6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 86

[AMS-FRL-9623-9]

Nonconformance Penalties for On-highway Heavy-Duty Diesel Engines

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of Proposed Rulemaking.

SUMMARY: EPA is proposing to make nonconformance penalties (NCPs) available to manufacturers of heavy-duty diesel engines in model years 2012 and later for emissions of oxides of nitrogen (NOx). In general, the availability of NCPs allows a manufacturer of heavy-duty engines (HDEs) whose engines fail to conform to specified applicable emission standards, but do not exceed a designated upper limit, to be issued a certificate of conformity upon payment of a monetary penalty to the United States Government. The proposed upper limit associated with these NCPs is 0.50 grams of NOx per horsepower-hour.

DATES: Comments: Comments on all aspects of this proposal must be received on or before April 4, 2012. See the SUPPLEMENTARY INFORMATION section on ``Public Participation" for more information about written comments.

Public Hearings: EPA will hold a public hearing on the following date: March 5, 2012. The hearing will start at 10 a.m. local time and continue until 5 p.m. or until everyone has had a chance to speak. See ``How Do I Participate in the Public Hearings?" below at VII. B. under the SUPPLEMENTARY INFORMATION section on ``Public Participation" for more information about the public hearings.

ADDRESSES: Submit your comments, to Docket EPA-HQ-OAR-2011-1000, by one of the following methods:

http://www.regulations.gov: Follow the on-line instructions for submitting comments.

E-mail: a-and-r-docket@epa.gov.

Fax: EPA: (202) 566-9744.

Mail: EPA: Air Docket, Environmental Protection Agency, EPA Docket Center, Mailcode: 2822T, 1200 Pennsylvania Ave., NW., Washington, DC 20460. Hand Delivery: EPA: EPA Docket Center, (Air Docket), U.S. Environmental Protection Agency, EPA West Building, 1301 Constitution Ave., NW., Room: 3334, Mail Code 2822T, Washington, DC. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA-HQ-OAR-2011-1000. See the SUPPLEMENTARY INFORMATION section on ``Public Participation'' for additional instructions on submitting written comments.

Docket: All documents in the docket are listed in the http://www.regulations.gov index. Although listed in the index, some information is not publicly available, e.g., confidential business information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy in the docket. Publicly available docket materials are available either electronically in http://www.regulations.gov or in hard copy at the following locations:

EPA: EPA Docket Center, EPA/DC, EPA West, Room 3334, 1301 Constitution Ave., NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m.,

Monday through Friday, excluding legal holidays. The telephone number for the Air Docket is (202) 566-1742.

FOR FURTHER INFORMATION CONTACT: Chuck Moulis, U.S. EPA, National Vehicle and Fuel Emissions Laboratory, 2000 Traverwood, Ann Arbor MI 48105; Telephone (734) 214-4826; Email moulis.charles@epa.gov.

SUPPLEMENTARY INFORMATION:

Regulated Entities

This proposed action would affect you if you produce or import new heavy-duty diesel engines which are intended for use in highway vehicles such as trucks and buses or heavy-duty highway vehicles. The table below gives some examples of entities that may have to follow the proposed regulations. But because these are only examples, you should carefully examine the proposed and existing regulations in 40 CFR part 86. If you have questions, call the person listed in the **FOR FURTHER INFORMATION CONTACT** section above.

Category	NAICS[a] Codes	Examples of potentially regulated entities
Industry	336112 336120	Engine and truck manufacturers.

[a] North American Industry Classification System (NAICS).

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I. Statutory Authority and Regulatory Background

A. Statutory Authority

Section 206(g) of the Clean Air Act (the Act), 42 U.S.C. 7525(g), allows EPA to promulgate regulations permitting manufacturers of heavy-duty engines (HDEs) or heavy-duty vehicles (HDVs) to receive a certificate of conformity for HDEs or HDVs that exceed a federal emissions standard, but do not exceed an upper limit associated with that standard, if the manufacturer pays a nonconformance penalty (NCP) established by rulemaking. Congress adopted section 206(g) in the Clean Air Act Amendments of 1977 as a response to a concern with requiring technology-forcing emissions standards for heavy-duty engines. The concern was if strict technology-forcing standards were

promulgated, then some manufacturers might be unable to comply initially and would be forced out of the marketplace. NCPs were intended to remedy this concern. The nonconforming manufacturers would have a temporary alternative that would permit them to sell their engines or vehicles by payment of a penalty. At the same time, conforming manufacturers would not suffer a competitive disadvantage compared to nonconforming manufacturers, because the NCPs would be based, in part, on money saved by the nonconforming manufacturer.

Under section 206(g)(1), NCPs may be offered for HDVs or HDEs. The penalty may vary by pollutant and by class or category of vehicle or engine. Section 206(g)(3) requires that NCPs:

- Account for the degree of emission nonconformity;
- Increase periodically to provide incentive for nonconforming manufacturers to achieve the emission standards; and
- Remove the competitive disadvantage to conforming manufacturers.

Section 206(g) authorizes EPA to require testing of production vehicles or engines in order to determine the emission level upon which the penalty is based. If the emission level of a vehicle or engine exceeds an upper limit of nonconformity established by EPA through regulation, the vehicle or engine would not qualify for an NCP under section 206(g) and no certificate of conformity could be issued to the manufacturer. If the emission level is below the upper limit but above the standard, that emission level becomes the “compliance level,” which is also the benchmark for warranty and recall

liability. The manufacturer who elects to pay the NCP is liable for vehicles or engines that exceed the compliance level in use. The manufacturer does not have in-use warranty or recall liability for emissions levels above the standard but below the compliance level.

B. Background Regarding Nonconformance Penalty Rules

Since the promulgation of the first NCP rule in 1985, subsequent NCP rules generally have been described as continuing "phases" of the initial NCP rule. The first NCP rule (Phase I), sometimes referred to as the "generic" NCP rule, established three basic criteria for determining the eligibility of emission standards for nonconformance penalties in any given model year (50 FR 35374, August 30, 1985). As described in section III. A. of this notice, we have determined that these criteria have been met for one manufacturer. (For regulatory language, see 40 CFR 86.1103-87.) The first criterion is that the emission standard in question must become more difficult to meet. This can occur in two ways, either by the emission standard itself becoming more stringent, or due to its interaction with another emission standard that has become more stringent. Second, substantial work must be required in order to meet the emission standard. EPA considers "substantial work" to mean the application of technology not previously used in that vehicle or engine class/subclass, or a significant modification of existing technology, in order to bring that vehicle/engine into compliance. EPA does not consider minor modifications or calibration changes to be classified as substantial work. Third, EPA must find that a manufacturer is likely to be noncomplying for technological reasons

(referred to in earlier rules as a "technological laggard"). Prior NCP rules have considered such a technological laggard to be a manufacturer who cannot meet a particular emission standard due to technological (not economic) difficulties and who, in the absence of NCPs, might be forced from the marketplace. As described in section III. A. of this notice, we have determined that this criterion has been met for one manufacturer. This manufacturer notified us late in 2011 that it would not have enough emission credits for its model year 2012 heavy heavy-duty engines.

The criteria and methodologies established in the 1985 NCP rule have since been used to determine eligibility and to establish NCPs for a number of heavy-duty emission standards. Phases II, III, IV, V, and VI published in the period from 1985 to 2002, established NCPs that, in combination, cover the full range of heavy-duty - from heavy light-duty trucks (6,000-8,500 pounds gross vehicle weight) to the largest diesel truck and urban bus engines. NCPs have been established for hydrocarbons (HC), carbon monoxide (CO), nitrogen oxides (NOx), and particulate matter (PM). The most recent NCP rule (67 FR 51464, August 8, 2002) established NCPs for the 2004 and later model year NOx standard for heavy-duty diesel engines (HDDEs). The NCP rulemaking phases are summarized in greater detail in the Interim and Proposed Technical Support Document for this rulemaking.

C. 2007 and 2010 NOx Standards

The 0.20 g/hp-hr NOx standard that applies for current and future heavy-duty engines was adopted January 18, 2001 (66 FR 5001), and first applied in the 2007 model year. However, because of phase-in provisions adopted in that rule and use of emission credits generated by manufacturers for early compliance, manufacturers have been able to continue to produce engines with NOx emissions greater than 0.20 g/hp-hr. The phase-in provisions ended after model year 2009 so that the 0.20 g/hp-hr NOx standard was fully phased-in for model year 2010. Equally important, the cap applicable to Family Emission Limits (FELs)[1] for credit using engine families was lowered to 0.50 g/hp-hr beginning in model year 2010. Because of these changes that occurred in model year 2010, the 0.20 g/hp-hr NOx emission standard is often referred to as the 2010 NOx emission standard, even though it applied to engines as early as model year 2007.

While some manufacturers retain NOx emission credits that currently allow them to produce engines with NOx emissions as high as 0.50 g/hp-hr, we expect that one of these manufacturers could exhaust their supplies of credits in the near future.

[1] FELs serve are emission levels specified by the manufacturer that serve as the applicable emission standard for engines participating in the emission averaging program. The FEL cap is the highest FEL to which a manufacturer may certify an engine using emission credits.

II. Interim Final Rule

EPA is also publishing an Interim Final Rule (IFR) addressing NCPs for heavy heavy-duty engines. The NCPs in the Final Rule for this NPRM are expected to supersede the NCPs being promulgated in that Interim Final Rule. For example, if the Final Rule is published September 14, 2012, it would likely have an effective date of November 13, 2012. Should the Final Rule establish different NCPs for heavy heavy-duty engines than the interim NCPs, we could apply those new NCPs to any engines produced on or after November 13, 2012, instead of the interim NCPs.

Note that Docket Number EPA-HQ-OAR-2011-1000 is being used for both the Interim Final Rule and this NPRM.

III. Nonconformance Penalties for 2012 and Later Heavy-Duty Engines and Heavy-Duty Vehicles

A. NCP Eligibility: Emission Standards for Which NCPs are being Established in this Interim Final Rule

(1) Heavy Heavy-Duty Diesel NOx Standard

As discussed in section I.B., EPA must determine that three criteria are met in order to determine that an NCP should be established in any given model year. For the 2010 NOx standard, we believe these criteria have been met for heavy heavy-duty diesel engines and it is therefore appropriate to establish NCPs for this standard beginning in the current model year.

The first criterion requires that the emission standard in question must become more difficult to meet. This is the case with the 2010 NOx standard. The previous emission standard for this category is a combined NMHC+NOx standard of 2.4 g/hp-hr, or optionally a 2.5 g/hp-hr NMHC+NOx with a limit of 0.5 g/hp-hr NMHC.[2] The 2010 (i.e., current) standards are 0.20 g/hp-hr for NOx and 0.14 g/hp-hr for NMHC. When promulgated, the Agency concluded that the 0.20 g/hp-hr NOx standard was a technology forcing standard. Second, all heavy heavy-duty diesel engines currently certified to the 0.20 g/hp-hr standard without using credits are using new aftertreatment systems to meet this standard.[3] It is therefore logical to conclude the standard is more difficult to meet and that substantial work was required to meet the emission standard.

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[2] NMHC stands for non-methane hydrocarbons, which is a measure of total hydrocarbons with the methane emissions subtracted out. For typical on-highway diesel fueled heavy-duty engines, methane emissions are on the order of 10 percent of the total hydrocarbon emissions.

[3] For this proposed rule, EPA describes those manufacturers that have achieved the 0.20 g/hp-hr emission standard as "compliant" or "complying" manufacturers, and those that have not as the "noncompliant" or "noncomplying" manufacturers. However, it is important to clarify that manufacturers certifying above the 0.20 g/hp-hr NOx

Third, EPA is promulgating NCPs for heavy heavy-duty diesel engines because we have concluded that there is a significant likelihood that they will be needed by an engine manufacturer that has not yet met the requirements for technological reasons. One manufacturer is currently using NOx credits to certify all of its heavy heavy-duty diesel engines at nearly the FEL cap level of 0.50 g/hp-hr. Based on its current credit balance and projected sales for this service class, we do not expect this manufacturer to have sufficient credits to cover its entire model year 2012 production. This manufacturer intends to use a different technology to meet the NOx standard but has not yet submitted an application for the 2012 model year with NOx emissions at or below the 0.20 g/hp-hr standard. Since it has not yet submitted an application for certification for any model year 2012 heavy heavy-duty diesel engines that would not require emission credits, we believe it is a reasonable possibility that this manufacturer may not be able to comply for technological reasons with respect to the 2010 NOx standards for heavy heavy-duty diesel engines. This manufacturer notified us late in 2011 that it would not have enough emission credits for its model year 2012 heavy heavy-duty engines.

(2) Medium Heavy-Duty Diesel NOx Standard

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emission standard using emission credits are in compliance with regulations as long as they have enough emission credits to offset their total NOx emissions above the standard.

EPA believes that the first two NCP criteria have also been met for medium heavy-duty diesel engines. We have also determined that there is a significant chance that NCPs will be needed by an engine manufacturer that has not yet met the 2010 NOx standards for medium heavy-duty diesel engines for technological reasons. As is true for heavy heavy-duty engine, one manufacturer is currently using NOx credits to certify all of its medium heavy-duty diesel engines above 0.20 g/hp-hr. This manufacturer intends to use a different technology to meet the NOx standard but has not yet submitted an application for any upcoming model year with NOx emissions at or below the 0.20 g/hp-hr standard. Since it has not yet submitted an application for certification for any model year medium heavy-duty diesel engines that would not require emission credits, we believe it is prudent to promulgate NCPs given the possibility that this manufacturer may not be able to comply for technological reasons with respect to the 2010 NOx standards for medium heavy-duty diesel engines before it exhausts its supply of emission credits for medium heavy-duty engines.

B. NCP Eligibility: Emission Standards for Which NCPs are not Proposed

(1) Light Heavy-Duty Diesel NOx Standard

EPA believes that the first two NCP criteria have been met for the 2010 NOx standard for light heavy-duty diesel engines. However, we have not determined that any

manufacturer of light heavy-duty diesel engines will be unable to certify to the 2010 NOx standard through use of emission credits until it develops emissions controls that allow its light heavy-duty diesel engines to achieve NOx emissions at or below 0.20 g/hp-hr.

(2) Heavy- Duty Gasoline Engine Standards

In a final rule published on January 18, 2001 (66 FR 5001), EPA established more stringent emission standards for all heavy-duty gasoline (or "Otto-cycle") vehicles and engines. These standards took two forms: a chassis-based set of standards for complete vehicles under 14,000 pounds GVWR (the chassis-based program), and an engine-based set of standards for all other Otto-cycle heavy-duty engines (the engine-based program). Each of the two programs has an associated averaging, banking, and trading (ABT) program. The new standards generally took effect starting with the 2008 model year, and all manufacturers are in compliance with them.

(3) Heavy-duty Diesel Engine NMHC, CO, and PM Standards

EPA adopted new NMHC and PM for model year 2007 and later heavy-duty engines in the same rule that set the 2010 NOx emission standard (66 FR 5001, January 18, 2001). The CO standard was not changed. We are not considering NCPs for any of these other standards because all manufacturers are already fully compliant with them.

(4) Heavy-duty CO2 Standards

In a final rule published on September 15, 2011 (76 FR 57106), EPA established new CO2 emission standards for all heavy-duty vehicles and engines. We are not considering NCPs for any of these standards at this time because we currently do not have a basis to conclude that a technological laggard is likely to develop.

We are proposing to add a new regulatory provision related to these CO2 emission standards. The provision would prohibit generating CO2 emission credits from engines paying NCPs for NOx. Given the general tradeoff between CO2 and NOx emissions, we were concerned that a manufacturer capable of meeting the 0.20 g/hp-hr NOx emission standard could choose to pay an NCP in order to generate CO2 credits by recalibrating its engines for higher NOx emissions and lower CO2. There are two reasons this would be inappropriate. First, emission credits are supposed to provide an incentive for a manufacturer to go beyond what is normally required to meet emission standards. However, allowing manufacturers to generate CO2 credits while paying NCPs would actually create an incentive for manufacturers to do less than is required to meet the emission standards. Equally important, NCPs have always been intended for manufacturers that cannot meet an emission standard for technological reasons rather than manufacturers choosing not to comply.

IV. Penalty Rates

This proposed rule is the most recent in a series of NCP rulemakings. These are referred to as Phases and are referenced below.4 The discussions of penalty rates in those rulemakings are incorporated by reference. This section briefly reviews the penalty rate formula originally promulgated in the Phase I rule (currently found at 40 CFR 86.1113-87) and discusses how EPA arrived at the proposed penalty rates.

The penalty rates being established in this rule rely on the existing NCP regulatory structure. Thus, the only changes being made to the regulations are updates to the cost parameters to reflect the compliance costs for the 2010 standards, setting of the upper limit, and clarifying in §86.1104-91 that EPA may set the upper limit at a level below the previous standard if we determine that the lower level is achievable by all engines.

The NCP rates being proposed are specified for model year 2012. As required by the Clean Air Act, the existing regulations include a formula that increases the penalty rates with each new model year. We proposed to apply this annual adjustment formula to the NCPs by setting the 2012 model year as year number one. Traditionally, NCPs are available the first year of the new emission standard and that becomes year one for purposes of the annual escalator. However,EPA believes the 2012 model year is the correct year for the first year of the escalator calculation even though the NOx emission standard began in 2010.

4 The previous NCP rules include: the Phase VI rulemaking (67 FR 51464, August 8, 2002), Phase V rulemaking (61 FR 6949, February 23, 1996), Phase IV rulemaking (58 FR 68532, December 28, 1993), Phase III rulemaking (55 FR 46622, November 5, 1990), the Phase II rulemaking (50 FR 53454, December 31, 1985) as well as the Phase I rulemaking (50 FR 35374, August 30, 1985).

A. Parameters

As in the previous NCP rules, we are specifying the NCP formula for each standard using the following parameters: COC_{50}, COC_{90}, MC_{50}, F, and UL. The NCP formula is the same as that promulgated in the Phase I rule. As was done in previous NCP rules, costs consider additional manufacturer costs and additional owner costs, but do not consider certification costs because both complying and noncomplying manufacturers must incur certification costs. COC_{50} is an estimate of the industry-wide average incremental cost per engine (references to engines are intended to include vehicles as well) associated with meeting the standard for which an NCP is offered, compared with meeting the upper limit. COC_{90} is an estimate of the 90th percentile incremental cost per-engine associated with meeting the standard for which an NCP is offered, compared with meeting the associated upper limit. Conceptually, COC_{50} represents costs for a typical or average manufacturer, while COC_{90} represents costs for the manufacturers with the highest compliance costs.

MC_{50} is an estimate of the industry-wide average marginal cost of compliance per unit of reduced pollutant associated with the least cost effective emission control technology installed to meet the new standard. MC_{50} is measured in dollars per g/hp-hr for heavy-duty engines. F is a factor used to derive MC_{90}, the 90th percentile marginal cost of compliance with the NCP standard for engines in the NCP category. MC_{90}

defines the slope of the penalty rate curve near the standard and is equal to MC_{50} multiplied by F. UL is the upper limit above which no engine may be certified.

The derivation of the cost parameters is described in a support document entitled "Interim and Proposed Technical Support Document: Nonconformance Penalties for 2012 and later Highway Heavy-Duty Diesel Engines," which is available in the public docket for this rulemaking. All costs are presented in 2011 dollars.

(1) Upper Limit

We are proposing to revise the regulations in §86.1104-91 to clarify that EPA may set (during rulemaking) the upper limit at a level below the previous standard if we determine that the lower level is achievable by all engines. We would also specify that EPA could set the upper limit at a level above the previous standard in unusual circumstances, such as those that occurred for heavy heavy-duty engines with the 2004 standards. As described below, we are also establishing the upper limit for this NCP rule at 0.50 g/hp-hr. These are the only regulatory changes being made with respect to the upper limit.

The upper limit is the emission level established by regulation above which NCPs are not available and a heavy duty engine cannot be certified or introduced into commerce. CAA section 206(g)(2) refers to the upper limit as a percentage above the emission standard, set by regulation, that corresponds to an emission level EPA

determines to be “practicable.” The upper limit is an important aspect of the NCP regulations not only because it establishes an emission level above which no engine may be certified, but it is also a critical component of the cost analysis used to develop the penalty rates. The regulations specify that the relevant costs for determining the COC_{50} and the COC_{90} factors are the difference between an engine at the upper limit and one that meets the applicable standards (see 40 CFR 86.1113-87).

The regulatory approach adopted under the prior NCP rules sets the default Upper Limit (UL) at the prior emission standard when a prior emission standard exists and is then changed to become more stringent. EPA concluded that the upper limit should be reasonably achievable by all manufacturers with vehicles in the relevant class. It should be within reach of all manufacturers of HDEs or HDVs that are currently allowed so that they can, if they choose, pay NCPs and continue to sell their engines and vehicles while finishing their development of fully complying engines. A manufacturer of a previously certified engine or vehicle should not be forced to immediately remove an HDE or HDV from the market when an emission standard becomes more stringent. The prior emissions standard generally meets these goals because manufactures have already certified their vehicles to that standard.

In the past, EPA has rejected suggestions that the upper limit should be more stringent than the prior emission standard because it would be very difficult to identify a limit that could be met by all manufacturers. For this rule, however, all manufacturers are currently certifying all of their engines at or below the 0.50 g/hp-hr FEL cap. Thus,

since NCPs were not intended to allow manufacturers to increase emissions, we are setting the upper limit for this NCP rule at 0.50 g/hp-hr NOx. This will conform to the purpose of NCPs, which is to allow manufacturers to continue selling engines they are producing, but not to allow backsliding.

(2) Cost Parameter Values

The regulations being adopted specify that the values in Table 1 (in 2011 dollars) be used in the NCP formula for the 2012 and later model year NOx standard of 0.20 g/hp-hr for diesel heavy-duty engines. The basis is summarized here. The complete derivation of these parameters is described in the Interim and Proposed Technical Support Document for this rulemaking. We request comment on our estimates of these parameters.

We also considered other methodologies for estimating the incremental compliance costs between the upper limit and the standard. We rejected these alternatives because we are not confident that we could estimate the costs with sufficient accuracy or describe our basis without revealing confidential business information. Moreover, we have no reason to believe that these alternative methodologies would have been better with respect to the statutory requirement to remove the competitive disadvantage of the complying manufacturers.

(a) General Methodology

Based on our review of the various hypothetical baseline engine designs, we selected a straightforward "baseline engine" technology package with associated costs that were determinable within a reasonably high degree of certainty. This approach best limited the sensitivity of the penalty rate versus small variations in any of the "baseline engine" technology package elements. This cost stability mitigated the hypothetical nature of the "baseline engine" technology package, which, in turn, led to a penalty rate that we believe is reasonable. As is described in the TSD, we believe estimating costs by this approach is the least speculative method to determine compliance costs.

We selected a baseline engine technology package that would employ the same basic emission controls used to meet the 2007 NOx and PM emission standards (e.g. cooled exhaust gas recirculation), optimized turbo-charging, optimized fuel injection, diesel particulate filters), plus liquid urea based Selective Catalytic Reduction (SCR) NOx emissions control technology with an appropriately sized tank for the diesel exhaust fluid (DEF). Further details are provided in this rule's TSD. While EPA selected the baseline engine (or upper limit engine) to be a fully optimized, SCR-equipped engine that complies with all other emission standards and requirements, the NCPs may be used for engines using other technologies.

This approach differs slightly from that used In previous NCP rules, where EPA based the NCPs directly on an average of actual compliance costs for all manufacturers. This was appropriate in those prior rules because each of the manufacturers had actually

produced engines at the upper limit (which was usually the previous emission standard). It was relatively straightforward for them to provide us with a confidential engineering analysis of the costs they actually incurred: the real costs of additional hardware and fluids and the differences in performance characteristics. We have always sought full understanding of the manufacturers' inputs, and for previous NCP rules it was also reasonable for EPA to conclude that the manufacturers' input accurately reflected the manufacturers' actual costs because the costs were derived directly from actual in-production engine information. In the case of this NCP rule, however, compliant manufacturers have not designed and optimized in-production engines for the U.S. market at 0.50 g/hp-hr NOx (the upper limit). Thus, a compliance cost estimate based directly on actual experience for in-production engines was not available for this NCP rule.

Instead of averaging actual costs (because none were available), the NCP penalty formulas for this rule are based primarily on EPA's estimate of the cost difference between an engine emitting at the upper limit (the "baseline engine") and one emitting at the standard (the "compliant engine"). We requested cost of compliance information from several engine manufacturers and used that information to inform our own analysis of compliance costs, as described in the Interim and Proposed Technical Support Document. The engine manufacturers we contacted approached this cost analysis in the same way we did. That is, the scenarios we and the manufacturers considered were all based upon hypothetical baseline engine designs that were intended to meet the 0.50 g/hp-hr NOx upper limit.

It is worth noting that each of the five engine manufacturers we contacted considered hypothetical baseline engines with different technology packages. Two complying manufacturers based their compliance costs on a baseline engine equipped with similar (but not identical) hardware as EPA; another on an SCR-equipped engine without exhaust gas recirculation, and a fourth on its estimation of the non-complying engines produced by a competitor. All four manufacturers meeting the 0.20 g/hp-hr NOx standard compared the costs for their hypothetical baseline engines to the costs for their actual compliant engines. The one non-SCR manufacturer we contacted (that has not yet certified any engines with NOx emissions at 0.20 g/hp-hr) provided its projections of what it will spend to bring its current 2011 engine into compliance without the use of emission credits.

(b) Calculated Values

The most significant of the NCP parameters is the 90th percentile costs of compliance, COC90, which defines the penalty for engines emitting at the upper limit. The value of COC50 only matters when EPA estimates that marginal compliance costs change as the compliance level approaches the standard. In such cases, COC50 defines that point on the curve at which the slope changes. We estimated COC90 and COC50 by assuming the baseline engine would have been an SCR equipped engine with NOx emissions at 0.50 g/hp-hr and that it looked very similar to an engine with NOx emissions at 0.20 g/hp-hr. However, the higher NOx emissions of the baseline engine would allow

the use of less expensive hardware and would require less consumption of liquid urea (also known as diesel emission fluid or “DEF”).

We estimated the marginal costs of compliance as being equal to the total incremental costs of compliance divided by 0.30 g/hp-hr (the difference between the upper limit and the standard). This assumes that the cost to reduce emissions from 0.30 g/hp-hr to 0.20 g/hp-hr is not significantly different from the cost to reduce emissions from 0.50 g/hp-hr to 0.40 g/hp-hr. This results in a penalty curve hor heavy heavy-duty engines that is a straight line, which in turn makes our estimate of the average cost of compliance irrelevant to the calculation of the penalty. In other words, the COC50 point lies directly between zero cost at 0.20 g/hp-hr and COC90 at the Upper Limit of 0.50 g/hp-hr NOx. The penalty paid for engines at the upper limit would be equal to EPA’s estimate of the highest marginal cost paid by a complying manufacturer for the same emission range.

Table 1: Proposed NCP Calculation Parameters

Parameter	Medium Heavy-Duty Diesel Engines	Heavy Heavy-Duty Diesel Engines
COC_{50}	$462	$1,561
COC_{90}	$682	$1,919
MC_{50}	$ 1,540 per gram per horsepower-hour	$5,203 per gram per horsepower-hour
F	1.30	1.23
UL	0.50 g/hp-hr	0.50 g/hp-hr

(3) Resulting Penalties

The calculation parameters listed in Table 1 are used to calculate the penalty rate. These parameters are used in the penalty rate formulas which are defined in the existing NCP regulations (See 40 CFR 86.1113(a)(1) and (2)). Using the parameters in Table 1, and the equations in the existing NCP regulations, we have plotted penalty rates versus compliance levels in Figure 1 and Figure 2 below. This penalty curve is for the first year of use of the NCPs (i.e., the annual adjustment factors specified in the existing NCP regulations have been set equal to one).

The Clean Air Act NCP provisions require that the penalty be set at such a level that it removes any competitive disadvantage a complying manufacturer by requiring non-complying manufacturers to pay NCPs. Our methodology for developing the NCP is detailed in the Interim and Proposed Technical Support Document. Our technology approach includes relatively minor hardware upgrades, calibration changes, and increased use of DEF. For the reasons described in the Interim and Proposed Technical Support Document, we believe that the NCPs being established in this rulemaking will remove any competitive disadvantage that complying manufacturers may face.

Figure 1

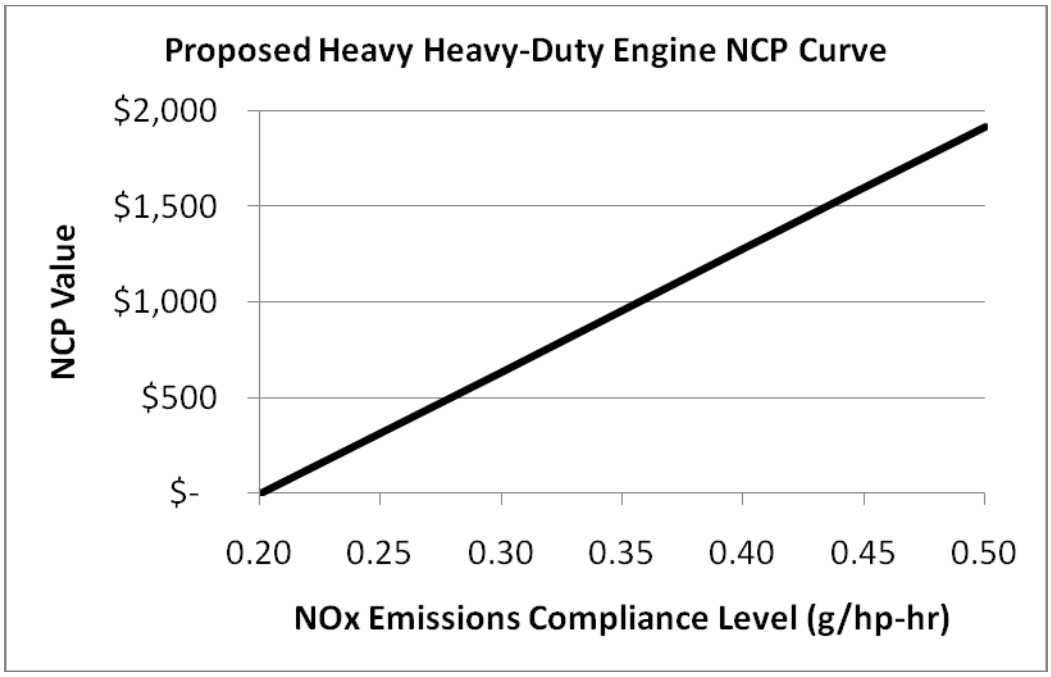
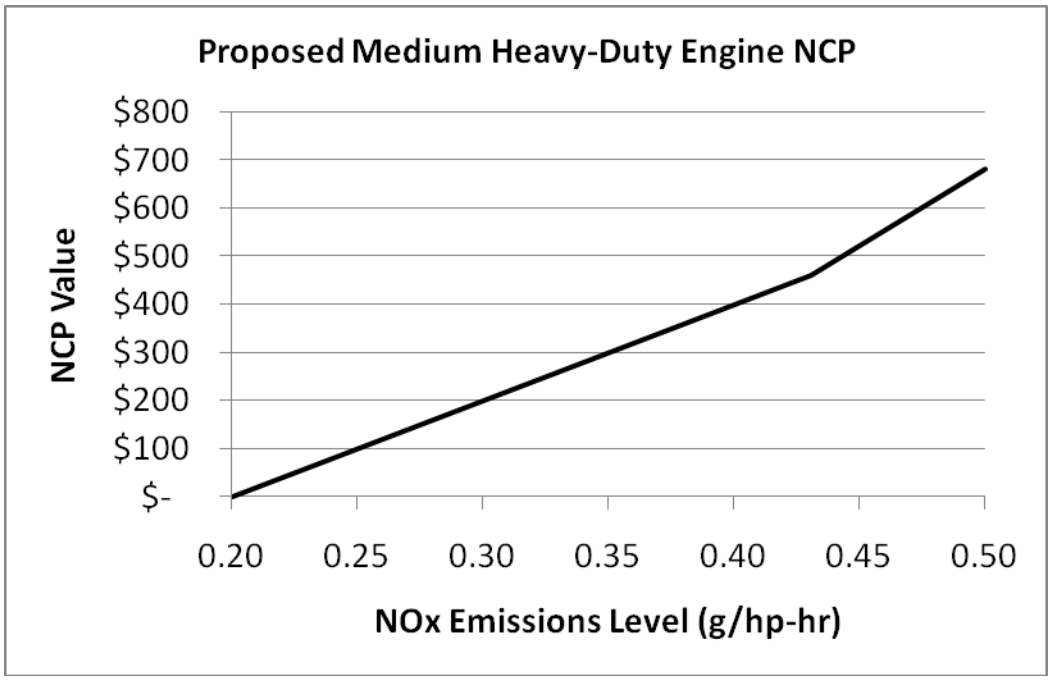


Figure 2



B. Issues and Alternatives for NCPs

The analysis presented in detail in the Interim and Proposed Technical Support Document deals with an assessment of the cost of compliance, using essentially the same methodology that has historically been used to establish NCPs. We believe that our estimates of the costs are appropriate and that the methodology is sound. As noted earlier, section 206(g)(3) specifies certain requirements for NCPs. The requirements for the NCP to account for the degree of emission nonconformity, and to increase periodically have been built into the regulatory structure such that they are automatically achieved with each new phase of NCPs. However, the Clean Air Act also requires EPA to set the NCPs 'to remove any competitive disadvantage to manufacturers whose engines or vehicles achieve the required degree of emission reduction.' This section discusses several issues and alternatives that we have evaluated, especially in the context of this third requirement.

(1) Competitive Advantage for Non-Complying Manufacturers

In establishing prior NCP rules, we have frequently made it clear that satisfying the statutory objective of protecting the complying manufacturer was paramount. The generic NCP rule established an approach which attempts to remove any competitive disadvantage to complying manufacturers by assessing a cost to the manufacturer of a non-complying engine in the form of an NCP, with the expectation that this cost is at least equivalent to or exceeds the value of the competitive benefit gained by building a

noncomplying engine. Imposing such a cost is a way to level the playing field without interfering in the actual marketing or pricing of the engines. However, since the issue of competitive advantage involves many subjective factors, the regulatory structure cannot by itself ensure that no competitive advantage remains.

A manufacturer of a non-complying engine generally gains a competitive advantage or benefit of two types. The first typically involves production expenses saved by not producing a complying engine, such as fixed costs and hardware costs. The second category involves, in some cases, the competitive benefits gained by producing an engine that has some convenience or better performance characteristics compared to a complying engine.

The first category is easier to quantify, as it involves considering costs directly incurred by the industry, and it is generally easier to get a fuller quantification of amounts in categories such as hardware costs. The second category is much harder to quantify with certainty. As discussed with respect to DEF and fuel consumption, the actual amount of costs or savings to the operator will vary based on several factors. An even harder to quantify competitive advantage is the benefit in the marketplace from producing an engine that is, or may be perceived to more convenient to operate.

The factors that affect the issue of whether the proposed NCP would remove competitive disadvantage involve the purchase price, operating cost, and purchaser perception. Even with an NCP set at a level which addresses quantifiable cost differences between complying and non-complying engines, in the eyes of the purchaser there still may be an advantage to paying the higher first cost for an engine (including the NCP) with known performance.

It is clear that producing engines that comply with a 0.20 g/hp-hr NOx emission standard is more difficult than producing comparable engines with NOx emissions at 0.50 g/hp-hr. Thus it can be presumed that allowing a manufacturer to produce engines with NOx emissions at 0.50 g/hp-hr without paying an NCP would bestow some competitive advantage. The question for this rulemaking is how significant is that advantage? To answer this question, we included an analysis of the heavy-duty truck and engine sales over the past four years. As described in the Interim and Proposed Technical Support Document, the available data do not directly answer this question because of a number of confounding factors. Nevertheless, since these data do not show any substantial shift in market share, it seems unlikely that the competitive advantage that exists is very large. This analysis supports our conclusion that the penalty being adopted is large enough to meet the statutory requirement to remove any competitive disadvantage for complying manufacturers. We request comment on this conclusion.

(2) Baseline Engine Technology

Most manufacturers generally have never had production engines at 0.50 g/hp-hr (the upper limit). Therefore, EPA considered different types of baseline engines. As already noted, we are assuming the baseline engine is already equipped with SCR. Conceptually, what we are doing in this rule is to imagine what would have happened if the prior standard had been 0.50 g/hp-hr. Conversations with manufacturers have generally supported our assumption that had there been a 0.50 g/hp-hr standard, most manufacturers would have chosen to rely on SCR to reduce NOx emissions, especially in the context of the recently adopted greenhouse gas emission standards.

Another important reason we are not assuming a non-SCR baseline engine is that there is only one manufacturer producing such an engine. We are concerned that we would need to rely on confidential business information (CBI) from that one non-SCR manufacturer in order to accurately calculate costs differences, but could not reliably protect such data from disclosure. Normally when we rely on CBI, we collect it from multiple manufacturers and protect the CBI by disclosing only an aggregated summary of the data. Public commenters can comment on the summary, which frequently serves the basis of the rule.

Another disadvantage of assuming a non-SCR baseline engine is that the complying manufacturers did not produce such an engine. Thus they would be unable to provide accurate data for the difference in operating costs between their complying engines and the theoretical baseline engine. Nevertheless, while they generally did not sell SCR engines at 0.50 g/hp-hr, they have development data that allow them to estimate

differences in operating costs between a theoretical SCR-equipped baseline engine and their compliant engines.

Another advantage of assuming the baseline engine is equipped with SCR is that it results in a penalty curve that is consistent with the marginal costs of compliance for all NOx values between 0.50 g/hp-hr and 0.20 g/hp-hr.

We request comment on our assumption of a baseline engine with SCR that is calibrated to have NOx emissions at 0.50 g/hp-hr. Commenters should address whether assuming a different baseline engine would result in higher or lower penalties, and whether they would better protect the complying manufacturers from a competitive disadvantage.

(3) Costs Not Included

By basing the NCP primarily on the differences in amount of DEF used to reduce emissions and minor hardware costs, the analysis excludes certain other costs, which are described below. Commenters supporting the inclusion of any of these costs should discuss them in the context of the statutory requirement to eliminate competitive disadvantage and whether the costs are associated with other savings or benefits.

Perhaps the most obvious cost not included in the analysis is the significant cost of the SCR hardware itself. However, including this cost would be inconsistent with the

baseline engine. Commenters supporting the inclusion of the total hardware costs should do so in the context of changing the baseline engine. For example, it would be important to consider the extent to which SCR hardware cost is offset by significantly lower fuel costs for engines equipped with SCR. We do not believe that we could base the NCP on the cost of SCR hardware without also accounting for the fuel savings.

We are also not including significant fixed costs for research and development (R&D). As noted earlier, the analysis assumes the baseline engine is a fully optimized engine that complies with all other emission standards and requirements. We do not believe that there would be significant R&D costs to recalibrate the SCR system on such an engine to further reduce NOx emission to 0.20 g/hp-hr.

(4) Projected Fuel and DEF Costs

Two of the most significant categories of potential cost are the impact of the standards on DEF and/or fuel consumption rates. However, such cost elements are challenging to estimate because actual DEF and fuel costs will vary based on prices and on the vehicle operation. We, therefore, are requesting comment on our estimates. Specifically, we are requesting comments on the following aspects of our analysis of fuel and DEF costs:

- Projected fuel and DEF prices
- Estimated changes in fuel and DEF consumption rates

• Projected annual mileage accumulation rates and miles per gallon

• Discounting of future costs (discussed in the following section)

For the NCP analysis, we used the Energy Information Administration's (EIA) Annual Energy Outlook 2011(AEO2011) to project fuel prices through 2035.[5] AEO2011 contains diesel fuel price projections for the transportation sector through 2035. These fuel prices include federal and state taxes, but do not include county or local taxes. Fuel price varies with time and with location. This is compounded by differences in state and local taxes. This regional variability could potentially impact our analysis. Some trucks may operate locally in an area that has fuel prices significantly higher than the national average. However, we believe that the number of these trucks will be relatively small, and thus did not include a regional fuel price component in our analysis. Nevertheless, we request comment on this issue.

AEO2011 includes five price scenarios – a reference, high oil price, low oil price, high economic growth and low economic growth case. Typically, EPA uses the reference case in our analysis of mobile source rules, and we used that scenario in this proposal, but we welcome comment supporting the use of one of the alternative scenarios.

The annual diesel price per gallon values used in this analysis were adjusted from 2009 dollars (as supplied in AEO2011) to 2011 dollars based on the Consumer Price

[5] U.S. Energy Information Administration. Annual Energy Outlook 2011. Last accessed on November 18, 2011 at http://38.96.246.204/forecasts/aeo/.

Index. The annual fuel price projections are included in Appendix A of the Technical Support Document.

DEF prices vary depending on the geography and whether it is purchase by the bottle, by the gallon, or in bulk. Unlike the case for fuel prices, we are not aware of a source which projects a national average DEF cost into the future. For this analysis we used a DEF cost of $2.99 per gallon based on the national retail pump average in November 2011.[6] We are using a constant value for the DEF price throughout the analysis because we are not aware of any reliable projections that the price will change significantly in the coming years. We welcome comment on our DEF cost projections.

A change in fuel consumption due to the reduction in NOx emissions would drive a change in fuel costs for this rule. However, as discussed in the Interim and Proposed Technical Support Document, we are estimating that the 0.50 g/hp-hr baseline engine and the fully compliant engine will have the same fuel consumption rates. The two primary reasons for this are the relative importance operators place on keeping fuel consumption rates low for the customer and the upcoming GHG emission standards. The Heavy-Duty GHG rule requires that manufacturers reduce their CO_2 emissions/fuel consumption starting in 2014 model year by an average of three to five percent from a baseline 2010 model year engine. Thus, a pathway to reduce NOx that leads to an increase in fuel consumption in 2012 model year would require the manufacturer to apply technologies to recover the increase by 2014 model year. Therefore, our analysis is based on a

[6] DieselExhuastFluid.com. Last accessed on November 14, 2011 at http://www.dieselexhaustfluid.com/.

technology path that does not change the engine-out NOx emissions, and therefore does not impact the fuel consumption of the engine.

Our cost analysis is based on a technology path that reduces tailpipe NOx emissions from the baseline engine with 0.50 g/hp-hr NOx to 0.20 g/hp-hr NOx by increasing DEF consumption. In the Interim and Proposed Technical Support Document, we detail the calculation of the ideal DEF consumption rate change required to reduce NOx emissions by 0.30 g/hp-hr. For the proposal, we calculated an ideal DEF rate increase of 0.38 gallons per 100 gallons of fuel consumed and increased it by five percent to account for overdosing. The proposed NCP costs include DEF consumption costs based on an increase in DEF consumption of 0.40 gallons per 100 gallons of fuel consumed.

Another important factor in estimating DEF and fuel cost is how much fuel a model year 2012 vehicle will use over its lifetime. This is most important for heavy-heavy duty engines. Some vehicles may be scrapped after their useful life (435,000 miles) while others may be rebuilt more than once and not be scrapped until after 2 million miles. Thus, the fuel cost could vary by a factor of four from one vehicle to another. For this analysis, we used the projected mileage accumulation rates generated by the Motor Vehicle Emissions Simulator, more commonly called MOVES, EPA's official mobile source emission inventory model.[7] These annual vehicle miles travelled (VMT) projections are shown in Appendix A of the Interim and Proposed Technical

[7] Information regarding the MOVES model can be found at http://www.epa.gov/otaq/models/moves/index.htm

Support Document and include a projection of vehicle survival fractions that are based on scrappage rates. The lifetime mileage estimates that we used in our analysis are shown in Table 2 below. The Interim and Proposed Technical Support Document contains more information about how we used these mileage estimates. We welcome comments on the lifetime mileage of trucks used in our analysis.

Table 2: Lifetime Vehicle Miles Travelled

	Lifetime VMT for Average Vehicle
Medium Heavy-Duty Vehicle	372,684
Heavy Heavy-Duty Vehicle	965,095

Finally, our methodology for calculating the cost of changes in fuel and DEF consumption uses estimates of average miles driven per gallon of fuel used. The estimates used in this proposal are 9.71 and 4.93 miles per gallon (mpg) for medium and heavy-heavy duty, respectively.[8] We used these same estimates for both the COC_{50} and COC_{90} analyses. Using different estimates could significantly change the projected costs. We request comment on these mpg estimates.

8 U.S.EPA. Final Rulemaking to Establish Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles – Regulatory Impact Analysis. Page 6-2. The baseline fuel efficiency for HHD is 20.3 gal/100 mile and vocational diesel vehicles equal 10.3 gal/100 mile.

(5) Discounting Future Costs

All of the compliance costs in this analysis are presented in terms of net present value (NPV) for calendar year 2012. This means that costs that occur before 2012 are adjusted upward, and costs that occur after 2012 are adjusted downward to reflect the time or opportunity value of the money involved. (i.e., discounted).

The NPV analysis requires that all in-use operating costs be adjusted downward to reflect the time value of money for future costs. More specifically, the stream of operating costs must be discounted to make them equivalent to costs incurred at the time of purchase. Truck purchasers would use this approach before purchase when comparing future operating costs of two or more engines before purchase. We used a seven percent discount rate for these costs as well. However, there is evidence in other contexts that users might apply a different discount rate than seven percent when considering future operating costs during a purchase decision. We request comment on whether there is evidence to support the application of such an alternative discount rate to operating costs in the various segments of the heavy duty engine market. Your comments in support of an alternative discount rate should include a discussion of the supporting economic and business rationale for the alternative rate.

It is commonly stated that truck purchasers only consider operating costs that will occur in the first five years (or less) of the truck's life. We also request comment on whether we should include discounted costs for all future years. For example, should we limit our consideration of operating costs to only those that will occur within the first five

years?

(6) F Factor

The parameter F is defined in the existing regulations as a value from 1.1 to 1.3 that describes the ratio of the 90th percentile marginal cost (MC90) to MC50. For this proposal, we calculated F by first calculating an MC90 in the same way that we calculated MC50. We then calculated the value of F that would give these values of MC90, and then set F equal to MC90 divided by MC50. This led to F values of 1.48 for medium heavy-duty and 1.23 for heavy heavy-duty. However, since F is capped at 1.3 under the regulations, we were required to set F equal to 1.3 for medium heavy-duty engines. This resulted in a penalty curve that is inverted from the normal shape. For most NCP curves, the slope of the penalty rate is greater for compliance levels less than X than it is for compliance levels greater than X. However for the proposed medium heavy-duty NCP curve, the opposite is true; the slope of the penalty rate is less for compliance levels less than X than it is for compliance levels greater than X. We request comment on whether this should be allowed. More specifically, should we modify the regulations to specify that the product of MC50 and F cannot be less than COC90 divided by the difference between the upper limit and the standard. In the case of the proposed NCPs, this would mean setting F at 1.48 for medium heavy-duty.

(7) First Year of the Escalator Adjustment Factor for NCP Calculation

As required by the Clean Air Act, the existing regulations include a formula that increases the penalty rates with each new model year. We have proposed to apply this formula to the NCPs beginning with the 2013 model year by setting the 2012 model year as year number one. Traditionally, NCPs are available the first year of the new emission standard and that becomes year one for purposes of the annual escalator. However, due to the availability of emission credits for 2010 and 2011, it did not become apparent that there might be a manufacturer who might need NCPs until late in the 2011 model year. Under these circumstances, EPA believes the 2012 model year is the correct year for the first year of the escalator calculation even though the NOx emission standard began in 2010. However, there may be reasons to consider model year 2010 or some other model year as the first year for this annual escalator. We welcome comments on alternative first year model years.

(8) Alternative Penalties

Historically, NCPs are defined solely in terms of a dollar amount, with payment of the NCP in the form of cash payments paid directly to the U.S. Treasury. We are asking for comment on whether we could or should also include a non-monetary value as an option in the definition of the noncompliance penalty. For example, assume a manufacturer's penalty would be $1,919 per engine for 10,000 engines ($19,190,000 total), based on certification of engines to an FEL of 0.50 g/bhp-hr, 0.30 g/bhp-hr above the standard. Should there be an option where the penalty could be defined as the amount of NOx emission reductions that would not be achieved by the engine compared to the applicable standard? Achieving these reductions would then be the payment of the NCP as defined under this option. The Agency is considering including this option in Final Rule as a way to recover the environmental loss due to the higher emissions of the NCP engines.

One example of such an approach would be to require a manufacturer to comply with all of the provisions of the NCP regulations but to define the penalty that must be paid in terms of recouping environmental loss of a defined amount of tons of NOx reduction, rather than a penalty that must be paid in terms of a cash payment. The manufacturer would need to:

• Calculate the total excess NOx emissions expected from the NCP engines over their lifetimes, including emissions that would occur beyond the useful life period. This calculation would be done consistent with the analyses described in the Interim and Proposed Technical Support Document for this rulemaking.

• Develop a plan to offset these NOx tons. The plan must demonstrate that the emissions reduction would not have otherwise occurred.

• Obtain EPA approval of the plan prior to production of the NCP engines.

• Demonstrate to EPA that the emission reductions actually occur.

• Demonstrate that the cost to the manufacturer of achieving the emissions reductions is at least as great as the dollar amount of the NCP that would otherwise be applicable.

The certificate issued for such engines would be conditioned on the manufacturer fulfilling all of these requirements. We could void a certificate ab initio if a manufacturer failed to fulfill these requirements.

We welcome comment on any legal, practical, competitive, or other concerns regarding using such an approach and how such an approach could be implemented in the regulations. Commenters supporting this option should address how to determine the equivalent amount of NOx reductions. Based on uncertainty in determining actual tons of NOx that are reduced, should they be set slightly above the excess tons of expected lifetime NOx emissions that will occur from the engines certified using NCPs? We believe that, in order to meet the statutory requirement to remove the competitive disadvantage for complying manufacturers, it would be necessary to require that the burden associated with providing NOx tons must be at least as large as the cash payment that would otherwise be required. Thus we would not approve an alternative in which it was cheaper for a manufacturer to obtain NOx tons than to pay the cash penalty, unless the manufacturer could demonstrate that there was some other non-financial burden that offset any competitive advantage.

V. Economic Impact

Because the use of NCPs is optional, manufacturers have the flexibility and will likely choose whether or not to use NCPs based on their ability to comply with emissions standards. If no manufacturer elects to use NCPs, these manufacturers and the users of their products will not incur any additional costs related to NCPs. NCPs remedy the potential problem of having a manufacturer forced out of the marketplace due to that

manufacturer's inability to conform to new, strict emission standards in a timely manner. Without NCPs, a manufacturer which has difficulty certifying HDEs in conformance with emission standards or whose engines fail a Selective Enforcement Audit (SEA) has only two alternatives: fix the nonconforming engines, perhaps at a prohibitive cost, or prevent their introduction into commerce. The availability of NCPs provides manufacturers with a third alternative: continue production and introduce into commerce upon payment of a penalty an engine that exceeds the standard until an emission conformance technique is developed. Therefore, NCPs represent a regulatory mechanism that allows affected manufacturers to have increased flexibility. A decision to use NCPs may be a manufacturer's only way to continue to introduce its products into commerce.

VI. Environmental Impact

When evaluating the environmental impact of this rule, one must keep in mind that, under the Act, NCPs are a consequence of enacting new, more stringent emissions requirements for heavy duty engines. Emission standards are set at a level that most, but not necessarily all, manufacturers can achieve by the model year in which the standard becomes effective. Following International Harvester v. Ruckelshaus, 478 F. 2d 615 (D.C. Cir. 1973), Congress realized the dilemma that technology-forcing standards could potentially cause, and allowed manufacturers of heavy-duty engines to certify nonconforming vehicles/engines upon the payment of an NCP, under certain terms and conditions. This mechanism was intended to allow manufacturer(s) who cannot meet technology-forcing standards immediately to continue to manufacture nonconforming

engines while they tackle the technological problems associated with meeting new emission standard(s). Thus, as part of the statutory structure to force technological improvements without driving manufacturers or individual engine models out of the market, NCPs provide a flexibility that fosters long-term emissions improvement through the setting of lower emission standards at an earlier date than could otherwise be feasible. Because NCPs are designed to increase with time, manufacturers using NCPs are likely to reduce emission levels to meet the standard as quickly as possible, which minimizes the environmental impact.

As is always the case with NCPs, the potential exists for there to be more extensive use of NCPs beyond what may be expected to be used by the manufacturer that we believe will need them. For example, depending upon the penalty rate and other factors, some otherwise fully compliant manufacturers could elect to pay the NCP in order to reconfigure their 0.20 g/hp-hr NOx compliant engines to emit up to 0.50 g/hp-hr so that they can re-optimize engine hardware and vehicle operating costs. This potential action is not without R&D and other financial costs to the manufacturer and thus is not a decision which would be taken lightly, given the short-term nature of the NCPs allowed for in this interim final rule. Furthermore, we believe that any such impacts would be short-term and self-limiting in nature because the NCP annual adjustment factor, established via prior NCP rules, increases the levels of the penalties over time and based on the extent of the use of NCPs by all manufacturers. In other words the NCP program is structured such that the incentives to produce engines that meet the standard increase year-by-year and increase upon NCP use. The practical impact of this adjustment factor is that the NCPs will rapidly become an undesirable option for all manufacturers that may elect to use them. However, while we expect their use to be limited, we have no way of

predicting at this time how many manufacturers will make use of the NCPs, or how many engine families would be subject to the NCP program. Because of these uncertainties we are unable to accurately quantify the potential impact the NCPs might have on emission inventories, although, as stated above, any impacts are expected to be short-term and self-limiting in nature.

VII. Public Participation

We request comment by April 4, 2012.on all aspects of this proposal. This section describes how you can participate in this process.

A. How Do I Submit Comments?

We are opening a formal comment period by publishing this document. We will accept comments through April 4, 2012. If you have an interest in the program described in this document, we encourage you to comment on any aspect of this rulemaking. We request comment on various topics throughout this proposal.

Your comments will be most useful if you include appropriate and detailed supporting rationale, data, and analysis. If you disagree with parts of the proposed program, we encourage you to suggest and analyze alternate approaches to meeting the goals described in this proposal. You should send all comments, except those containing

proprietary information, to our Air Docket (see Addresses) before the end of the comment period.

If you submit proprietary information for our consideration, you should clearly separate it from other comments by labeling it "Confidential Business Information." You should also send it directly to the contact person listed under FOR FURTHER INFORMATION CONTACT instead of the public docket. This will help ensure that no one inadvertently places proprietary information in the docket. If you want us to use your confidential information as part of the basis for the final rule, you should send a non-confidential version of the document summarizing the key data or information. We will disclose information covered by a claim of confidentiality only through the application of procedures described in 40 CFR part 2. If you do not identify information as confidential when we receive it, we may make it available to the public without notifying you.

B. Will There Be a Public Hearing?

We will hold a public hearing at the National Vehicle and Fuels Emission Laboratory in Ann Arbor, Michigan on March 5, 2012. The hearings will start at 10:00 am and continue until everyone has had a chance to speak.

If you would like to present testimony at a public hearing, we ask that you notify the contact person listed above at least ten days before the hearing. You should estimate the time you will need for your presentation and identify any needed audio/visual

equipment. We suggest that you bring copies of your statement or other material for the EPA panel and the audience. It would also be helpful if you send us a copy of your statement or other materials before the hearing.

We will make a tentative schedule for the order of testimony based on the notifications we receive. This schedule will be available on the morning of the hearing. In addition, we will reserve a block of time for anyone else in the audience who wants to give testimony. We will conduct the hearing informally, and technical rules of evidence won't apply. We will arrange for a written transcript of the hearing and keep the official record of the hearing open for 30 days to allow you to submit supplementary information. You may make arrangements for copies of the transcript directly with the court reporter.

VIII. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a "significant regulatory action" under the terms of Executive Order 12866 (58 FR 51735, October 4, 1993) and is therefore not subject to review under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011).

B. Paperwork Reduction Act

This action does not impose any new information collection burden. It only updates the penalty amounts to correspond to the current emission standards. However, the Office of Management and Budget (OMB) has previously approved the information collection requirements contained in the existing regulations 40 CFR part 86, subpart L under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. and has assigned OMB control number 2060-0132. The OMB control numbers for EPA's regulations in 40 CFR are listed in 40 CFR part 9.

C. Regulatory Flexibility Act

(1) Overview

The Regulatory Flexibility Act generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of these rules on small entities, small entity is defined as: (1) a small business as defined by SBA regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

(2) Summary of Potentially Affected Small Entities

After considering the economic impacts of this proposed rule on small entities, I certify that this action will not have a significant impact on a substantial number of small entities.

When these emission standards were established, the final rulemaking (66 FR 5001, January 18, 2001) noted that we were not aware of "any manufacturers of heavy-duty engines that meet SBA's definition of a small business." Based on an updated assessment, EPA has identified a total of about 14 manufacturers that produce diesel cycle heavy-duty motor vehicle engines. Of these, none of these are small businesses that are producing engines with NOx emissions above 0.20 g/hp-hr. Based on this, we are certifying that this proposed rule will not have a significant economic impact on a substantial number of small entities.

(3) Conclusions

I therefore certify that this proposal will not have a significant economic impact on a substantial number of small entities. We continue to be interested in the potential impacts of the proposed rule on small entities and welcome comments on issues related to such impacts.

D. Unfunded Mandates Reform Act

This rule does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any one year. The agency has determined that this action does not contain a Federal mandate that may result in expenditures of $100 million or more for the private sector in any one year. Because the use of NCPs is optional, manufacturers have the flexibility and will likely choose whether or not to use NCPs based on their ability to comply with emissions standards. The availability of NCPs provides manufacturers with a third alternative: to continue production and introduce into commerce upon payment of a penalty an engine that exceeds the standard until an emission conformance technique is developed. Therefore, NCPs represent a regulatory mechanism that allows affected manufacturers to have increased flexibility. Thus, this action is not subject to the requirements of sections 202 or 205 of the UMRA. This action is also not subject to the requirements of section 203 of the UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments.

E. Executive Order 13132 (Federalism)

Executive Order 13132, entitled “Federalism” (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure “meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.” “Policies that have federalism implications” is defined in the Executive Order to include regulations that have “substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.”

This proposed action does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. These proposed rules will apply to manufacturers of on-highway engines and not to state or local governments. Thus, Executive Order 13132 does not apply to this action.

In the spirit of Executive Order 13132, and consistent with EPA policy to promote communications between the agency and State and local governments, the agency specifically solicits comment on this proposed action from State and local officials.

F. Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments)

This proposed rule does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). This proposal will be implemented at the Federal level and impose compliance costs only on engine manufacturers who elect to use the NCP regulatory flexibility to comply with emissions standards. Tribal governments would be affected only to the extent they purchase and use engines and vehicles to which an NCP has been applied. Thus, Executive Order 13175 does not apply to this proposed rule.

EPA specifically solicits additional comment on this proposed action from tribal officials.

G. Executive Order 13045: “Protection of Children from Environmental Health Risks and Safety Risks”

Executive Order 13045: "Protection of Children from Environmental Health Risks and Safety Risks" (62FR19885, April 23, 1997) applies to any rule that: (1) is determined to be "economically significant" as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the agency.

EPA interprets Executive Order 13045 as applying only to those regulatory actions that are based on health or safety risks, such that the analysis required under section 5-501 of the Order has the potential to influence the regulation. This proposed rule is not subject to Executive Order 13045 because it does not establish an environmental standard intended to mitigate health or safety risks.

H. Executive Order 13211 (Energy Effects)

This proposed action is not subject to Executive Order 13211 (66 FR 28355 (May 22, 2001)), because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (“NTTAA”), Public Law No. 104-113, 12(d) (15 U.S.C. 272 note) directs the agencies to

use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.*, materials, specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. NTTAA directs EPA to provide Congress, through OMB, explanations when the EPA decides not to use available and applicable voluntary consensus standards.

This proposed rulemaking does not involve technical standards. Therefore, EPA is not considering the use of any voluntary consensus standards.

J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (59 FR 7629, February 16, 1994) establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

EPA has determined that this action will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations. The overall environmental impacts of this action are expected to be small and of limited duration. Moreover, there is no reason to believe that trucks using NCP engines will be more likely to operate near any minority or low-income populations than other trucks.

IX. Statutory Provisions and Legal Authority

Statutory authority for the vehicle controls in these rules is found in CAA section 206(g) of the CAA, 42 U.S.C. 7525(g).

List of Subjects in 40 CFR Part 86

Administrative practice and procedure, Confidential business information, Motor vehicle pollution, Reporting and recordkeeping requirements.

Dated: January 20, 2012.

Lisa P. Jackson,

Administrator.

For the reasons set forth in the preamble, the Environmental Protection Agency proposes to amend 40 CFR chapter I of the Code of Federal Regulations as follows:

PART 86-- CONTROL OF EMISSIONS FROM NEW AND IN-USE HIGHWAY VEHICLES AND ENGINES

1. The authority citation for part 86 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

Subpart L—[Amended]

2. Section 86.1104-91 is revised to read as follows:

§ 86.1104-91 Determination of upper limits.

EPA shall set a separate upper limit for each phase of NCPs and for each service class.

(a) The provisions of this section specify a default approach for determining the upper limit values.

(1) The default upper limit applicable to a pollutant emission standard for a subclass of heavy-duty engines or heavy-duty vehicles for which an NCP is established in accordance with §86.1103–87, shall be the previous pollutant emission standard for that subclass.

(2) If a manufacturer participates in any of the emissions averaging, trading, or banking programs, and carries over certification of an engine family from the prior model year, the upper limit for that engine family shall be the family emission limit of the prior model year, unless the family emission limit is less than the upper limit determined in paragraph (a) of this section.

(b) If no previous standard existed for the pollutant under paragraph (a) of this section, the upper limit will be developed by EPA during rulemaking.

(c) EPA may set the upper limit during rulemaking at a level below the default level specified in paragraph (a) of this section if we determine that a lower level is achievable

by all engines.

(d) In unusual circumstances, EPA may set the upper limit during rulemaking at a level above the default level specified in paragraph (a) of this section if we determine that the default level will not be achievable by all engines. For example, this may apply where a new standard for a different pollutant effectively increases the stringency of the standard for which NCPs would apply.

3. Section 86.1105-87 is amended by revising paragraph (e) and paragraph (j) to read as follows:

§ 86.1105-87 Emission standards for which nonconformance penalties are available.

* * * * *

(e) The values of COC50, COC90, and MC50 in paragraphs (a) and (b) of this section are expressed in December 1984 dollars. The values of COC50, COC90, and MC50 in paragraphs (c) and (d) of this section are expressed in December 1989 dollars. The values of COC50, COC90, and MC50 in paragraph (f) of this section are expressed in December 1991 dollars. The values of COC50, COC90, and MC50 in paragraphs (g) and (h) of this section are expressed in December 1994 dollars. The values of COC50, COC90, and MC50 in paragraph (i) of this section are expressed in December 2001 dollars. The values of COC50, COC90, and MC50in paragraph (j) of this section are expressed in December 2011 dollars. These values shall be adjusted for inflation to dollars as of January of the calendar year preceding the model year in which the NCP is first available

by using the change in the overall Consumer Price Index, and rounded to the nearest whole dollar in accordance with ASTM E29–67 (reapproved 1980), Standard Recommended Practice for Indicating Which Places of Figures are to be Considered Significant in Specified Limiting Values. This method was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. This document is available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428–2959, and is also available for inspection as part of Docket A–91–06, located at the U.S. EPA, Air and Radiation Docket and Information Center, 1301 Constitution Ave., NW., Room 3334, EPA West Building, Washington, DC 20004, (202) 202–1744 or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: http://www.archives.gov/federal-register/cfr/ibr-locations.html. This incorporation by reference was approved by the Director of the Federal Register on January 13, 1992. These materials are incorporated as they exist on the date of the approval and a notice of any change in these materials will be published in the Federal Register.

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(j) Effective in the 2012 and later model years, NCPs will be available for the following emission standard:

(1) Diesel heavy-duty engine oxides of nitrogen standard of 0.20 grams per brake horsepower-hour in §86.007–11(a)(1)(i).

(i) For medium heavy-duty diesel engines:

(A) The following values shall be used to calculate an NCP in accordance with §86.1113–87(a):

(*1*) COC50: $462.

(*2*) COC90: $682.

(*3*) MC50: $ 1,540 per gram per brake horsepower-hour.

(*4*) F: 1.30.

(*5*) UL: 0.5 grams per brake horsepower-hour.

(B) The following factor shall be used to calculate the engineering and development component of the NCP for the standard set forth in §86.007–11(a)(1)(i) in accordance with §86.1113–87(h): 0.009.

(ii) For heavy heavy-duty diesel engines:

(A) The following values shall be used to calculate an NCP in accordance with §86.1113–87(a):

(*1*) COC50: $1,561.

(*2*) COC90: $1,919.

(*3*) MC50: $ 5,203 per gram per brake horsepower-hour.

(*4*) F: 1.23.

(*5*) UL: 0.5 grams per brake horsepower-hour.

(B) The following factor shall be used to calculate the engineering and development component of the NCP for the standard set forth in §86.007–11(a)(1)(i) in accordance with §86.1113–87(h): 0.004.

(2) Manufacturers may not generate emission credits for any pollutant from engines for which the manufacturer pays an NCP.

(3) The penalty shall be adjusted annually as specified in §86.1113-87 with 2012 as the first year. Note that this means AAF_{2012} is equal to 1.

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