1999, is equal to or greater than 40 percent of the total number of registrations of new motor vehicles in all of the states and the District of Columbia within the OTR.

[(e) N.J.A.C. 7:27-26.1, 26.8 through 26.11, 26.15 and 26.16 shall apply to all new heavy-duty motor vehicles which are equipped with 2005 and subsequent model year heavy-duty diesel engines.]

7:27-26.3 Prohibitions [(OTC-LEV Program)]

(a)–(e) (No change.)

7:27-26.4 Emission certification standards [(OTC-LEV Program)]

(a)–(e) (No change.)

7:27-26.5 Fleet average [(OTC-LEV Program)]

(a)–(b) (No change.)

7:27-26.6 Reporting and new motor vehicle dealer requirements [(OTC-LEV Program)]

(a)-(b) (No change.)

7:27-26.7 Additional requirements [(OTC-LEV Program)]

(a) (No change.)

(Agency note: N.J.A.C. 7:27-26.8, 26.9 and 26.10 are proposed for recodification with amendments as N.J.A.C. 7:27-28.3, 28.4 and 28.8, respectively.)

7:27- [26.11] **26.8** (No change in text.)

[7:27-26.12 through 26.14 (Reserved)]

7:27-[26.15] **26.9** Incorporation by reference

(a)-(d) (No change.)

(e) The following documents and sources are incorporated by reference within this subchapter:

1.-10. (No change.)

11. "Control of Air Pollution from New and In-Use Motor Vehicles and New and In-Use Motor Vehicle Engines: Certification and Test Procedures," 40 C.F.R. Part 86, Subparts A and B; **and**

12. 40 Code of Federal Regulations (CFR) Parts 51, 52 and 85[;].

[13. "California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel-Engines and Vehicles" adopted December 8, 2000, CARB;

14. 40 Code of Federal Regulations (CFR) Part 86, Subpart A, "General Provisions for Emission Regulations for 1977 and Later Model Year New Light-Duty Vehicles, Light-Duty Trucks, and Heavy-Duty Engines, and for 1985 and later Model Year New Gasoline-Fuel and Methanol Fueled Heavy-Duty Vehicles";

15. 40 Code of Federal Regulations (CFR) Part 86, Subpart I; "Emission Regulations for New Diesel Heavy-Duty Engines; Smoke Exhaust Test Procedure"; and

16. 40 Code of Federal Regulations (CFR) Part 86, Subpart N, "Emission Regulations for New Otto-Cycle and Diesel Heavy-Duty Engines; Gaseous and Particulate Exhaust Test Procedures."]

(f) (No change.)

7:27-[26.16] **26.10** (No change in text.)

SUBCHAPTER 28. HEAVY-DUTY DIESEL NEW ENGINE STANDARDS AND REQUIREMENTS PROGRAM

7:27-28.1 Definitions

The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise.

"Business" means an occupation, profession or trade; a person or partnership or corporation engaged in commerce, manufacturing, or a service; or a profit-seeking enterprise or concern.

"California Air Resources Board" or "CARB" means the agency or its successor agency established and empowered to regulate sources of air pollution in the State of California, including motor vehicles, pursuant to section 39003, California Health & Safety Code, 1999, as amended or supplemented.

"Certification" means a finding by CARB or the USEPA that a motor vehicle, motor vehicle engine, or air contaminant emission control system has satisfied the criteria for the control of specified air contaminants from motor vehicles, adopted by CARB or the USEPA, respectively, as set out in their respective regulations at Title 13, California Code of Regulations, as amended or supplemented, and 40 CFR Part 86, as amended or supplemented.

"Department" means the New Jersey Department of Environmental Protection.

"Diesel engine" means a compression ignition type of internal combustion engine, without regard to fuel type.

"Engine family" means the basic classification unit comprised of the engine and drive-train configuration selected by a manufacturer and used for the purpose of certification testing.

"Established place of business" means a place actually occupied either continuously or at regular periods for business use.

"Gross vehicle weight rating" or "GVWR" means the value specified by the manufacturer as the maximum design loaded weight of a single vehicle.

"Heavy-duty diesel engine" means a diesel engine that is used to propel a heavy-duty diesel vehicle.

"Heavy-duty diesel vehicle" means a motor vehicle with a GVWR greater than 14,000 pounds that is equipped with a heavy-duty diesel engine.

"Lease" means any commercial transaction recognized under the laws of this State as a means of creating a right to use a good and includes renting. It also includes offering to rent or lease.

"Military tactical vehicles and equipment" means those vehicles that CARB has designated as military tactical vehicles and equipment. CARB defines "military tactical vehicles and equipment" in Title 13, California Code of Regulations, section 1905, as amended or supplemented.

"Model year" or "MY" means the manufacturer's annual production period, which includes January 1 of a calendar year or, if the manufacturer has no annual production period, the calendar year. In the case of any vehicle manufactured in two or more stages, the time of manufacture shall be the date of completion of the chassis.

"Motor vehicle" or "vehicle" means every device in, upon, or by which a person or property is or may be transported otherwise than by muscular power, excepting such devices that run only upon rails or tracks and motorized bicycles.

"Motor vehicle engine" means an engine that is used to propel a motor vehicle.

"New complete HDDV" means a newly manufactured, ready-to-operate HDDV, equipped with an HDDE, offered for sale or lease by a manufacturer or dealer, the

equitable or legal title to which has never been transferred to the ultimate purchaser.

"Person" means an individual, public or private corporation, company, partnership, firm, association, society or joint stock company, municipality, state, interstate body, the United States, or any Board, commission, employee, agent, officer or political subdivision of a state, an interstate body or the United States.

"Recall" means the issuing of notices directly to consumers that vehicles in their possession or control should be corrected, and/or efforts to actively locate and correct vehicles in the possession or control of consumers.

"Sale" or "sell" means the transfer of equitable or legal title to a motor vehicle or motor vehicle engine to the ultimate or subsequent purchaser.

"State" means the State of New Jersey, unless otherwise specified.

"Ultimate purchaser" means, with respect to any new motor vehicle or new motor vehicle engine, the first person who in good faith purchases a new motor vehicle or new motor vehicle engine for purposes other than resale

7:27-28.2 Applicability

(a) Except as specifically provided herein, this subchapter applies to:

1. All new complete HDDVs sold or leased for use in this State that are equipped with a MY 2005 or later HDDE; and

2. All MY 2005 and later HDDEs sold or leased for use in this State.

7:27-[26.8]**28.3** Requirements for **engine and** vehicle transactions [(New HDDE Standards Program)]

(a) No person who is a resident of this State, or who operates an established place of business within this State, shall sell, lease, rent, import, deliver, purchase, acquire, receive or otherwise transfer in this State, or offer for sale, lease, or rental in this State (or attempt or assist in any of these actions) [any of the following types of motor vehicles or engines] **either a MY 2005 or later HDDE or a new complete HDDV equipped with a MY 2005 or later HDDE** that [are] **is** intended primarily for use or for registration in this State, unless [the manufacturer of the engine has received an Executive Order issued by] the California Air Resources Board [for such engine, certifying that the engine complies with the applicable exhaust emission standards under] **has issued an Executive Order certifying the engine as meeting all requirements of Title 13, section 1956.8 of the California Code of Regulations, as amended or supplemented, and the test procedures incorporated by reference therein that apply to the model year of the engine in question** [, incorporated herein by reference:

1. A 2005 or subsequent model year heavy-duty diesel engine;
2. A new motor vehicle equipped with a 2005 or subsequent model year heavy-duty diesel engine; or
3. A motor vehicle with a new 2005 or subsequent model year heavy-duty diesel engine].

(b) (No change.)

7:27-[26.9]**28.4** Exemptions and technology review [(New HDDE Standards Program)]

(a) Notwithstanding the provisions of N.J.A.C. [7:27-26.8] **7:27-28.3**, the requirements set forth at N.J.A.C. [7:27-26.8 through 26.11] **7:27- 28.3, 28.5 and 28.6** [shall] **do** not apply to:

1. A model year 2005 or 2006 heavy-duty diesel engine **that is exempt from CARB's certification requirements pursuant to Section 86.1370-2007B.4 of the California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel-Engines and Vehicles as either an engine** manufactured by an ultra-small volume manufacturer or **an engine installed in an urban bus;**

2. A model year 2007 or later heavy-duty diesel engine intended for use in an urban bus;

[2.] **3.** A heavy-duty diesel engine of a model year and engine family for which CARB has determined, based upon its technology review, that compliance with its heavy-duty diesel engine standards is not required;

[3. A vehicle acquired outside of New Jersey by a New Jersey resident for the purpose of replacing a vehicle registered to the resident which, while out of New Jersey, was stolen, or was damaged, or became inoperative, beyond reasonable repair; provided that such replacement vehicle is acquired within a reasonable amount of time following the time the previously owned vehicle was either stolen, damaged, or became inoperative;

4. A vehicle transferred by inheritance, or by a decree of divorce, dissolution, or legal separation entered by a court of competent jurisdiction;

[5.] **4.** [An emergency vehicle] **A heavy-duty diesel vehicle that is owned and operated by a county, municipality, fire district, or duly incorporated non-profit organization for first aid, emergency, ambulance, rescue, or fire-fighting purposes; or**

[6.] **5.** A [military tactical vehicle or equipment] **heavy-duty diesel vehicle owned by the United States Department of Defense and/or the United States military services and used in combat, combat support, combat service support, tactical or relief operations, or training for such operations and any heavy-duty diesel engine used in such a vehicle, including:**

i. any heavy-duty diesel engine or heavy-duty diesel vehicle that is excluded from regulation under 40 CFR Part 85, subpart R, section 85.1703, and exempted from regulations under the federal national security exemption, 40 CFR, subpart R, sections 85.1702(a)(2), 85.1704(b), 85.1708, and 85.1710, and

ii. any commercially available vehicle, for which a federal certificate of conformity has been issued under 40 CFR Part 86 [; or

[7. Any other vehicle exempted by the California Health and Safety Code, section 43656].

7:27-28.5 Recordkeeping

(a) In the event that the Federal certification requirements for MY 2007 and later HDDEs, promulgated by the USEPA on January 18, 2001 and codified at 40 CFR Part 86, are not in effect, the following shall apply:

1. Each manufacturer of any engine or vehicle subject to the requirements of this subchapter shall create and retain for a period of not less than five years from the date of manufacture records sufficient to determine whether the manufacturer is in compliance with each applicable requirement of this subchapter. For an engine, this includes, but is not limited to, the family designation, emission level to which each subject engine has been certified by engine identification number, the make and model year and horsepower rating. For a vehicle, this includes, but is not limited to, the make, model and model year and identification number of the vehicle in which the engine was installed by the manufacturer

and, by vehicle identification number, the identity of the seller, the first purchaser and the State in which the vehicle was first registered; and

2. Each person who sells or leases a vehicle subject to this subchapter shall provide a copy to the purchaser and retain for not less than three years from the date of sale or lease records sufficient to determine whether such seller or lessor is in compliance with the requirements of this subchapter. This includes, but is not limited to, the Certificate of Compliance for the engine installed in the vehicle, the Certificate of Origin of the vehicle and the vehicle registration for each applicable year.

(b) In the event that the USEPA subsequently promulgates Federal certification requirements for MY 2007 or any subsequent model year HDDEs at least as stringent as those the USEPA promulgated on January 18, 2001, the requirements for record keeping set forth in (a) above shall not be in effect for any such model year HDDE.

7:27-28.6 Annual reporting

(a) In the event that the Federal certification requirements for MY 2007 and later HDDEs, promulgated by the USEPA on January 18, 2001 and codified at 40 CFR Part 86 are not in effect at the start of MY 2007 or any subsequent model year, each manufacturer of any engine subject to the requirements of this subchapter shall submit to the Department, on or before July 1 of the year following the model year, a report demonstrating that such manufacturer has complied with all applicable requirements of this subchapter, including CARB's emission phase-in, averaging, banking and trading and early introduction incentives for the 12-month period running from April 1 of the model year to the following March 31. This report shall include all sales, leasing, registration and emissions certification data needed to verify an assertion of compliance. If the manufacturer is not in compliance, the report shall so state and shall include all information relevant to the noncompliance.

(b) In the event that the USEPA subsequently promulgates Federal certification requirements for MY 2007 or any subsequent model year HDDEs at least as stringent as those the USEPA promulgated on January 18, 2001, the requirements for annual reporting set forth in (a) above shall not be in effect for any such model year HDDE.

7:27-28.7 Prohibition against stockpiling

(a) No person shall purchase any HDDEs or HDDVs in excess of normal business needs for the purpose of evading the requirements of this subchapter.

(b) No person shall sell or lease a new complete HDDV that is manufactured after April 1, 2007, for use in this State, unless:

1. It is equipped with an engine certified by CARB as meeting all requirements of section 1956.8, Title 13, California Code of Regulations that apply to MY 2007 and later engines, and

2. The sale, lease or registration of such vehicle will not result in a violation of the phase-in, averaging, banking or trading or early incentive provisions of CARB's HDDE certification requirements.

7:27-[26.10]28.8 Manufacturer compliance with California orders and voluntary recalls [(New HDDE Standards Program)]

(a) Any order or enforcement action taken by the California Air Resources Board to correct noncompliance with any heavy-duty diesel engine requirements adopted by such Board [on December 8, 2000 shall be] **applicable to MY 2005 and later HDDEs applies** to all such engines and motor vehicles subject to this subchapter that are sold, leased, or rented, offered for sale, lease, or rental, or registered in New Jersey, except where the manufacturer demonstrates to the Department's satisfaction, within 21 days of issuance of such California Air Resources Board action, that this action is not applicable to such engines or vehicles in New Jersey.

(b) (No change.)

7:27-28.9 Enforcement

(a) The Department and its representatives have the right to enter and inspect any site, building, equipment, or vehicle, or any portion thereof, at any time, in order to ascertain compliance or non-compliance with the Air Pollution Control Act, N.J.S.A. 26:2C-1 et seq., this subchapter, any exemption, or any order, consent order, agreement, or remedial action plan issued, approved or entered into pursuant thereto. Such right includes, but is not limited to, the right to test or sample any materials, motor vehicles or motor vehicle engines or any emissions therefrom, at the facility, to sketch or photograph any portion of the site, building, vehicles or motor vehicle engines, to copy or photograph any document or records necessary to determine such compliance or non-compliance, and to interview any employees or representatives of the owner, operator or registrant. Such right is absolute and is not conditioned upon any action by the Department, except the presentation of appropriate credentials as requested and compliance with appropriate standard safety procedures.

(b) Any person who fails to comply with any of the obligations or requirements of this subchapter will be subject to an enforcement action pursuant to the provisions of N.J.S.A. 26:2C-19.

7:27-28.10 Severability

Each section of this subchapter is severable. In the event that any section, subsection or division is held invalid in a court of law, the remainder of this subchapter will continue in full force and effect.