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CHAPTER 11: Small-Business Flexibility Analysis

This chapter discusses our Final Regulatory Flexibility Analysis, which evaluates the potential impacts of new standards on small entities. Pursuant to the requirements of the Regulatory Flexibility Act, as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), which 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. Prior to issuing a proposal for this rulemaking, we analyzed the potential impacts of these regulations on small entities. As a part of this analysis, we convened a Small Business Advocacy Review Panel (SBAR Panel, or ‘the Panel’). During the Panel process, we gathered information and recommendations from Small Entity Representatives (SERs) on how to reduce the impact of the rule on small entities, and those comments are detailed in the Final Panel Report which is located in the public record for this rulemaking (Docket A-2001-28, Document No. II-A-172).

11.1 Overview of the Regulatory Flexibility Act

In accordance with section 609(b) of the Regulatory Flexibility Act, we convened an SBAR Panel before conducting the Regulatory Flexibility Analysis. A summary of the Panel’s recommendations can be found in our proposal. Further, the Final Panel Report contains a detailed discussion of the Panel’s advice and recommendations (as well as the SER recommendations). The regulatory alternatives that are being adopted in this final rule are described below.

Section 609(b) of the Regulatory Flexibility Act further directs the Panel to report on the comments of small entity representatives and make findings on issues related to identified elements of the Regulatory Flexibility Analysis under section 603 of the Regulatory Flexibility Act. Key elements of a Regulatory Flexibility Analysis are:

- a description and, where feasible, an estimate of the number of small entities to which the proposed rule applies;
- projected reporting, record keeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that would be subject to the rule and the type of professional skills necessary to prepare reports or other records;
- an identification, to the extent practicable, of all other relevant federal rules that may duplicate, overlap, or conflict with the proposed rule;
- any significant alternatives to the proposed rule that accomplish the stated objectives of applicable statutes and that minimize any significant economic impact of the proposed rule on small entities.

The Regulatory Flexibility Act was amended by SBREFA to ensure that concerns regarding small entities are adequately considered during the development of new regulations that affect

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those entities. Although we are not required by the Clean Air Act to provide special treatment to small businesses, the Regulatory Flexibility Act requires us to carefully consider the economic impacts that our rules will have on small entities. The recommendations made by the Panel may serve to help lessen these economic impacts on small entities when consistent with Clean Air Act requirements.

11.2 Need for the Rulemaking and Rulemaking Objectives

A detailed discussion on the need for and objectives of this rule are in the preamble to the final rule. Controlling emissions from nonroad engines and equipment, in conjunction with diesel fuel controls, has important public health and welfare benefits. With the advent of more stringent controls on highway vehicles and their fuels, emissions from nonroad sources, unless controlled, will contribute significantly more harmful pollution than those from highway sources.

Section 213(a)(3) of the Clean Air Act requires EPA to regulate NO_x emissions from nonroad engines and vehicles upon an EPA determination that nonroad engines contribute to emissions in a nonattainment area. In part, section 213(a)(3) authorizes EPA to promulgate standards for designated pollutants (including NO_x) that require the greatest degree of emission reduction achievable from application of technology to nonroad engines (or vehicles) while giving “appropriate consideration to the cost of applying such technology within the period of time available to manufacturers and to noise, energy, and safety factors associated with the application of such technology.” Section 213(a)(4) applies to all pollutants not specifically identified in section 213(a)(3), and authorizes EPA to promulgate “appropriate” standards for such pollutants, taking into account “costs, noise, safety, and energy factors associated with the application of technology which the Administrator determines will be available” for those engines (or vehicles). Controls on PM implement this provision.

Similarly, section 211(c)(1) authorizes EPA to regulate fuels if any emission product of the fuel causes or contributes to air pollution that may endanger public health or welfare, or that may impair the performance of emission-control technology on engines and vehicles. We believe there is an opportunity for cost-effective emission reductions on a large scale.

11.3 Issues Raised by Public Comments

During the public comment period we received numerous comments regarding various aspects of the NPRM, including our proposed small business provisions. The following section provides a summary of the comments that we received on our proposed provisions. More information on these comments can be found in the Final Summary and Analysis of Comments, which is a part of the rulemaking record.

11.3.1 Comments Regarding Small Business Engine and Equipment Manufacturers

One small business engine manufacturer commented that the proposed provisions for small manufacturers are appropriate and strongly supported their inclusion in the final rule. The manufacturer raised many concerns of why it believes that it is necessary to include such provisions, such as: larger/higher-volume manufacturers will have priority in supply of new technologies and will thus have more R&D time to complete development of these systems before they are available to smaller manufacturers; and, smaller manufacturers do not command the same amount of attention from potential suppliers of critical technologies for T4 controls, and are thus concerned that they may not be able to attract a manufacturer to work with them on the development of compliant technologies. The small manufacturer believes that the additional three-year time period proposed for small business engine manufacturers in the NPRM is necessary for its company, and is the company's estimate of the time that it will take for these technologies to be available to small engine manufacturers.

The Small Business Administration's Office of Advocacy ("Advocacy") raised the concern that the rule would impose significant burdens on a substantial number of small entities with little corresponding environmental benefit. Advocacy commented that we should exclude smaller engines (those under 75 hp) from further regulation in order to comply with the Regulatory Flexibility Act and fulfill the requirement of reducing the burden on small engine classes. Advocacy recommended that PM standards for engines in the 25-75 hp powerband should not be based on performance of aftertreatment technologies. Advocacy believes that the proposed flexibilities will not suffice on their own to appropriately minimize the regulatory burdens on small entities; and Advocacy noted that during the SBREFA process, some small equipment manufacturers stated that although EPA would allow some equipment to be sold which would not require new emissions controls, engine manufacturers would not produce or sell such equipment. Advocacy also commented that we have not shown that substantial numbers of small businesses have taken advantage of previous small business flexibilities, or that small businesses would be able to take advantage of the flexibilities under this rule. Lastly, Advocacy commented that although full compliance with the more stringent emissions controls requirements would be delayed for small manufacturers, small business manufacturers eventually will be required to produce equipment meeting the new requirements.

11.3.2 Comments Regarding Small Fuel Refiners, Distributors, and Marketers

11.3.2.1 General Comments on Small Refiner Flexibility

One small refiner commented that it is not plausible at this time to evaluate the impact of the three fuels regulations on the refining industry (and small refiners), however it stated that we should continue to evaluate the impacts and act quickly to avoid shortages and price spikes and we should be prepared, if necessary, to act quickly in considering changes in the regulations to avoid these problems. We also received comment that some small refiners that produce locomotive and marine fuels fear that future sulfur reductions to these markets could be very damaging.

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11.3.2.2 Comments on the Small Refiner Definition

A small refiner commented that the proposed redefinition of a small refiner (to not grandfather as small refiners those that were small for highway diesel) would both negate the benefits afforded under the small refiner provisions in the Highway Diesel Sulfur rule and disqualify its status as a small refiner. The refiner suggested that we clarify the language and include provisions for continuance of small refiner flexibility for refiners who qualified under the Highway Diesel Sulfur rule (and have not been disqualified as the result of a merger or acquisition).

11.3.2.3 Comments on the Baseline Approach

A coalition of small refiners provided comments on a few aspects of concern. The small refiners believe that the fuel segregation, and ensuing marking and dyeing, provisions are quite complex. One small refiner believes that mandating a minimum volume of NRLM production would conflict with the purpose of maintaining adequate on-highway volumes of 15ppm sulfur fuel and unnecessarily restricts small refiners, and offered suggestions in their comments on how to improve the language.

11.3.2.4 Comments on Small Refiner ‘Option 4’

A coalition of small refiners commented that if the final rule is not issued before January 1, 2004, a provision should be made to accommodate those small refiners planning to take advantage of the proposed small refiner “Option 4” (the NRLM/Gasoline Compliance option). A small refiner echoed the concerns of the small refiner coalition, commenting that delayed finalization of the final rule would undermine the benefits of small refiner flexibility Option 4. The small refiner is concerned that a delay in issuing the rule, and subsequent delay in the opportunity to apply the interim gasoline flexibility, would negate its opportunity to take full advantage of the credits the refiner now has, as it would not be able to comply with the 300 ppm cap. The small refiner suggested that we allow small refiners to apply for temporary relief and operate under the Option 4 provision.

A small refiner commented that, in the NPRM, it was unclear if a small refiner could elect to use any or all of the first three of the small refiner provisions if it did not elect to use Option 4. Further, the refiner understood that if Option 4 was chosen, a small refiner could not use any of the first three options. The refiner believes that it is important that a small refiner be able to use Options 1, 2, and 3 in combination with each other, and stated that we need to clarify the intent in the final rule. The small refiner also commented that the provisions in 40 CFR §§ 80.553 and 80.554 are not clear and should be revised to clarify their intent. Specifically, the refiner questioned whether or not a small refiner who committed to producing ULSD by June 1, 2006 in exchange for an extension of its interim gasoline sulfur standards (under 40 CFR 80.553) could elect to exercise the options allowed under 40 CFR 80.554.

Another small refiner raised the concern that the small refiner Option 4 only provides an adjustment to those small refiners whose small refiner gasoline sulfur standards were established

through the hardship process of 40 CFR § 80.240. The small refiner suggested that we finalize a compliance option that allows a 20% increase in small refiner gasoline sulfur standards be extended to all small refiners, not just those with standards established pursuant 40 CFR § 80.240(a), and offers suggested language in its comments.

11.3.2.5 Comments on Emission Impacts of the Small Refiner Provisions

A state environmental group commented that the provisions for small refiners raise substantial environmental concerns. The group is concerned that these provisions will allow small refiners the ability to produce gasoline with an unknown sulfur content for an unknown length of time; this fuel may then be sold at the refiner's retail outlet, and may become the primary fuel for some vehicles, which alters vehicle fleet emissions performance. This environmental group also commented that the absence of any process of notification regarding small business provisions to notify States of these provisions is troubling. The group's concern is that any deviations from fuel content regulations that affect fuels consumed, can significantly alter their inventories and can undermine the State planning process. The group suggested that in the future there should be greater communication from us regarding decisions that impact the quality of fuels consumed in a state, and thus impact the quality of that state's air.

Another state environmental group commented on the flexibility provisions for small refiners; the group is concerned that the exemption will *not* have a minor effect on the nation's fuel supply, as the state is an intermountain western state. The group comments that the impact of this exemption is concentrated in these states, namely Washington and Oregon- states which are served primarily by refineries that will be allowed to delay compliance with the ULSD standards until 2014. Therefore, the group commented, residents of these areas are denied air quality benefits equivalent to those promised the rest of the country. The group is concerned that those seeking to purchase and use equipment in the West will be subject to the ULSD standard regardless of fuel supply and availability in their area. Further, they would be faced with problems such as misfueling, the need to defer the purchase of new equipment, or paying a premium for a 'boutique' fuel.

11.3.2.6 Comments on Inclusion of a Crude Capacity Limit for Small Refiners

Two non-small refiners supported the inclusion of the 155,000 bpcd limit; further, one refiner commented that any refiner with the financial wherewithal to acquire additional refineries to allow its crude capacity to exceed 155,000 bpcd should not be able to retain status as a small refiner. Another commenter stated that if we were to finalize the 155,000 bpcd limit, we should not apply it in cases of a merger between two small refiners. The commenter further stated that a merger of two small companies in a hardship condition does not imply improved financial health in the same way that an acquisition would. A small refiner is commented that it supports the addition of the capacity limit in the small refiner definition as it would correct the problem of the inadvertent loop-hole in the two previous fuel rules. Though the refiner did raise the concern that the wording of the proposed language may result in small refiners such as itself, who grew by normal business practice, being disqualified as small refiners.

11.3.2.7 Comments on Leadtime Afforded for Mergers and Acquisitions

A non-small refiner suggested that we limit the provision of affording a two-year leadtime to small refiners who lose their small status due to merger or acquisition to the case where a small refiner merges with another small refiner. Further, the refiner commented that it would be inappropriate to allow such small refiners to be able to generate credits for “early” production of lower sulfur diesels during this two-year leadtime. Lastly, the refiner commented that a small refiner which acquires a non-small refiner, and thus loses its small refiner status, should not be eligible for hardship provisions. Another non-small refiner commented that it supports the two-year lead time for refineries that lose their status as a small refiner due to a merger or acquisition.

11.3.2.8 Necessity of Small Refiner Program

A non-small refiner provided comment on the NPRM stating the belief that the proposed provisions for small refiners are not practical. The refiner is concerned that having provisions for small refiners adds a level of complication, results in emissions losses, increases the potential for ULSD contamination, and create an unfair situation in the marketplace. Similarly, another non-small refiner and a trade group representing many refiners and others in the fuels industry commented that they oppose the extension of compliance deadlines for small refiners, as this can result in inequitable situations that may affect the refining industry for some time and can put the distribution system at risk for contamination of lower sulfur fuels. They further stated that all refiners will face challenges in complying with the upcoming standards and would not significantly alter the business decisions that small refiners would make. They also stated that non-small refiners face similar issues with their older and/or smaller refineries, but will not have the benefit of being able to postpone making these decisions as small refiners will.

11.3.2.9 Comments on Fuel Marker

We received comments from terminal operators stating that the proposed heating oil marker requirements would force small terminal operators to install expensive injection equipment and that they would not be able to recoup the costs.

11.4 Description of Affected Entities

Small entities include small businesses, small organizations, and small governmental jurisdictions. For assessing the impacts of the rule on small entities, a small entity is defined as: (1) a small business that meets the definition for business based on the Small Business Administration’s (SBA) size standards (see Table 11-1); (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 that is independently owned and operated and is not dominant in its field. Table 11-1 provides an overview of the primary SBA small business categories potentially affected by this regulation.

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The following sections discuss the small entities directly regulated by this final rule—namely nonroad diesel engine manufacturers, nonroad diesel equipment manufacturers, and nonroad fuel refiners and fuel marketers/distributors. Also, Table 11-2 lists our assessment of the number of small entities that will be directly affected by this rulemaking.

Table 11-1
Small Business Definitions

Industry	Defined as small entity by SBA if:	Major SIC Codes ^a
Engine manufacturers	Less than 1,000 employees	Major Group 35
Equipment manufacturers: - construction equipment - industrial truck manufacturers (i.e., forklifts) - all other nonroad equipment manufacturers	Less than 750 employees Less than 750 employees Less than 500 employees	Major Group 35 Major Group 35 Major Group 35
Fuel refiners	Less than 1500 employees ^b	2911
Fuel distributors	<i>varies</i>	<i>varies</i>

^a Standard Industrial Classification

^b In previous rulemakings to set fuel requirements, we have included a provision that a refiner must also have a company-wide crude refining capacity of no greater than 155,000 barrels per calendar day to qualify for the small-refiner flexibilities. We have included this criterion in the small-refiner definition for this final rule.

Table 11-2
Number of Small Entities To Which the Nonroad Diesel Rule Will Apply

Industry	Defined as small entity by SBA if:	Number of Affected Entities
Engine manufacturers	Less than 1,000 employees	4 ^a
Equipment manufacturers	(see criteria in Table 11-1)	335 ^a
Fuel refiners	Less than 1500 employees	26
Fuel distributors	<i>varies</i>	(see discussion in 11.4.2.2)

^a The numbers of affected entities for these categories are taken from the total number of companies that were used in our screening analysis (i.e., companies with publicly available employee and sales data).

11.4.1 Description of Nonroad Diesel Engine and Equipment Manufacturers

To assess how many small engine and equipment manufacturers would be directly affected by the rule, we first created a database consisting of firms listed in the Power Systems Research (PSR) database and compared this with the list of companies from the analysis performed for the 1998 nonroad final rule and with membership lists from trade organizations. We then found sales and employment data for the parent companies of these firms using databases such as the Thomas Register and Dun and Bradstreet. Due to the wide variety in the types of equipment that

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use nonroad diesel engines, there are numerous SIC codes in which the equipment manufacturers report their sales, though the majority of the firms are listed under the SIC major group 35xx-*Industrial and Commercial Machinery and Computer Equipment*.

We conducted a preliminary industry profile to identify the engine and equipment manufacturers that are in the nonroad diesel sector. We identified more than 1,000 businesses that fit this description; however, due to a lack of publicly available sales or employment data, some of these entities could not be confirmed for consideration in the analysis.

11.4.1.1 Nonroad Diesel Engine Manufacturers

Using information from the preliminary industry profile, we identified a total of 61 engine manufacturers. The top 10 engine manufacturers comprise over 80 percent of the total market, while the other 51 companies make up the remaining percentage.^A Of the 61 manufacturers, four fit the SBA definition of a small entity. These four manufacturers were Anadolu Motors, Farymann Diesel GmbH, Lister-Petter Group, and V & L Tools (parent company of Wisconsin Motors LLC, formerly ‘Wis-Con Total Power’). These businesses comprise approximately 8 percent of the total engine sales for the year 2000. Lister Petter and V & L Tools were the only two manufacturers which had certified engines for model year 2000.

Wisconsin Motors produces diesel engines for a small niche market and served as a Small Entity Representative (SER) during the Small Business Advocacy Review Panel process, speaking to the needs of small engine manufacturers.

11.4.1.2 Nonroad Diesel Equipment Manufacturers

This rule will result in equipment manufacturers incurring some increased costs as a result of the need to make changes to their equipment to accommodate the addition of aftertreatment technologies. The vast majority of equipment manufacturers are not integrated companies, meaning that they do not make the engines they install. Thus, most equipment manufacturers are largely dependent on engine manufacturers for the availability of pre-production information about the new engines and for a sufficient supply of the engines once production begins. Equipment manufacturers that are small businesses may, in general, face a disproportionate degree of hardship in adapting to these types of changes in design and increased costs of new, cleaner engines.

To determine the number of equipment manufacturers, we also used the industry profile that was conducted. From this, we identified more than 700 manufacturers with sales and/or employment data that could be included in the screening analysis. These businesses included manufacturers in the construction, agricultural, and outdoor power equipment (mainly, lawn and garden equipment) sectors of the nonroad diesel market. The equipment produced by these manufacturers ranged from small (sub-25 hp walk-behind equipment) to large (in excess of 750

^A All sales information used for this analysis was 2000 data.

hp, such as mining and construction equipment). Of the manufacturers with available sales *and* employment data (approximately 500 manufacturers), small equipment manufacturers represent 68 percent of total equipment manufacturers (and these manufacturers account for 11 percent of nonroad diesel equipment industry sales). Thus, the majority of the small entities that could potentially experience a significant impact as a result of this rulemaking are in the nonroad equipment manufacturing sector.

While a few small equipment manufacturers did serve as SERs during the SBREFA Panel process, a trade association representing many equipment manufacturers also served as a SER. We believe that due to the large number of small equipment manufacturers, this SER was better able to contact and disseminate information to the large universe of small entities in this category and serve as a voice for some of the extremely small equipment manufacturers.

11.4.2 Description of the Nonroad Diesel Fuel Industry

The analysis that we developed for the refining industry is built on analyses that were performed for the gasoline and highway diesel sulfur programs in recent years. Information about the characteristics of refiners came from sources including the Energy Information Administration within the U.S. Department of Energy, and from oil industry literature. Our assessment was that the refining industry is located primarily in SIC 2911. In both the gasoline sulfur and highway diesel sulfur rules, we applied specific small-refiner flexibilities to refiners that have no more than 1500 employees and no greater than 155,000 barrels per calendar day crude capacity. For transporters, distributors, and marketers of nonroad diesel fuel, trade groups were our key sources for information about this industry. We determined that this industry sector includes several types of businesses that fall into several different SBA small entity criteria; our assessment was that the vast majority of these entities are small.

11.4.2.1 Nonroad Diesel Fuel Refiners

Our assessment is that 26 high-sulfur (nonroad and locomotive and marine) refiners, collectively owning 33 refineries, meet SBA's definition of a small business for the refining industry. The 33 refineries appear to meet both of the employee number and production volume criteria mentioned above, out of a total of approximately 91 nonroad refineries. These small refiners produce approximately 6 percent of the total high-sulfur diesel fuel. Note that because of the dynamics in the refining industry (such as mergers and acquisitions), this figure could likely change.

A few small refiners, as well as representatives of an ad-hoc coalition of some of the small refiners participated in the SBREFA process. These small refiners, and those in which they represented, provide high sulfur diesel fuel for various non-highway markets and applications, and own and operate refineries throughout the country.

11.4.2.2 Nonroad Diesel Fuel Distributors and Marketers

The industry that transports, distributes, and markets nonroad diesel fuel encompasses a wide range of businesses, including bulk terminals, bulk plants, fuel oil dealers, and diesel fuel trucking operations, and totals thousands of entities that have some role in this activity. More than 90 percent of these entities meet small-entity criteria. Common carrier pipeline companies are also a part of the distribution system; 10 of them are small businesses.

Similar to the nonroad small business equipment sector, the universe of nonroad fuel distributors and marketers is quite large, so representatives of fuel pipeline and fuel marketing trade groups participated in the SBREFA process. We believe that these representatives were very capable of speaking to the needs of their members that are small entities and were also better able to disseminate SER outreach information to these markets.

11.5 Projected Reporting, Recordkeeping, and Other Compliance Requirements of the Regulation

For engine and equipment manufacturers, EPA is continuing many of the reporting, recordkeeping, and compliance requirements prescribed for these categories in 40 CFR part 89. These include, certification requirements and provisions related to reporting of production, emissions information, use of transition provisions, etc. The types of professional skills required to prepare reports and records is also similar to the types of skills set out in 40 CFR part 89. Key differences in the requirements of this final rule, as compared to 40 CFR part 89, are the reporting of emissions information and defect reporting -- we are finalizing an increase in the number of data points (i.e. transient testing) that will be required for reporting emissions information, as well as adopting an increased reporting burden for Tier 3 and earlier engines for defect reporting. In addition, we are requiring that manufacturers report to us if they learn that a substantial number of their engines have emission-related defects. This is generally not an affirmative requirement to collect information. However, if manufacturers learn that there are, or might be, a substantial number of emission-related defects, then they must send us information describing the defects.

For any fuel control program, we must have the assurance that fuel produced by refiners meets the applicable standard, and that the fuel continues to meet this standard as it passes downstream through the distribution system to the ultimate end user. Which is of particular importance in regards to diesel fuel, since the aftertreatment technologies expected to be used to meet the engine standards are highly sensitive to sulfur. Many of the recordkeeping, reporting, and compliance provisions we are finalizing are fairly consistent with those currently in place for other fuel programs, including the current 15 ppm highway diesel regulation. For example, recordkeeping involves the use of product transfer documents, which are already required under the 15 ppm highway diesel sulfur rule (40 CFR 80.560). We are finalizing additional recordkeeping and reporting requirements for refiners, importers, and fuel distributors to implement the designate and track provisions. Discussions with parties from all segments of the distribution system indicated that the records necessary were analogous to records already kept

as a normal process of conducting business. Consequently, the only significant additional burden would be associated with the reporting requirement.

General requirements for reporting for refiners and importers include: registration (if the refiner or importer is not registered under a previous fuel program), pre-compliance reports (on a refiner or importer's progress towards meeting the nonroad diesel fuel requirements as specified in this rule), quarterly designation reports, and annual reports. All parties, from the refiner to the terminal, will be required to report volumes of designated fuels received and distributed, as well as compliance with quarterly and annual limits. All parties in the distribution system will be required to keep product transfer documents (PTDs), though refiners and importers are required to initially generate and provide information on commercial PTDs that identify the diesel fuel with meeting specific needs (i.e. 15 ppm highway diesel, 500 ppm highway diesel, etc.). Also, small refiners in Alaska that choose to delay compliance must, at a minimum, report end users of their fuel. These end users must at a minimum also keep records of these fuel purchases. As with previous fuel regulations, small refiners will be required to apply for small refiner status and small refiner baselines.

In general, we are requiring that all records be kept for at least five years. This recordkeeping requirement should impose little additional burden, as five years is the applicable statute of limitations for current fuel programs.

Section X.B of the preamble to the final rule includes a discussion of the estimated burden hours and costs of the recordkeeping and reporting that will be required by this final rule. Detailed information on the reporting and recordkeeping measures associated with this rulemaking are described in the Information Collection Requests (ICRs), also located in the preamble to this rulemaking-- 1897.05 for nonroad diesel engines, and 1718.05 for fuel-related items.

11.6 Steps to Minimize Significant Economic Impact on Small Entities

As a part of the SBREFA process, we conducted outreach to a number of small entities representing the various sectors covered in this rulemaking and convened a Panel to gain feedback and advice from these representatives. Prior to convening the Panel, we held outreach meetings with the SERs to learn the needs of small businesses and potential challenges that these entities may face. The outreach meetings also helped to provide the SERs an opportunity to gain a better understanding of the upcoming standards. The feedback that we received from SERs as a result of these meetings was used during the Panel convening for developing regulatory alternatives to mitigate the impacts of the rulemaking on small businesses. General concerns raised by SERs during the SBREFA process were potential difficulty and costs of compliance with the upcoming standards.

The Panel consisted of members from EPA, the Office of Management and Budget (OMB), and the Small Business Administration's Office of Advocacy ('Advocacy'). Following the Panel convening, a Final Panel Report detailing all of the alternatives that were recommended by the

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Panel (as well as individual Panel members) was issued. We either proposed or requested comment on the various recommendations put forth by the Panel. Below we discuss those flexibility options recommended in the Panel Report, our proposed regulatory alternatives, and those provisions which are being finalized. We are finalizing many of the provisions recommended by the Panel, with exceptions noted below. We believe that the provisions that we are finalizing will help to mitigate the burden imposed upon small entities in complying with this rule.

11.6.1 Transition and Hardship Provisions for Small Engine Manufacturers

11.6.1.1 Panel Recommendations

The following provisions were recommended by the Panel for nonroad diesel small business engine manufacturers. During the SBREFA process and the development of the rule, we considered both a one-step approach as well as the two-step approach in the final rule. To be eligible for the recommended provisions set out below, a manufacturer would have to have certified in model year 2002 or earlier and would be limited to 2500 units per year (to allow for some market growth). The Panel recommended these qualifications to prevent misuse of the transition and hardship provisions as a way to enter the nonroad diesel market or to gain unfair market position relative to other manufacturers.

For an approach that entails only one phase of standards, the Panel recommended that a manufacturer could opt to delay compliance for a period of up to three years. The Panel also recommended that we take comment on whether this delay period should be two, three, or four years. Each delay would be pollutant-specific (i.e., the delay would apply to each pollutant as it is phased in).

For an approach with two phases of standards the Panel recommended the following transition provisions:

- an engine manufacturer could skip the first phase and comply on time with the second; or,
- a manufacturer could delay compliance with each phase of standards for up to two years.

The Panel recommended that there should not be any PM aftertreatment-based standards for engines between 25 and 75 hp. It was also recommended by the Panel that an emission-credit program of averaging, banking, and trading (ABT) be included as part of the overall rulemaking program.

The Panel recommended that two types of hardship provisions be extended to small engine manufacturers. These provisions are:

- for the case of a catastrophic event or other extreme unforeseen circumstances beyond the control of the manufacturer that could not have been avoided with reasonable discretion (such as fire, tornado, or supplier not fulfilling contract); and

- for the case where a manufacturer has taken all reasonable business, technical, and economic steps to comply but cannot do so.

The Panel recommended that either hardship relief provision could provide lead time for up to 2 years- in addition to the transition provisions- and a manufacturer would have to demonstrate to the Agency's satisfaction that failure to sell the noncompliant engines would jeopardize the company's solvency. The Panel further recommended that the Agency may require that the manufacturer make up the lost environmental benefit through the use of programs such as supplemental environmental projects.

11.6.1.2 What We Proposed

Due to the structure of the standards and their timing, we proposed transition provisions, for small engine manufacturers encompassing both approaches recommended by the Panel (with the inclusion of the 2,500 unit limit for each manufacturer). Following the recommendations of the Panel, we proposed the following transition provisions for small business engine manufacturers:

- for PM-
 - small engine manufacturers could delay compliance with the standards for up to three years for engines under 25 hp, and for engines between 75 and 175 hp (as these engines only have one standard)
 - small engine manufacturers could have the option to delay compliance for one year if interim standards are met for engines between 50 and 75 hp (for this power category we would be treating the PM standard as a two phase standard) with the stipulation that small manufacturers could not use PM credits to meet the interim standard; also, if a small manufacturer elects the optional approach to the standard (elects to skip the interim standard), no further relief would be provided
- for NO_x^B-
 - a three year delay in the program for engines in the 25-50 hp and the 75-175 hp categories, consistent with the one-phase approach recommendation above;
 - a small engine manufacturer could be afforded up to two years of hardship (in addition to the transition flexibilities) upon demonstrating to EPA a significant hardship situation;
 - small engine manufacturers would be able to participate in an averaging, banking, and trading (ABT) program (which we proposed as part of the overall rulemaking program for all manufacturers); and,
 - no NO_x aftertreatment-based standards for engines 75 hp and under.

We did propose ABT provisions for all nonroad engine manufacturers to enhance the flexibility offered to engine manufacturers as they make the transition to meet the more stringent

^B EPA did not propose a change in the NO_x standard for engines under 25 hp and those between 50 and 75 hp. For these two power bands, EPA would retain the Tier 3 standards.

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standards. We proposed to retain the basic structure of the current nonroad diesel ABT program, with some changes to accommodate implementation of the emission standards. Though the Panel recommended small engine manufacturer-specific ABT provisions, we did not believe it would be appropriate to provide a different ABT program for small business engine manufacturers. Discussions during the SBAR process indicated that small-volume manufacturers would need extra time to comply due to cost and personnel constraints, and we found little reason to believe that ABT provisions specific to small manufacturers would create an incentive to accelerate compliance. Small manufacturers would, of course, always be able to participate in the general ABT program.

We proposed the majority of the Panel's recommendations for small business engine manufacturers, with noted specific provision elements for PM and NO_x. As we disagreed strongly with the Panel's recommendation that there not be any PM aftertreatment-based standards for engines between 25 and 75 hp, we requested comment on this recommendation, noting our strong reservations. In addition, we proposed the Panel recommended hardship provisions for small business engine manufacturers to provide a useful safety valve in the event of unforeseen extreme hardship.

11.6.1.3 Provisions Being Finalized in This Rule

For nonroad diesel small business engine manufacturers, we are finalizing many of the transition and hardship provisions that we proposed; we are finalizing some revisions to the transition provisions, as described below, and we are finalizing all of the hardship provisions that were proposed. While we believe that emissions from nonroad engines have a significant effect on emissions, we also believe that offering these transition provisions to small business engine manufacturers will have a negligible effect on air quality and the emissions inventory, and provide an appropriate measure of lead time for these small entities. Further, we continue to believe that a complete exemption from the upcoming standards (even assuming that such an exemption could be justified legally) would put small business engine manufacturers at a competitive disadvantage as eventually the rest of the market will be producing engines that are compliant with these new standards and the equipment produced will only be able to accommodate these compliant engines. With the transition provisions, small business engine manufacturers will be in compliance with the Tier 4 standards in the long run and the flexibility options will give them appropriate lead time to comply. Further, we received comments from a small business engine manufacturer stating that such provisions are necessary and adequate to ease the burden of compliance with the upcoming standards. As such, we believe that the transition provisions we are adopting will be of significant help for small business engine manufacturers, and is part of our consideration of appropriate costs in assessing lead time pursuant to section 213 (b) of the Act.

We are finalizing the following transition provisions for small business engine manufacturers:

For engines under 25 hp-

- PM- a manufacturer may elect to delay compliance with the standard for up to three years.
- NO_x- there is no change in the level of the existing NO_x standard for engines in this category, so no special provisions are being provided.

For engines in the 25-50 hp category-

- PM- manufacturers must comply with the interim standards (the Tier 4 requirements that begin in model year 2008) on time, and may elect to delay compliance with the 2013 Tier 4 requirements (0.02 g/bhp-hr PM standard) for up to three years.
- NO_x- a manufacturer may elect to delay compliance with the standard for up to three years.

For engines in the 50-75 hp category-

- PM- A small business engine manufacturer may delay compliance with the 2013 Tier 4 requirement of 0.02 g/bhp-hr PM for up to three years provided that it complies with the interim Tier 4 requirements that begin in model year 2008 on time, without the use of credits. Alternatively, a manufacturer may elect to skip the interim standard completely. Manufacturers choosing this option will receive only one additional year for compliance with the 0.02 g/bhp-hr standard (i.e. compliance in 2013, rather than 2012). See Section III.C of the preamble to the final rule for a fuller explanation of these provisions.
- NO_x- there is no change in the level of the NO_x standard for engines in this category, therefore no special provisions are being provided.

For engines in the 75 to 175 hp category-

- PM- a manufacturer may elect to delay compliance with the standard for up to three years.
- NO_x- a manufacturer may elect to delay compliance with the standard for up to three years.

Regarding the Office of Advocacy's comments on the technical feasibility of PM and NO_x aftertreatment devices. As we proposed in the NPRM, we are not adopting standards based on performance of NO_x aftertreatment technologies for engines under 75 hp. We believe the factual record, as documented in the preamble, the Summary and Analysis of Comments (e.g., the response to comment 3.1.4.3), and elsewhere in this RIA, does not support the claim that the PM standards will not be technically feasible in 2013 for the 25-75 hp engines. As set out at length in Section 4.1.3, among other places, performance of PM traps is not dependent on engine size. Furthermore, as we discussed in the preamble to this final rule and earlier in Chapter 6, we believe that such standards are feasible for these engines at reasonable cost^C, and will help to improve very significant air quality problems, especially by reducing exposure to diesel PM and by aiding in attainment of the PM 2.5 and ozone National Ambient Air Quality Standards. Indeed, given these facts, we do not believe that an alternative of no aftertreatment-based PM standards for these engines would be appropriate under section 213(a)(4). We believe the transition and hardship provisions being finalized for small business engine manufacturers in this

^C As the cost issues raised in SBA's comments relate to all manufacturers (not just small business manufacturers), further information on the costs of this technology as well as the benefits analysis, can be found in Section VI of this preamble (and also Chapters 6 and 9, respectively).

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rule are reasonable and are a factor in our ultimate finding that the PM standards for engines in the 25-75 hp range are appropriate, and that the lead time provided for these standards is the earliest possible after appropriate consideration of compliance costs.

11.6.2 Transition and Hardship Provisions for Nonroad Diesel Equipment Manufacturers

11.6.2.1 Panel Recommendations

For small business equipment manufacturers the Panel recommended that we propose to continue the transition provisions offered for the Tier 1 and Tier 2 nonroad diesel emission standards, as set out in 40 CFR 89.102, with some modifications. Those recommended transition provisions were:

- *Percent-of-Production Allowance*: Over a period of seven model years, equipment manufacturers may install engines not certified to the new emission standards in an amount of equipment equivalent to 80 percent of one year's production. This would be implemented by power category with the average determined over the period in which the flexibility is used.
- *Small-Volume Allowance*: A manufacturer could exceed the 80 percent allowance in seven years as described above, provided that the previous Tier engine use does not exceed 700 total over seven years, and 200 in any given year. This would be limited to one family per power category. Alternatively, the Panel recommended, at the manufacturer's choice by power category, a program that eliminates the "single family provision" restriction with revised total and annual sales limits as shown below:
 - For power categories below 175 hp, a manufacturer could use 525 previous Tier engines (over seven years) with an annual cap of 150 units (these engine numbers are separate for each of the three power categories defined in the regulations).
 - For power categories above 175 hp, a manufacturer could use 350 previous Tier engines (over seven years) with an annual cap of 100 units (these engine numbers are separate for each of the two power categories defined in the regulations).

The Panel recommended that we seek comment on the total number of engines and annual cap values listed above. Advocacy believed the transition to the Tier 4 technology will be more costly and technically difficult, and therefore suggested that small business equipment manufacturers may therefore need more liberal flexibility allowances especially for equipment using the lower hp engines. SBA and OMB recommended that we seek comment on implementing the small-volume allowance (700 engine provision) for small equipment manufacturers without a limit on the number of engine families that could be covered in any power category, as these Panel members were concerned that the Panel's recommended flexibility might not adequately address the approximately 50 percent of small business equipment models where the annual sales per model is less than 300 and the fixed costs are higher.

- An allowance for small business equipment manufacturers to be able to borrow from the Tier3/Tier 4 flexibilities for use in the Tier 2/Tier 3 time frame.

The Panel recommended that - similar to the application of flexibility options that are currently in place - the three transition provisions listed above should be provided to all equipment manufacturers to maximize the likelihood that the application of these flexibilities would result in the availability of previous Tier engines for use by the small business equipment manufacturers. (See discussion on transition provisions for all equipment manufacturers in Section III.B of the preamble to this final rule.)

The Panel also recommended that we seek comment on the need for and value of special “application-specific” alternative standards for small equipment manufacturers for equipment configurations that present unusually challenging technical issues for compliance. Further, Advocacy suggested that we include a technological review of the standards in the 2008 timeframe in the proposal, and the Panel recommended that we consider this.

The Panel recommended that the following two types of hardship provisions be extended to small equipment manufacturers:

- for the case of a catastrophic event or other extreme unforeseen circumstances beyond the control of the manufacturer that could not have been avoided with reasonable discretion (such as fire, tornado, or supplier not fulfilling contract); and
- for the case where a manufacturer has taken all reasonable business, technical, and economic steps to comply but cannot. In this case relief would have to be sought before there is imminent jeopardy that a manufacturer’s equipment could not be sold and a manufacturer would have to demonstrate to the Agency’s satisfaction that failure to get permission to sell equipment with a previous Tier engine would create a serious economic hardship. Hardship relief of this nature could not be sought by a manufacturer that also manufactures the engines for its own equipment.

11.6.2.2 What We Proposed

Following the Panel’s recommendation, we proposed both the Percent-of-Production and Small-Volume Allowances for all equipment manufacturers. Within limits, small business equipment manufacturers would be able to continue to use their current engine/equipment configuration and avoid out-of-cycle equipment redesign until the allowances are exhausted or the time limit passes. We did not propose the Panel’s suggested exemption and annual cap values; however, we did request comment on these items. We also requested comment on implementing the small-volume allowance provision without the single family limit provision using caps slightly lower than 700 units, with the provision being applied separately to each engine power category subject to the proposed standards.

We also proposed and requested comment on requirements associated with the use of transition provisions by foreign importers. During the SBREFA Panel process, the Panel discussed the possible misuse of the transition provisions by using them as a loophole to enter the nonroad diesel equipment market or to gain unfair market position relative to other manufacturers. The Panel recognized that this was a possible problem, and believed that the requirement for small business equipment manufacturers and importers to have reported equipment sales using certified engines in model year 2002 or earlier was a sufficient safeguard.

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Upon further analysis, we found that importers of equipment from a foreign equipment manufacturer could as a group import more excepted equipment from that foreign manufacturer than 80 percent of that manufacturer's production for the U.S. market or more than the small-volume allowances identified in the transition provisions. This would create a potentially significant disparity between the treatment of foreign and domestic equipment manufacturers. We did not intend this situation, and we believe it is not needed to provide reasonable lead time for foreign equipment manufacturers.

To ensure that the transition provisions meet the intended goal of alleviating the burden on small business equipment manufacturers, we requested comment on the additional requirement that only the small business nonroad diesel equipment manufacturer that is most responsible for the installing engines, and the designing, manufacturing, and assembling processes, would qualify for the allowances provided under the small equipment manufacturer transition provisions. For importers, only a small importer that produced or manufactured nonroad diesel equipment would be eligible for these transition provisions. A small importer that does not manufacture or produce equipment does not face a burden in meeting the standards, and therefore would not receive any allowances under the transition provisions directly, but could import exempt equipment if it is covered by an allowance or by transition provisions associated with a foreign small business equipment manufacturer. We proposed this requirement to transfer the flexibility offered in the transition provisions to the party with the burden. We would also allow transition provisions and allowances to be used by foreign small business equipment manufacturers in the same way as domestic small business equipment manufacturers, while avoiding the potential for misuse by importers of unnecessary allowances.

We also proposed the Panel's recommendation that equipment manufacturers be allowed to borrow from Tier 4 flexibilities in the Tier2/3 time frame. A more detailed discussion on this issue, as well as the proposed recommendations for importers, can be found in Section VII.B of the preamble to the proposed rule, and Section III.B of the preamble to the final rule.

With regard to the Panel recommendation of a provision allowing small business manufacturers to request limited "application-specific" alternative standards for equipment configurations that present unusually challenging technical issues for compliance, we requested comment on this recommendation (in Section VII.C of the preamble to the proposed rule); however, we did not receive any public comments on this matter. We believed (and continue to believe) that the transition provisions that we proposed would provide latitude, at least in the near term, and a properly structured emission credit program for the engine manufacturers. Even if one were to assume that these flexibilities provide insufficient lead time (which may not be the case), application-specific standards would still be cumbersome for both the small business equipment manufacturers and for the Agency. Further, this provision could potentially have provided more lead time than could be justified and undermine achievable emission reductions. Moreover, no participant in the SBAR process offered any empirical support that such a problem existed, nor have such issues been demonstrated (or raised) by any equipment manufacturers in implementing the current nonroad standards. We do note, however, that we are adopting a Technical Hardship provision for all equipment manufacturers, which allows a case-by-case showing of extreme and unpreventable technical difficulty which can justify additional lead time

for specific applications. See Section III.B.2.b to the preamble to the final rule. We believe that this provision meets some of the concerns voiced by the Panel.

We proposed that the Panel's recommended hardship provisions be extended to small business equipment manufacturers in addition to the transition provisions described above. To be eligible for these hardship provisions (as well as for the proposed transition provisions), equipment manufacturers and importers must have reported equipment sales using certified engines in model year 2002 or earlier. As discussed earlier, we noted this requirement to thwart misuse of the provisions as a loophole to enter the nonroad diesel equipment market or to gain unfair market position relative to other manufacturers and we request comment on this restriction. Either relief provision would provide additional lead time for small business equipment manufacturers for up to two model years based on the circumstances, and hardship relief would not be available until other allowances have been exhausted.

11.6.2.3 Provisions in the Final Rule

We are finalizing many of the transition and hardship provisions that we proposed for small business nonroad equipment manufacturers, with some modifications as noted below. Adopting an alternative on which we solicited comment, the final rule will allow all equipment manufacturers the opportunity to choose between two options:

- manufacturers would be allowed to exempt 700 pieces of equipment over seven years, with one engine family; or,
- manufacturers using the small-volume allowance could exempt
 - 525 machines over seven years (with a maximum of 150 in any given year) for each of the three power categories below 175 horsepower, and
 - 350 machines over seven years (with a maximum of 100 in any given year) for the two power categories above 175 horsepower.

Concurrent with the revised caps, manufacturers could exempt engines from more than one engine family under the small-volume allowance program. Based on sales information for small businesses, we estimated that the alternative small-volume allowance program to include lower caps and allow manufacturers to exempt more than one engine family would keep the total number of engines eligible for the allowance at roughly the same overall level as the 700-unit program.

We believe that these provisions will afford small manufacturers the type of transition leeway recommended by the Panel. Further, these transition provisions could allow small business equipment manufacturers to postpone any redesign needed on low sales volume or difficult equipment packages, thus saving decreasing the strain on financial resources and- in many cases, limited- engineering personnel. Within limits, small business equipment manufacturers would be able to continue to use their current engine/equipment configuration and avoid out-of-cycle equipment redesign until the allowances are exhausted or the time limit passes.

We are not finalizing the requirement that small equipment manufacturers and importers have reported equipment sales using certified engines in model year 2002 or earlier. Please see

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Section III.C.2.a.ii of the preamble for a detailed discussion on our decision to eliminate this requirement from this rule.

We are also finalizing three additional provisions. Two of these provisions are being finalized for all equipment manufacturers, and therefore small business equipment manufacturers may also take advantage of them. These are the Technical Hardship Provision and the Early Tier 4 Engine Incentive Program, and are discussed in greater detail in Sections III.B.2.b and e of the preamble. The third provision is being finalized for small business equipment manufacturers only, for the 20-50 hp category. This provision is discussed in greater detail in Section III.C.2.b.ii of the preamble.

11.6.3 Transition and Hardship Provisions for Nonroad Diesel Fuel Small Refiners

11.6.3.1 Panel Recommendations

During the SBREFA process, the Panel considered a range of options and regulatory alternatives for providing small refiners with flexibility in complying with new sulfur standards for nonroad diesel fuel. Taking into consideration the comments received on these ideas during the outreach meetings with SERs, as well as additional business and technical information gathered about potentially affected small entities, the Panel recommended that whether we propose a one-step or a two-step approach, we should provide for delayed compliance for small refiners as shown in Table 11-3 below.

Table 11-3
SBREFA Panel Small-Refiner Options Under
Potential 1-Step and 2-Step Nonroad Diesel Base Programs
Recommended Sulfur Standards (in parts per million, ppm) ^a

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015+
1-Step Program										
Non-small ^b	--	--	15	15	15	15	15	15	15	15
Small	--	--	--	--	--	--	15	15	15	15
2-Step Program										
Non-small ^c	--	500	500	500	15	15	15	15	15	15
Small	--	--	--	--	500	500	500	500	15	15

^a New standards are assumed to take effect June 1 of the applicable year.

^b Assumes 500 ppm standard for marine + locomotive fuel for non-small refiners for 2008, and for small refiners for 2012 and later.

^c Assumes 500 ppm standard for marine + locomotive fuel for non-small refiners for 2007, and for small refiners for 2010 and later.

The Panel also recommended that we propose certain provisions to encourage early compliance with lower sulfur standards. The Panel recommended that we propose that small refiners be eligible to select one of the two following options (with the maximum per-gallon sulfur cap for any small refiner remaining at 450 ppm):

- *Credits for Early Desulfurization*- The Panel recommended that we propose, as part of an overall trading program, a credit trading system that allows small refiners to generate and sell credits for nonroad diesel fuel that meets the small-refiner standards earlier than that required in the above table. Such credits could be used to offset higher sulfur fuel produced by that refiner or by another refiner that purchases the credits.
- *Limited Relief on Small-Refiner Interim Gasoline Sulfur Standards*- The Panel recommended that a small refiner producing its entire nonroad diesel fuel pool at 15 ppm sulfur by June 1, 2006, and that chooses not to generate nonroad credits for its early compliance, receive a 20 percent relaxation in its assigned small-refiner interim gasoline sulfur standards.

The Panel recommended that we propose small refiner hardship provisions modeled after those established under the gasoline sulfur and highway diesel fuel sulfur programs (see 40 CFR 80.270 and 80.560). Specifically, it was recommended that we propose a process that, like the hardship provisions of the gasoline and highway diesel rules, would allow small refiners to seek case-by-case approval of applications for temporary waivers to the nonroad diesel sulfur standards, based on a demonstration of extreme hardship circumstances. This provision was recommended as it would allow domestic and foreign refiners, including small refiners, to request additional flexibility based on a showing of unusual circumstances resulting in extreme hardship and significantly affecting the ability of the small refiner to comply by the applicable date, despite its best efforts.

11.6.3.2 What We Proposed

We proposed the small refiner transition provisions as recommended by the Panel for a two-step program (as we chose to propose a two-step fuel implementation program), which are shown in Table 11-4 below.

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Table 11-4
Small-Refiner Options 2-Step Nonroad Diesel Base Programs
Recommended Sulfur Standards (in parts per million (ppm))^a

Under 2-Step Program	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015+
Non-small ^b	—	500	500	500	15	15	15	15	15	15
Small	—	—	—	—	500	500	500	500	15	15

^a New standards are assumed to take effect June 1 of the applicable year.

^b Assumes 500 ppm standard for marine + locomotive fuel for nonsmall refiners for 2007 and later and for small refiners for 2010 and later.

The proposed provisions were to address the concerns that small refiners raised during the SBREFA process and during the development of the proposal, while still expeditiously achieving air quality benefits and ensuring timely availability of 15 ppm nonroad diesel fuel for the introduction of 2011 model year nonroad diesel engines and equipment.

In accordance with the Panel recommendation of encouraging early compliance with the standards, we proposed that small refiners be able to choose between the two Panel-recommended options discussed above (‘Credits for Early Desulfurization’ and ‘Limited Relief on Small-Refiner Interim Gasoline Sulfur Standards’) to provide incentives for such early compliance. Following the Panel’s recommendation, we proposed that the per-gallon cap for either option could not exceed 450 ppm under any circumstances (this is also consistent with the gasoline sulfur program).

For the ‘Credits for Early Desulfurization’ option, we proposed that a small refiner would be able to generate NRLM diesel sulfur credits for production of 500 ppm NRLM diesel fuel before June 1, 2010, and for production of 15 ppm nonroad fuel from June 1, 2010 through May 31, 2012. During discussions with small refiners during the development of the proposal, some small refiners indicated that they might find it necessary to produce fuel meeting the nonroad diesel sulfur standards earlier than required under the small-refiner program. These small refiners listed various reasons for this, including: a limited number of grades of diesel fuel that their respective distribution systems would carry; economically advantageous to make 500 ppm or 15 ppm fuel earlier so as not to lose market share; and one small refiner indicated that it may decide to desulfurize its nonroad pool at the same time as its highway diesel fuel, in June of 2006 (due to limitations in its distribution system and to take advantage of economies of scale).

For the option of ‘Limited Relief on Small-Refiner Interim Gasoline Sulfur Standards’, we proposed that a small refiner qualifying for this option would receive a 20 percent revision in its interim small-refiner gasoline sulfur standards for the duration of the program (i.e., through either 2007 or 2010, depending on whether the refiner had extended its participation in the gasoline sulfur interim program by complying with the highway diesel standard at the beginning of that program (June, 2006, as provided in 40 CFR 80.552(c))), beginning January 1, 2004. In

addition, we proposed that a small refiner wishing to use this option would be required to produce a minimum of 85 percent of the volume represented by its non-highway distillate baseline percentage at 15 ppm by June 1, 2006. Further, if the refiner began to produce gasoline in 2004 at the higher interim standard of this provision but then either failed to meet the 15 ppm standard for its nonroad fuel or failed to meet the 85 percent requirement, the small refiner's original interim gasoline sulfur standard would be reinstated. The refiner would then need to compensate for the higher gasoline levels that it had enjoyed by either purchasing gasoline sulfur credits or producing an equivalent volume of gasoline below the required sulfur levels.

We also requested comment on a slightly different compliance schedule which would have required small refiners to produce 15 ppm nonroad diesel fuel beginning June 1, 2013, one year earlier than proposed above. Such a schedule would align the end of the interim small-refiner provisions with the end of the proposed phase-in for nonroad engines and equipment and eliminate higher sulfur nonroad fuel from the distribution system by the time all new engines required 15 ppm fuel.

We also proposed small refiner hardship provisions, as recommended by the Panel, which are identical to those offered under the gasoline sulfur and highway diesel fuel sulfur programs. These provisions would be evaluated on a case-by-case basis to provide short-term relief to those refiners needing additional lead time due to extreme hardship circumstances.

11.6.3.3 Provisions in the Final Rule

In addition to regulating nonroad diesel fuel to a 15 ppm sulfur limit, we are also finalizing a 15 ppm standard for locomotive and marine diesel fuel. As a result, we have modified the proposed provisions to also incorporate flexibility for small refiners in meeting the 15 ppm locomotive and marine standard. Given the regulatory transition provisions that we are finalizing for small refiners and small terminal operators, we are confident about going forward with the 500 ppm sulfur standard for NRLM diesel fuel in 2007, and the 15 ppm sulfur standard for nonroad diesel fuel in 2010 and locomotive and marine diesel fuel in 2012, as part of our general program.

We are finalizing the Panel's recommendation of delayed compliance for small refiners along with transition provisions to encourage early compliance with the new standards. The transition provisions that we are finalizing for small refiners are as follows:

- *NRLM Delay Option*- Small refiners will be required to comply with the standards set out in Table 11-5 below, meeting the 500 ppm sulfur standard in 2010 and the 15 ppm sulfur standard in 2014.^D This is identical to the relief proposed in the NPRM (which small refiners considered sufficient and supported) with the exception that it applies not only to

^D Since new engines with sulfur sensitive emission controls will begin to become widespread during this time, small refiner fuel will need to be segregated and only supplied for use in pre-2011 nonroad equipment or in locomotives or marine engines.

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nonroad fuel, but also to locomotive and marine fuel. However, this delay option is not being finalized for the Northeast and Mid-Atlantic areas due to the removal of the heating oil marker in these areas (see discussion in Section V of the preamble). Removal of the marker provision for heating oil in these areas will help to alleviate the concern raised by small terminal operators in their comments regarding the cost of adding a marker to heating oil. At the same time, its removal is not expected to impact small refiners since we do not anticipate that they would have marketed fuel in this area. Further, this provision will be finalized in Alaska only if a refiner gets an approved compliance plan for segregating their fuel to the end user.

- *The NRLM Credit Option-* Some small refiners have indicated that they might need to produce fuel meeting the NRLM diesel fuel sulfur standards earlier than required under the small refiner program described above (distribution systems might limit the number of grades of diesel fuel that will be carried, it may be economically advantageous to make compliant NRLM diesel fuel earlier to prevent losing market share, etc.) This option allows small refiners to participate in the NRLM diesel fuel sulfur credit banking and trading program discussed in Section IV of the preamble. Generating and selling credits could provide small refiners with funds to help defray the costs of early NRLM compliance.
- *The NRLM/Gasoline Compliance Option-* This option is available to small refiners that produce greater than 95 percent of their NRLM diesel fuel at the 15 ppm sulfur standard by June 1, 2006 and elect not to use the provision described above to earn NRLM diesel fuel sulfur credits for this early compliance.^E For small refiners choosing this option, the applicable small refiner annual average and per-gallon cap gasoline sulfur standards will be increased by 20 percent for the duration of the interim program; however, in no case may the per-gallon gasoline sulfur cap exceed 450 ppm.

^E This is down from the 100% requirement proposed to allow for some contamination losses in the process of delivering fuel from the refinery. Production volumes in the final rule are based upon actual delivered volumes. The 5% allowance for greater than 15 ppm fuel should provide adequate flexibility for any refiner's contamination issues, while not providing any opportunity to significantly alter their compliance plans.

Table 11-5
Sulfur Standards for the NRLM Diesel Fuel Small Refiner Program
(in parts per million (ppm))^a

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015+
Non-Small- NR	--	500	500	500	15	15	15	15	15	15
Non-Small- LM	--	500	500	500	500	500	15	15	15	15
Small- all NRLM	--	--	--	--	500	500	500	500	15	15

Notes:

^a New standards are assumed to take effect June 1 of the applicable year.

A small refiner may choose to use the relaxed standards (the NRLM Delay option), the NRLM Credit option, or both in combination. Thus any fuel that it produces from crude at or below the sulfur standards earlier than required will qualify for generating credits. However, the NRLM/Gasoline Compliance option may not be used in combination with either the NRLM Delay option or the NRLM Credit option, since a small refiner must produce at least 85 percent of its NRLM diesel fuel at the 15 ppm sulfur standard under the NRLM/Gasoline Compliance option.

Combined with the transition provisions for small refiners, the compliance schedule that we are adopting will achieve the air quality benefits of the nonroad diesel program as soon as possible, while helping to ensure that small refiners will have adequate time to raise capital for new or upgraded fuel desulfurization equipment. Most small refiners have limited additional sources of income beyond refinery earnings for financing and typically do not have the financial backing that larger and generally more integrated companies have. They can therefore benefit from this additional time to accumulate capital internally or to secure capital financing from lenders. This will help to offset the disproportionate financial burden facing small refiners.

We recognize that while the sulfur levels in the proposed program can be achieved using conventional refining technologies, new technologies are also being developed that may reduce the capital and/or operational costs of sulfur removal. We believe that allowing small refiners some additional time for newer technologies to be proven out by other refiners may have the added benefit of reducing the risks faced by small refiners. Further, this additional time may also increase the availability of engineering and construction resources. Some refiners will need to install additional processing equipment to meet the nonroad diesel sulfur requirements. Vendors will be more likely to contract their services with the larger refiners first, as their projects will offer larger profits for the vendors. Therefore, we anticipate that there may be significant competition for technology services, engineering resources, and construction management and labor. Temporarily delaying compliance for small refiners will allow for lower costs of improvements in desulfurization technology and would spread out the demand for construction and engineering resources, and likely reduce any cost premiums caused by limited supply.

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11.6.4 Transition and Hardship Provisions for Nonroad Diesel Fuel Small Distributors and Marketers

11.6.4.1 Panel Recommendations

During the SBREFA process, we were considering both a one-step fuel approach, and the two-step approach that we are finalizing. The Panel recognized that a two-step fuel approach would include the possibility of there being two grades of nonroad diesel fuel in the market place for at least a transition period, the Panel recommended that we study the issue of multiple fuel grades in the distribution system further during our development of the NPRM. In discussions that took place during the SBREFA process, distributors supported a one-step approach as it would have no significant impact on their operations. However, they did offer suggestions on how they might deal with this issue, but indicated that there would be adverse impacts in some circumstances. (A more complete discussion of costs and related issues relevant to fuel distributors under the proposed program is located in Chapter 7 of the Draft Regulatory Impact Analysis.)

11.6.4.2 What We Proposed

Our proposed fuel sulfur program was designed to minimize the need for additional product segregation and the associated feasibility and cost issues for fuel distributors associated with it. Beyond the accommodation of fuel distributor concerns during the overall design of the proposed program, we did not believe it possible for us to provide special provisions for particular (i.e., small) fuel distributors to further limit the potential impact of the proposed rule. However, to allow for a smooth transition of diesel fuel in the distribution system to 15 ppm, we proposed that parties downstream of the refineries be allowed a small amount of additional time to turnover their tanks to 15 ppm. Specifically, we proposed that at the terminal level, nonroad diesel fuel would be required to meet the 15 ppm standard beginning July 15, 2010. At bulk plants, wholesale purchaser-consumers, and any retail stations carrying nonroad diesel, this fuel would have to meet the 15 ppm standard by September 1, 2010. The proposed transition schedule for compliance with the 15 ppm standard at refineries, terminals, and secondary distributors would be the same as those allowed under the recently promulgated highway diesel fuel program. Lastly, to avoid the costs associated with segregating 500 ppm NRLM diesel fuel from 500 ppm highway fuel, we proposed that the existing requirement that NRLM diesel fuel be dyed leaving the refinery would need to be made voluntary (this element of the proposed rule is discussed in more detail in Section 11.7 of the proposed RIA).

11.6.4.3 Provisions in the Final Rule

We are finalizing provisions to alleviate the problems raised in the public comments on our NPRM regarding small terminal operators (heating oil marker requirements would force small terminal operators to install expensive injection equipment and they would not be able to recoup these costs). To decrease the burden on these small operators, we are not requiring the addition of a fuel marker to home heating oil for terminals in much of PADD 1 (Northeast/Mid-Atlantic Area). This Northeast/Mid-Atlantic Area covers the vast majority of heating oil that will be

marketed; however, we are not allowing small refiner or credit fuel to be sold in the Northeast/Mid-Atlantic Area. Further, we expect that few terminals outside of Northeast/Mid-Atlantic Area would need to put in injection equipment, since very little fuel above 500 ppm will be marketed outside of this area except directly from the refinery gate.

11.7 Conclusion

Throughout the entire rulemaking process, we conducted substantial outreach- including convening a Panel during the SBREFA process as well as meetings with other stakeholders- to gather information about the effect of this final rule on small entities. We also took into account comments received during the public comment period and information from contractor studies in developing regulatory transition provisions to ease the burden on small entities. From this information (and performing a cost-to-sales ratio test- a ratio of the estimated annualized compliance costs to the value of sales per company)^F, we found that approximately 4 percent (13 companies) of small entities in the engine and equipment manufacturing industry were affected between 1 and 3 percent of sales (i.e., the estimated costs of compliance with the final rule will be greater than 1 percent, but less than 3 percent, of their sales). One percent of small entities (4 companies) were affected at greater than 3 percent. In all, 17 of the 518 potentially affected small engine and equipment manufacturers are estimated to have compliance costs that could exceed 1 percent of their sales.

Similarly, small refiners in general would likely experience a significant and disproportionate financial hardship in complying with the fuel-sulfur requirements in this rule. One indication of this disproportionate hardship for small refiners is the relatively high projected cost per gallon for producing compliant nonroad diesel fuel. Refinery modeling (of all refineries) indicates that without special provisions, refining costs for small refiners on average would be about 2.3 cents per gallon higher than the costs for non-small refiners. The majority of the cost for meeting the fuel requirements in this final rule are related to refining, with only 15 to 25 percent of the estimated costs being related to distribution. Allowing highway and off-highway diesel fuel meeting the same sulfur specification to be shipped fungibly until it leaves the terminal obviates the need for additional storage tankage in this segment of the distribution system.^G The final rule allows 500 ppm highway and 500 ppm NRLM fuel to be shipped fungibly as proposed. However, it also allows high sulfur NRLM and heating oil to be shipped fungibly. Furthermore, the final rule allows 500 ppm off-highway diesel engine fuel to be mixed with high-sulfur diesel fuel as long as its designation changes.

^F The cost-to-sales ratio test assumes that control costs are completely absorbed by each entity and does not account for or consider interaction between manufacturers/producers and consumers in a market context.

^G Including the refinery, pipeline, marine tanker, and barge segments of the distribution system.