Control of Emissions from Marine SI and Small SI Engines, Vessels, and Equipment

Summary and Analysis of Comments

Chapter 1
General and Cross Program

Assessment and Standards Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

EPA United States Environmental Protection Agency

EPA420-R-08-016
September 2008

1 Rulemaking Process and Cross-Program Issues

What We Proposed:

The comments in this section generally correspond to Sections I, II, VIII, IX, XI, XII, XIII, and XIV of the preamble to the proposed rule, where we give an overview of the rulemaking, describe the process for public participation, and detail a range of technical amendments that apply to programs other than those that are the focus of the proposed emission standards. The applicable regulatory provisions for cross-program issues are in 40 CFR parts 1027, 1065, 1068, and 1074. In addition, we proposed technical amendments to specific programs in 40 CFR 89, 90, 91, 94, 1033, 1039, 1042, 1045, 1048, 1051, 1054. The Regulatory Impact Analysis describes the calculated air quality and benefits associated with the proposed standards in Chapters 2 and 8, respectively.

1.1 General input

1.1.1 Broad support and general observations

What Commenters Said:

EMA commented that it has been an active participant in the development of the NPRM for the next-phase Small SI engine standards. Specifically, EMA has worked to help EPA staff determine: (i) the most effective exhaust emission control technologies that could be applied to Small SI engines; (ii) the most effective evaporative emission control technologies that could be applied to Small SI engines and the equipment that they power; (iii) limitations on the applicability of such emission control technologies to Small SI engines and the equipment that these engines power; and (iv) the optimized timeline for deploying the available emission control technologies into the marketplace. The net result of that collaborative process is an NPRM that truly and properly reflects the maximum achievable emission reductions for Small SI engines and the equipment that they power. In that regard, EMA greatly appreciates the time and effort that have gone into the development of the pending rulemaking -- a rulemaking that has set forth extremely challenging and dramatic, but nonetheless potentially achievable, emission reduction targets. Indeed, the effort that has gone into this collaborative rulemaking has resulted in the promulgation of an overall framework of technology-forcing standards and accompanying regulations that are at the very limit of feasibility and implementability. As a consequence, that overall framework needs to be maintained in any final rule that results from the NPRM, since any potential increased stringency of the proposed standards or the overall regulatory program would necessarily result in an infeasible and nonimplementable rule.

EMA continued to comment that the NPRM properly recognizes the inherent constraints on the transfer of advanced exhaust emission control systems to Small SI engines, and appropriately limits the efficiency of the required aftertreatment to achieve the proposed standards to those levels that can be effectively implemented taking into consideration, among other things, noise and safety. Similarly, the NPRM properly recognizes that evaporative emission control of Small SI engines and the equipment these engines power may involve the

engine manufacturer, the equipment manufacturer, or the component supplier. Accordingly, EMA supports the overall framework of the NPRM, and urges EPA to finalize a rule that preserves that framework in order to maintain the feasibility of the pending rulemaking.

EMA generally supports the NPRM's approach to the certification process and the standardization of testing requirements. Certification is critical to the creation of a level playing field. Manufacturers must have confidence that all competitors are required to meet the same requirements, and are subject to the same liabilities with respect to emission related product performance and warranty. Approved alternate test procedures must be available for all manufacturers without subsequent approval. EMA recommends that approved alternative procedures for emission testing, both exhaust and evaporative, and exhaust emission deterioration factor determination be documented and posted on the EPA website for all manufacturers to see and use. In addition, EMA has the following specific concerns with respect to the NPRM's proposed certification and testing requirements that should be resolved in the final rule. (see section 1054.245(b)(9)).

EMA commented on §1065.12 "Approval of alternate procedures." that approved alternate test procedures must be available for all manufacturers without subsequent approval. EMA recommends that approved alternative procedures be documented and posted on the EPA website for all manufacturers to see and use.

Kohler Co. is committed to participating with government and regulatory agencies in the development of responsible environmental law and regulations. Kohler believes in harmonizing, to the greatest extent possible, the EPA Phase 3 regulation with the California Tier III regulation. A 50-state regulation is in the best interest of the industry and the Phase 3 regulation reasonably balances the benefit to the environment with the additional product costs of compliance. Kohler believes the resulting compliant product will perform satisfactorily in every way, including safety. Kohler agrees with the overall framework of the NPRM for Phase 3 regulations and has participated in and publicly supported EPA's efforts in developing the Phase 3 regulation. However, Kohler has some concerns with the details of the regulation. There are a few aspects of the regulation on which Kohler feels compelled to provide additional comment. These include: determining engine displacement for the LSI exemption, exhaust emission calculations, transparency of approved alternative emission test cycles, allowable maintenance for DF testing, and record keeping/reporting.

NMMA commented that its members are supportive of EPA's proposal to control evaporative and exhaust emissions from marine SI engine s and fuel system components. NMMA members are committed to producing environmentally responsible products. Over the years, the recreational marine industry has devoted significant time and resources to ensure that they are in compliance with all applicable federal environmental and safety regulations as well as recommended industry "best practices" and standards. NMMA also has worked closely with EPA on the implementation of several important regulatory programs, including this current proposal. With all of these rulemakings, NMMA has appreciated EPA's willingness to consider additional information and data from NMMA members and work collaboratively with the recreational marine industry to address concerns which the industry has had with the specifics in these rulemakings.

Indmar commented that they support the proposed federal emission regulations for new marine spark-ignited sterndrive/inboard engines that will substantially reduce emissions from these engines. There are a few areas that they would suggest alternative language or changes. Indmar Products supports the enactment of the proposed Federal sterndrive/inboard exhaust emissions standards with the noted changes.

Overall, BRP commented that they are supportive of EPA's proposal to control evaporative and exhaust emissions from marine SI engines and fuel system components and to the revisions of the regulations impacting off-road recreational vehicles and engines. Over the years, BRP has devoted significant time and resources to ensure compliance with all applicable federal environmental and safety regulations as well as recommended industry "best practices" and standards. BRP also has worked closely with EPA on the implementation of several important regulatory programs, including this current proposal. With all of these rulemakings, they have appreciated EPA's willingness to consider additional information and data.

Mercury Marine supports EPA's proposal to control evaporative and exhaust emissions from marine SI engines and fuel system components. They are committed to producing environmentally responsible products. Over the years, the recreational marine industry has devoted significant time and resources to ensure that they are in compliance with all applicable federal environmental and safety regulations as well as recommended industry "best practices" and standards. Mercury Marine has worked closely with EPA on the implementation of several important regulatory programs, including this current proposal.

Mercury Marine has a few remaining concerns regarding the technology, timing, and implementation required by the proposal. Catalysts and low permeation hoses are available and can be incorporated into marine exhaust and fuel systems. However, there are market issues, some that are out of their control, that have an impact on our abilities to meet some of the proposed standards in the proposed timeline. Therefore, they will propose alternatives to the items they have issues on that will provide EPA with emissions reductions but maintain their business, customers, and employees. If the issues they have raised in these comments are adequately addressed, then Mercury Marine fully supports this rule.

Yamaha is supportive of EPA's proposal with the addition of NMMA industry comments to control evaporative and exhaust emissions from Marine SI engines and fuel systems components. Over the past many years Yamaha has worked closely with the EPA on other rulemakings for motorsports products on both evaporative and exhaust emission controls. With all these rulemakings Yamaha has appreciated EPA's willingness to consider additional information and data from Yamaha and work with the industry to address concerns and issues relative to specifics in these rulemakings. It is Yamaha's position that although this proposal is very comprehensive and they are in general agreement with its intent, however there are still a few remaining concerns outstanding that need to be addressed regarding technology availability and implementation timing of this proposal. As they hope, these comments along with those submitted with their approval of the NMMA will demonstrate the need for additional lead time to design, manufacture and implement effective controls for exhaust and evaporative emissions.

Yamaha also will offer comments on other aspects of the proposal in regards to certification, ABT and compliance test protocols.

Volvo Penta commented that “care for the environment” is a core corporate value of the entire Volvo Group, including Volvo Penta. Volvo Penta supports EPA’s proposal to control exhaust emissions from SD/I engines, and has been committed to producing environmentally responsible products. Over the years, Volvo Penta has devoted significant time and resources to ensure their products comply with all applicable federal environmental and safety regulations as well as recommended industry standards. During the past several years, Volvo Penta has worked closely with the National Marine Manufacturers Association (NMMA) and the EPA to craft a workable solution to emissions concerns. Throughout this process, Volvo Penta has appreciated EPA’s willingness to consider additional information and data from the industry. These collaborative efforts have reduced industry concerns regarding the proposed rule. The comments included reflect the Volvo Penta's few remaining issues of concern:

Euromot commented that they have reviewed the proposed Phase 3 regulation within their membership and they fully support the OPEl comments. As established manufacturers with a long compliance history they understand the new concept of EPA for imports (and exports). The changes proposed by the OPEI comments are essential for the Euromot members to be present on the market in the future. Without these changes the regulation would be not practical and a dramatic burden (financial and administrative) would be laid to the industry.

In a public hearing, Ilmor stated that broadly speaking, Ilmor supports the proposed EPA Rule.

Pleasurecraft Marine commented in a hearing that their company is fully supportive of emission reductions and is working diligently to solve the many complex technical and implementation issues associated with manufacturing a catalyst controlled engine. They would like to thank the EPA for their insights in crafting a document that, with minor changes, will be of great benefit to our industry, the boating community and the environment.

Brunswick supports EPA's efforts of improving the environment through cleaner products.

Inca does support the need for control of evaporative emissions through low permeation fuel tanks, diurnal emission controls, and low permeation hose. However, due to the direct correlation their products have with boating safety they want to be sure that the requirements of this standard do not create a low emission product that is inferior in quality to the current product that has been successful in the marine industry for years.

Heraeus commented that their small engine solutions provide a variety of different catalyst solutions. They provide effective conversion of the bad stuff coming out of the engine. They have catalysts which match the durability needed, in other words, addressing the DF factor for the engine application. And an engine exhaust catalyst is really quite a cost-effective approach. They support the proposed EPA Phase 3 emissions regulations for Class I and Class II

nonroad spark-ignition engines. Heraeus is ready and believes this rule should be finalized as soon as possible.

MeadWestvaco Corporation supports the EPA's proposal to control evaporative emissions from marine SI engines and fuel system components and is committed to providing products used to control these emissions.

NACAA strongly supports prompt EPA action to reduce emissions from these sources. They believe this long-awaited proposal – which includes HC, NOx, and carbon monoxide (CO) exhaust emission standards, as well as evaporative emission standards – is a critically important step forward.

EVCC commented that as their technology has proven reductions in HC+NOx of up to 98.9% on a two-stroke engine and 90% on a four-stroke engine (while also significantly reducing CO), they are not only in full support of the current regulations, but they encourage our organizations to set even more stringent standards in the near future.

Ozone Transport Commission (OTC) and Maryland support the EPA's effort to regulate emissions from nonroad spark-ignition engines, vessels, and equipment. OTC has anticipated the EPA's proposed regulation. In a March 14, 2006 letter to the EPA Administrator several Midwest and OTC states urged the EPA to promulgate the regulations for nonroad spark-ignition engines. As the letter stated, this source category "has the potential to provide very significant reductions." Additionally, the OTC adopted Resolution 06-02 on June 7, 2006 requesting that EPA develop and implement a strong national program reflecting current technology advancements regarding small engine emissions. The OTC is encouraged by the May 18, 2007 proposal.

NESCAUM (Northeast States for Coordinated Air Use Management) submitted comments on EPA's Proposed Rule for Control of Emissions from Nonroad Spark-Ignition (SI) Engines and Equipment commending EPA and strongly supporting the goals of this rulemaking effort. NESCAUM is an association of state air pollution control agencies in Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.

The Mid-America Regional Council (MARC) Air Quality Forum, created in accordance with Section 174 of the Clean Air Act to coordinate the development and implementation of air quality policy in the bi-state Kansas City region, wishes to express its strong support for EPA's proposal to set federal emissions standards for small spark-ignition engines. The public health impacts of ground-level ozone and fine particulates are well documented, and to the extent that the proposed rule will lead to significant and measurable reductions in both pollutants nationally, they urge EPA to implement the small engine rule as expeditiously as possible.

The California Air Resources Board (California ARB) commented that the federal Clean Air Act (CAA) Amendments of 1990 preempt California from controlling emissions from new farm and construction equipment under 175 horsepower (hp). Because of this preemption, significant emissions from these engines are beyond California ARB's authority to regulate, and California ARB must rely on EPA to establish regulations. Furthermore, it is important that EPA

also adopt more stringent emission standards for nonpreempted engines, such as those used in marine applications. Federally certified engines used in marine vessels can be used in California which could impact California's ability to meet clean air goals. Adoption of the proposed regulation outlined in the proposed rule by EPA is necessary for the protection of public health in California and to comply with air quality standards. New stringent and cost effective standards should be adopted for these categories in a timely manner to ensure that the cleanest engines and equipment be introduced into the fleet at the earliest possible date. In general, California ARB supports the direction that EPA is taking to control emissions from nonroad spark-ignition engines and equipment included in this notice of proposed rulemaking (NPRM).

The South Coast Air Quality Management District (SCAQMD) staff appreciates this opportunity to provide formal comments on the proposed regulation for Nonroad Spark- Ignition Engines and Equipment. Although they commend the EPA's efforts in developing this proposal, the SCAQMD staff believes that the proposed regulations must be further strengthened in order for California and in particular, the South Coast Air Basin, to meet applicable federal fine particulate matter (PM2.5) and 8-hour ozone air quality standards in an expeditious manner.

The NJDEP supports the adoption of federal emission standards, which are consistent with standards adopted by California ARB. With respect to the implementation dates, the NJDEP encourages expeditious implementation of the federal standards and requests that the implementation dates be advanced to align more closely with the implementation dates established by California ARB.

Wisconsin DNR commends EPA for its leadership in issuing this proposed rule and seeking comments on the merits of better emission standards. They support EPA's proposal to set stringent emission standards for new nonroad spark-ignition engines, equipment, and vessels. Emissions from the engines covered by this proposal are substantial that contribute to unhealthful concentrations of PM, ozone, CO, and toxic air pollutants, which translate into serious adverse health impacts. The proposal would significantly reduce harmful exhaust emissions as well as evaporative emissions from these sources – which include HC, NOx, and CO.

New York State DEC supports EPA's proposal to set stringent emission standards for new nonroad spark-ignition engines, equipment, and vessels. Emissions from the engines covered by this proposal are substantial that contribute to unhealthful concentrations of PM, ozone, CO, and toxic air pollutants, which translate into serious adverse health impacts. The proposal would significantly reduce harmful exhaust emissions as well as evaporative emissions from these sources – which include HC, NOx, and CO.

New York State DEC continued to comment that the importance of reducing emissions from small spark-ignition engines used in applications such as lawn and garden equipment, and recreational marine emissions, cannot be overstated. Most of the operation of these engines occurs during warm weather conducive to the formation of ground level ozone, and their ozone precursor emissions are poorly controlled compared to other classes of engines and vehicles. Even with the proposed standards, an hour of operation of these engines will yield hydrocarbon and oxides of nitrogen emissions comparable to driving an average (Tier 2 Bin 5) new light duty

vehicle hundreds, in some cases thousands, of miles. Indeed, it is likely that many households produce more ozone-forming emissions maintaining their lawn than commuting to work. Considering the comparatively high emissions levels of these engines, and their increasing importance to emission inventories, we believe that additional future reductions are necessary. The Department urges EPA to continue its efforts to identify emissions control technology that achieves emission reductions beyond what is currently proposed.

New York State DEC continued to comment that although the standards proposed by EPA provide significant and necessary reductions in ozone forming emissions from small land based engines and recreational marine engines, these engines will still be relatively poorly controlled compared to other mobile sources. These engines will still emit ozone precursors out of proportion to their numbers and hours of operation. The disproportionate emissions levels of these engines compared to passenger vehicles shows that there is a need for more stringent standards than the ones currently proposed. EPA research into nonroad spark-ignition engine emissions control is crucial to identifying available technology which can achieve a greater degree of emissions reductions. In particular additional work is needed to facilitate the application of catalysts to outboard and personal watercraft engines, many of which are automotive sized. They urge EPA to continue its efforts in this field, and build on its current success, ultimately promulgating more stringent regulations for all of these classes of nonroad engines.

Pennsylvania DEP strongly supports EPA's action, but offers additional recommendations to strengthen the final regulation. While DEP strongly supports EPA's proposed action to reduce emissions from small land-based and marine spark-ignition engines, equipment, and vessels, and urges EPA to promulgate the final rule as soon as practicable, DEP understands and acknowledges that certain aspects of the proposed rulemaking were delayed by further study mandated by law and that Congress has also expressly precluded states from taking any action more stringent than EPA's on small spark-ignition engines. Therefore, DEP urges EPA to ensure that the final rule is fully implemented expeditiously to achieve the greatest degree of emission reductions.

The Houston-Galveston Area Council (H-GAC) Board of Directors would like to offer general support and comments for the Environmental Protection Agency proposed rule. They greatly appreciate the efforts of the EPA to draft this proposed rule, which targets several of these mobile sources for significant emission reductions that could not otherwise be achieved.

Johnson County, Kansas commented that they are in full support of the proposed regulations on nonroad motor engines. In an effort to lower harmful ozone causing emissions such as those spewed from lawn equipment, they find the proposed standard to be an effective step in improving the health of our social and biotic communities.

Clean Air Watch commented that smog is a serious public health problem: technically known as ozone, smog can cause asthma attacks among children and adults, send people to hospital emergency rooms, and reduce a person's lung capacity. It has even been linked to premature death. The evidence is quite clear that even though we have reduced air pollution through other Clean Air Act standards, such as those for motor vehicles, we still need to make

further progress to protect breathers. Just last Saturday, the Washington Post reported on continuing air pollution problems in the Washington, D.C. area. And our Clean Air Watch surveys verify that similar problems persist in many states. Clean Air Watch continued that EPA's independent science advisers and the agency's own scientists have concluded that existing air quality standards for smog must be made stricter to protect kids with asthma and others. As we clean up cars and trucks, small engines are an increasingly large part of the pollution problem. Cleaning them up absolutely must be part of the solution. EPA's proposed standards are a good step in the right direction. Clean Air Watch commented that it would be better for air quality if they could take effect sooner. They hope we will resist any effort to delay or weaken these standards. They believe EPA's detailed studies have put to rest concerns previously raised about safety. So they encourage EPA to move forward and issue these standards in final form this year.

Environmental Defense strongly supports the immediate issuance of a final rule to control air pollution from spark-ignition marine and small engines in light of the serious public health and welfare problems posed by the exhaust and evaporative emissions from these engines. They believe a final rule that reflects, or is more protective than, the timing and level of reductions currently required by California ARB is achievable, cost-effective and necessary to protect human health and the environment.

N. Leggett offered support of the concept of requiring pollution control technology for spark-ignited engines. However, some fine tuning of the proposed regulations is needed to prevent the regulations from inhibiting progress in the invention of new technology and the training of technologists.

R. Keichline is supportive of the new legislation to reduce air emissions.

A. Swanson commented on a recent EPA air emissions proposal (Docket ID No. EPA-HQ-OAR-2004-0008). The commenter supported the proposal to: a) increase exhaust emission standards for marine spark-ignition engines and small land-based nonroad engines, b) establish new evaporative emission standards for equipment and vessels using these engines. This proposal is reasonable, for these standards would apply only to newly manufactured products, and it would reduce the harmful health effects of ozone and carbon monoxide from these engines, equipment, and vessels if implemented. Thank you for the opportunity to comment, and the commenter hopes that these reasonable regulations will be finalized and implemented in a timely manner.

T. Nixon commented in full support of this, and only wishes it could be implemented sooner. Much small-engine equipment is not needed for businesses or vital household needs, they are luxury goods that contribute to sound and air pollution in recreational and residential areas. The commenter believes that reducing emissions from watercraft will help make boating more pleasant and enjoyable, and these regulations should certainly help clear the air for people in dense urban areas. If higher costs do reduce sales, it may further serve to increase the health of the nation by having people use push-mowers instead of ride-on mowers, and rakes instead of leaf-blowers. Although, admittedly, increased use of snow shovels (vs. snow blowers) could

actually reduce health, as that can be back-breaking work. Good luck getting these new emissions regulations (or some version of them) implemented.

B. Paddock commented that the regulatory analysis persuades the commenter that there are substantial benefits to the human environment to be obtained by adoption of the proposed rules on small engine emissions. The commenter urges EPA to advance the effective date and deadline for implementation of the regulations. These improved products can be built with existing knowledge and technologies as is evident from products sold in California. Low emission mowers and other products should be made available throughout the U.S. at the earliest possible date. The years of delay in the implementation of rule are unnecessary. As a consumer, the commenter wants to buy emissions reduced products now. The cost of gasoline means the commenter will recover the costs of fuel efficiency (and reduced emissions) in a shorter time. Lawn mowing is becoming unaffordable. Coupled with drought and native plant landscaping, the mower industry is likely in for slow period. New, fuel efficient, "greener" low emission mowers offer a reason to buy sooner rather than wait for years for a better product. The same is true for boat motors. The manufacturer who first makes rule compliant products available will see a surge of sales.

Nautigaz commented in their first e-mail that it was for them very good news, it is it for several reasons. Of course they hope to be able to work now, thanks to these new standards, but they also hope to bring a solution which goes in the "direction of the History." If all is not perfect in the USA, they reassure in France it is exactly similar! It is perhaps why our countries are friendly since the Lafayette General.

The Environmental Club of Colorado State University – Pueblo commented that they are overwhelming glad to see that new regulations are going to be implemented restricting air pollutants from lawn mowers and small boat engines. They are very glad that these new regulations are coming to pass. However, they believe that the dates which these regulations will go into effect are too far out. They believe it is more than possible to lessen the period of time until these regulations take effect. Please consider enacting these regulations much sooner, as our Earth desperately needs clean air as do we all.

Letters:

Commenter	Document #
NMMA	0688
EMA	0691
N. Leggett	0603
Johnson County, Kansas	0619
OTC	0678
South Coast AQMD	0704
Maryland	0722
NJ DEP	0710
R. Keichline	0561
A. Swanson	0596
T. Nixon	0599
B. Paddock	0607
Wisconsin DNR	0663
New York State DEC	0659
Nautigaz	0727
Houston-Galveston Area Council	0633
NESCAUM	0641
Environmental Defense	0648
NACAA	0651
Indmar	0667
Bombardier	0674
MeadWestvaco	0723/0724
Volvo Penta	0708
Yamaha	0721
Mercury	0693
The Mid-America Regional Council (MARC) Air Quality Forum	0696
California ARB	0682
Pennsylvania DEP	0676
Kohler	0703
EVCC	0608
Ilmor (hearing)	0642
Pleasurecraft Marine (hearing)	0642
Brunswick	0695
Clean Air Watch (hearing)	0642
Heraeus (hearing)	0642
Inca Molded Products	0700
Environmental Club of Colorado State University – Pueblo	0730
Euromot	0649

Our Response:

We appreciate all comments on the proposed rule; specific responses to the various concerns raised by individual commenters are in the rest of this Summary and Analysis of Comments document.

1.1.2 Legal authority

What Commenters Said:

NACAA commented that emission control requirements for small nonroad spark-ignition and marine spark-ignition engines and equipment should achieve the greatest reductions feasible as soon as possible. In Section 101(a)(3) of the Clean Air Act, Congress vests state and local clean air agencies with "primary responsibility" for the control of air pollution. This is a responsibility they take very seriously. As NACAA seeks to achieve and sustain clean, healthful air throughout the country, they must consider the full measure of emission reductions feasible from every source of pollution as quickly as possible. With respect to nonroad spark-ignition engines smaller than 50 horsepower, however, states and localities other than California, very unfortunately, are preempted from adopting standards or other requirements. Therefore, it is incumbent upon EPA to ensure that this rule achieves the greatest degree of reductions possible as soon as possible.

Environmental Defense commented that Congress is concerned about the air pollution caused by nonroad mobile sources such as the spark ignition marine and small engines subject to this rule, they enacted § 213 as part of the Clean Air Act amendments of 1990. See Pub. L. No. 101-549 § 222, 104 Stat. 2399, 2500-02 (1990) (codified at 42 U.S.C. § 7547). Section 213 instructs EPA to set emission standards for nonroad engines that reflect the "greatest degree of emission reduction achievable". 42 U.S.C. § 7547(a)(3). For this reason, the D.C. Circuit consistently has held these provisions of the CAA to be "technology-forcing." Husquvarna AB v. EPA, 254 F. 3d 195, 200 (D.C. Cir. 2001) (upholding EPA decision to give priority to goal of reducing emissions, over cost, noise, energy and safety factors in setting Phase 2 emission standards for handheld small engines); see also NRDC v. EPA, 655 F.3d 318, 328 (D.C. Cir. 1981) (stating that the legislative history of the CAA demonstrates that Congress intended EPA to "press for development and application of improved technology rather than be limited by that which exists today.") Importantly, Section 213 also directs EPA to set emission standards that: shall take effect at the earliest possible date considering the lead time necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period and energy and safety. 42 U.S.C. § 7547(b). Whether a particular standard satisfies both statutory prongs of Section 213, therefore, involves a question of stringency as well as timeliness. See e.g. Bluewater Network v. EPA, 370 F.3d 1, 21-22 (D.C. Cir. 2004). Clearly, if EPA were to set standards reflecting the "greatest degree of emission reduction achievable" based on technology available in 2007, but not implement such standards until much later, the actual emission reductions resulting from such rules would be minimal, at best. Such standards, even though technology-forcing in 2007, would likely lag behind the technological advances made in the interim years between the initial proposal and the ultimate implementation date. Consistent with the statutory mandate to implement emission standards "at

the earliest possible date", EPA must "provide a reasonable explanation of the specific analysis and evidence upon which the Agency relied." Id. at 21. Anything short of this fails the arbitrary and capricious test applied to EPA rulemaking under the CAA and APA. See Motor Vehicle Mfrs. Assn. v. State Farm Mut., 463 U.S. 29, 52 (1983).

Letters:

Commenter	Document #
Environmental Defense	0648
NACAA	0651

Our Response:

We understand these comments to be generally reinforcing the statutory provisions upon which we based our proposed rule. See the preamble to the final rule and the rest of this document for a description of specific issues related to the timing and feasibility of implementing standards that we believe represent the greatest degree of emission reductions that are achievable at this time.

1.1.3 Process concerns

What Commenters Said:

Environmental Defense commented that most importantly, they believe EPA must act expeditiously in publishing and implementing final rules for these SI engines. Indeed, they believe EPA has already acted unlawfully and in violation of its statutory duties under the Clean Air Act (CAA) and other laws due to the amount of time that has passed since Congress required the Agency to reduce emissions from these engines.

Houston-Galveston Area Council (H-GAC) commented that due consideration should be given to the economic impacts of this rule, particularly on small businesses; however, H-GAC believes that these concerns should not outweigh the more primary concerns of protecting the public health and achieving Clean Air Act compliance. They therefore encourage the EPA to finalize these emission standards before the end of this year at the most stringent levels that are technically feasible to achieve the maximum environmental benefit. H-GAC encourages the EPA to implement the standards as quickly as it is possible to do so, but no later than 2009. This would provide the maximum benefit to their region's air quality improvement efforts.

EMD urges EPA not to do what it has done here – to include in a proposed rule items that are unconnected, or only peripherally connected, to the subject of the rulemaking. The current proposal includes new proposed rules on certification fees and on preemption provisions that are only marginally connected to the spark-ignition engines and equipment that are the main subject of the proposal. The included items are not even listed in the title of the rule proposal. EPA's practice here makes life difficult and increases expense for regulated parties. All manufacturers must read carefully every EPA proposed rule, including those seemingly unrelated to their products, to make sure that EPA has not piggybacked provisions important to their markets on them. EPA should make proposals such as the certification fees rule and the preemption rule the

subjects of separate rulemakings, with their own entries in the Federal Register. There is precedent for such an action; for example, the original rule proposal extending certification fees to nonroad engines 17 stood alone, and was not piggybacked on another rule proposal.

ASTM commented that the following standards referenced have been updated: D 471-98 is now D 471-06; D 323--99a is now D 323-06; E29-93a is now E29-06b. If EPa would like copies of the updated standards, they would be happy to send them.

Letters:

Commenter	Document #
EMD	0687
ASTM	0606
Houston-Galveston Area Council	0633
Environmental Defense	0648

Our Response:

The comments from Environmental Defense summarize the position they took in litigation regarding the applicability of the original statutory deadline for completing this rulemaking. The district court decision upheld EPA's position that the original deadlines no longer applied once Congress adopted a separate requirement to publish a safety study related to the safety implications of new emission standards before proposing such standards (in the docket under EPA-HQ-OAR-2004-0008-0840). Environmental Defense has appealed this decision. We continue to believe that we have not acted unlawfully in completing this rulemaking. While we have worked diligently to complete the rulemaking as quickly as possible, addressing a wide range of technical issues required substantial time and interaction with many interested parties. We believe the result of all of these efforts is a rule that is thorough and effective in achieving our objectives.

We share the perspective of the Houston-Galveston Area Council that the rule should achieve emission reductions to protect public health and meet our statutory obligations while taking into account the particular concerns for small businesses that must meet new requirements. We believe the final rule achieves this balance by including far-reaching emission standards in combination with a variety of provisions to address concerns related to compliance burdens for small businesses. The timing of the final rule is somewhat behind the schedule envisioned at the time of the proposal, but we are able to preserve the most important portions of the implementation schedule described in the proposed rule.

We understand the concerns raised by EMD, however we do not believe they are sufficient to justify excluding the issues from this rulemaking. The inclusion of such broad issues is this rulemaking is appropriate, especially under the new "plain-language" regulatory construct, which allows the use of common procedures across multiple categories. All changes to these common regulations are made through public rulemakings such as this. In addition, we made great efforts to reach out to all affected stakeholders in such rulemakings.

ASTM has further updated its standards beyond the changes described in its comments on the proposed rule. We have included the latest ASTM standards for every reference and appreciate ASTM's eager cooperation in supporting this effort.

1.1.4 Commenters referencing other commenters

What Commenters Said:

Euromot reviewed the proposed Phase 3 regulation within their membership and they fully support the OPEl comments. As established manufacturers with a long compliance history Euromat understands the new concept of EPA for imports (and exports). The changes proposed by the OPEI comments are essential for the Euromot members to be present on the market in the future. Without these changes the regulation would be not practical and a dramatic burden (financial and administrative) would be laid to the industry.

Honda commented that they are a member of the Engine Manufacturers Association (EMA), Outdoor Power Equipment Institute (OPEI), and the National Marine Manufacturers Association (NMMA) and supports the comments submitted by each of these trade associations.

Kohler is a member of the Engine Manufacturer Association (EMA) and the Outdoor Power Equipment Institute (OPEl) and as such supports the written comments being submitted by them.

Arctic Cat is in full support of comments from MIC and ISMA and have no intention of diminishing the importance of additional issues raised by either association by not including specific comments here.

BRP supports the comments submitted by the National Marine Manufacturer's Association (NMMA), International Snowmobile Manufacturer's Association (ISMA), and the Motorcycle Industry Council (MIC). In addition, BRP has individual comments on certain aspects of this regulation which could not be addressed through these organizations. Detailed is a summary of these comments along with additional information to support the NMMA, ISMA, and MIC comments.

Yamaha is supportive of EPA's proposal with the addition of NMMA industry comments to control evaporative and exhaust emissions from Marine SI engines and fuel systems components. As they hope, these comments along with those submitted with their approval of NMMA will demonstrate the need for additional lead time to design, manufacture and implement effective controls for exhaust and evaporative emissions.

EMD has read, agrees with, and supports the comments to be submitted by the Association of American Railroads. They urge EPA to act in accordance with those comments.

Heraeus is very supportive and a member of OPEI Fuel and Exhaust Clean Air Act Committee. Heraeus is also a member of MECA with membership and workshop participation.

OTC and Maryland commented in finalizing this rule. OTC advises EPA to examine closely the recommendations made by the Northeast States for Coordinated Air Use Management (NESCAUM) and the National Association of Clean Air Agencies (NACAA). The recommendations made by these organizations will improve upon EPA's proposal and offer states much needed reduction in ozone forming precursors.

The Mid-America Regional Council (MARC) Air Quality Forum, created in accordance with Section 174 of the Clean Air Act to coordinate the development and implementation of air quality policy in the bi-state Kansas City region, wishes to express its strong support for the EPA proposal to set federal emissions standards for small spark-ignition engines. MARC also shares some concerns raised by the National Association of Clean Air Agencies (NACAA) in its June 5, 2007, testimony to EPA.

The NJDEP supports the comments submitted by the National Association of Clean Air Agencies (NACAA) and the Northeast States for Coordinated Air Use Management (NESCAUM) for the proposed rule.

Pennsylvania DEP concurs in the technical recommendations made by the National Association of Clean Air Agencies (NACAA).

The comment from the Natural Resources Defense Council related to federal preemption of state regulation was co-signed by representatives of Environmental Defense, Friends of the Earth, and Coalition for Clean Air.

Letters:

Commenter	Document #
EMD	0687
Arctic Cat	0709
OTC	0678
Maryland	0722
NJ DEP	0710
NRDC	0690
Bombardier	0674
Yamaha	0721
The Mid-America Regional Council (MARC) Air Quality Forum	0696
Honda	0705
Euromot	0649
Pennsylvania DEP	0676
Kohler	0703
Heraeus (hearing)	0642

1.2 Scope

1.2.1 Handheld exhaust standards

What Commenters Said:

MECA noted that EPA chose not to consider any change in the current Phase II exhaust emission limits for Class III, IV, or V engines used typically on handheld equipment (e.g., chainsaws, string trimmers, hedge cutters). They commented that catalysts are already being used in many (but not all) of these handheld equipment applications. However, engine technology improvements continue to be made on these small spark-ignited engines to further improve engine-out emission characteristics. MECA believes that it is time for EPA to assess the need for further emission reductions from these smaller engines based on the application of advanced engine technologies with properly engineered and cost effective exhaust emission controls like catalyzed mufflers.

NESCAUM also noted that EPA has declined to establish more stringent exhaust emissions standards for handheld equipment beyond the Phase II standards adopted in 2000. The Phase II standards were affirmed by EPA in 2004, based on a technology review, with the final standards taking effect in 2007 for all handheld engine classes. According to the technology review, EPA determined that handheld engines would meet the exhaust emissions standards on schedule, mostly by modifying two-stroke designs to incorporate stratified scavenging with lean combustion, with or without catalytic aftertreatment. Accordingly, NESCAUM fails to see why HC+NOx exhaust emissions standards for Class V handheld engines should remain 44 percent higher than the standards for smaller handheld engines. Their concern is heightened under this proposed rulemaking because, in effect, the Class V engine category will be expanded to incorporate all Class I engines with cylinder displacements less than 80 cc, regardless of whether these engines are used in handheld or nonhandheld applications. While NESCAUM does not object to treating these smaller Class I engines in all respects as Class V engines, they urged EPA to revisit and strengthen the Class V exhaust emissions standards through this rulemaking.

NESCAUM commented that at the time of EPA's technology review in 2004, manufacturers were concentrating their Phase II development efforts on Class IV and smaller displacement engines because these standards were to take effect two years ahead of the Class V engine standards. The speculative concerns regarding technology transfer, safety, performance, weight, and other factors affecting Class V engines were primarily due to the fact that manufacturers had not begun to focus their attention on this particular engine category. EPA's subsequent Technical Study, while confined to larger Class I and to Class II engines, has since established that catalysts can be effectively incorporated into larger engine designs and function without causing some of the problems envisioned by the manufacturers. In addition, NESCAUM noted that at least one equipment manufacturer, Stihl, already has a line of professional grade chainsaws on the market that uses the smaller Class I (soon to be Class V) engines, incorporating stratified scavenging technology and/or catalytic converters to meet emissions standards. They see no basis for allowing Class V engines to certify to the most lenient HC+NOx exhaust standards among small SI engines and therefore urge EPA to adopt more stringent standards. At a minimum, NESCAUM commented that Class V engine standards

should be aligned with those for smaller engines. In addition, they urged EPA to update its technology review of exhaust emissions standards for Class III and IV engines, and as necessary, adopt more stringent standards through subsequent rulemaking.

NY DEC noted that EPA's proposal contains no new standards for engines in handheld equipment, where the proximity of engine exhaust to the operator's breathing space leads to individual toxic exposure concerns in addition to ambient air quality concerns. They commented that additional effort is necessary to identify technology supporting more stringent handheld engine regulations. They urged EPA to continue its efforts in this field, and build on its current success, ultimately promulgating more stringent regulations for all of these classes of nonroad engines.

Letters:

Commenter	Document #
MECA	0668
NESCAUM	0641
NY DEC	0659

Our Response:

In response to the comments that EPA should adopt more stringent emission standards for handheld engines, EPA believes the current Phase 2 standards are the appropriate standards for handheld engines at the current time. In fact, the Phase 2 standards for handheld engines are not yet fully phased-in. For Class III and IV engines, the Phase 2 standards became fully effective, including small volume engine families, in 2007. For Class V engines, the Phase 2 standards became effective in 2007 except for small volume engine families. However, small volume engine families in Class V, which include about half of the Class V engine families, have until 2010 to comply with the Phase 2 standard. Therefore, most of the handheld engine manufacturers are still in the process of redesigning the remaining small volume engine families to meet the Phase 2 standards.

An analysis of the certification data for 2008 model year handheld engines shows that the standards have resulted in widespread use of catalysts on Class III and IV engines, as expected in the final rule. Based on sales estimates, approximately 70% of Class III and IV engines are using catalysts to demonstrate compliance with the Phase 2 standards. (The remaining engines are either 4-stroke engines which can meet the standards without a catalyst, or 2-stroke engines without a catalyst many of which are certified through the use of ABT credits and emit at levels higher than the Phase 2 standard.) In addition, the 2008 certification data shows that few of the Class V engines are using catalysts to demonstrate compliance with the Phase 2 standards, as expected in the final rule. (EPA's certification data can be found on the internet at the following address: http://www.epa.gov/otaq/certdata.htm#smallsi) As detailed in the development of the Phase 2 standards, EPA set the Class V standard at 72 g/kW-hr in response to concerns over heat issues related to the use of catalysts since much of the Class V equipment is used in chainsaws where compact packaging requirements make it hard to design the engine with the increased cooling needed with a catalyst (see 65 FR 24269, April 25, 2000). In response to the comment that the recent testing of catalyst-equipped engines by EPA shows catalysts could be

incorporated into larger engine designs and function "without causing some of the problems envisioned by the manufacturers," EPA notes that the testing was performed on Class I and II nonhandheld engines which are 4-stroke engines. The results of that testing are not applicable to Class V handheld engines which are 2-stroke engines and completely different types of equipment applications offering their own issues with catalyst design and engine cooling.

In conclusion, given that the Phase 2 standards are not fully effective, and given the technologies being used to comply as demonstrated in the most current certification data, EPA believes the Phase 2 emission standards for handheld engines are the appropriate standards for handheld engines at this time. This should not be interpreted to mean that EPA will not revisit the standards for handheld engines in the future. Indeed, under section 213(a) of the Clean Air Act, EPA is required to "promulgate (and from time to time revise) standards" for nonroad engines.

1.2.2 Hobby engines

What Commenters Said:

N. Leggett (0603) commented that independent inventors and experimenters should be encouraged because they develop inventions that are different from the technologies developed by large corporations. There are hobby engines used for radio control models that are larger than 50 cubic centimeters in per-cylinder displacement. Presumably these larger engines would be allowed by the statement in the rules that: "Hobby engines are compression-ignition engines with a per-cylinder displacement of less than 50 cubic centimeters or spark-ignition engines installed in reduced-scale models of vehicles that are not capable of transporting a person." The commenter's interpretation of this definition is that engines larger than 50 cubic centimeters per-cylinder displacement are considered hobby engines if they are installed in a model vehicle. Is this interpretation of this statement correct? If it is not correct, the statement should be modified to make it clear that a small engine in a model vehicle is not covered by these regulations. It is important to keep the model scale engines as a free area for the development and use of engines. This maintains an activity where engine designers and inventors are free to make their own engines without mandated design features. Some of these people use desk top machine shops such as the Sherline miniature lathe and milling machine systems (Reference 1). More people are getting involved with their own machining using computer-controlled systems. Still others are using full-scale metal working lathes and milling machines to build their engines. This developmental freedom is a contrast to the regulated engine world where people are blocked from "tampering" with engine features. Indeed, the very process of invention and creative technology design is the basically playful activity of tampering with and departing from conventional engine design. The commenter stated that we need free spaces for invention to maintain America's position in technology and manufacturing. These engine experimenters also develop precious industrial skills.

N. Leggett (0612) commented that the proposed exemption for reduced scale hobby engines is an excellent idea. Designing and building hobby engines is an excellent way to experiment with engine technology and to develop new engine inventions.

L. White offered concern that this proposed regulation would make illegal the production of hobby kits for the construction of a small engine by an individual or student unless the manufacturers submit to and pass the requisite emission tests. The necessity to get such an engine design or personally built kit approved under these regulations would make hobby and educational engine building difficult at best. Putting emission controls on these engines sufficient to meet these standards is inappropriate for their intended historical, educational, and hobby recreational purpose - especially when these engines are replicas of earlier commercial designs that did not have these controls and when the activity is primarily for hobby, experimental, or personal educational use. The expense of certifying such engines and kits built for personal educational, hobby, or recreational use would put an end to this hobby and this business. The extra weight and complexity of certified engines would also most likely make them unsuitable for a number of hobby uses including powering RC model aircraft and small model water craft. These engines are produced in very limited numbers, are generally of low KW output, and see a very limited number of hours of annual use. The total fuel burn and the total emission output are simply not worth regulating. The commenter proposes that a very specific exclusion be incorporated in the proposed regulations such that these limited output and very occasional use engines and kits and the manufacturers or builders of them be exempted from regulations regarding emissions.

Letters:

Commenter	Document #
N. Leggett	0603
N. Leggett	0612
L. White	0620

Our Response:

The regulations as proposed (and currently existing) would apply the limit of 50 cc per cylinder for hobby engines only for compression-ignition models. This was intended to be a threshold below which there would likely be no commercial application other than for hobby vehicles. Given the confusion illustrated by the comment, we believe it is important to adopt a uniform set of definitions and requirements for all hobby engines and vehicles. We are therefore extending the proposed definition for spark-ignition engines to apply equally to compression-ignition engines. Thus, any engine that is installed in a reduced-scale model of a vehicle that is not capable of transporting a person is exempt from emission standards. This change would also mean that compression-ignition engines smaller than 50 cc per cylinder that are installed in other applications would no longer be exempt. However, we are not aware of any such practice today.

While we agree that there is value in allowing for innovation, development, and training with hobby engines that outweighs the potential environmental effects, we need to draw clear lines to prevent widespread use of an exemption to produce engines that could be used for other purposes. In particular, we see no need to expand the hobby-engine exemption to include larger engines or engines that are not used in reduced-scale models of vehicles for exploring innovation or for education. The Clean Air Act and the regulations contemplate the need for such innovation and development with the testing exemption (§1068.210) and the manufacturer-owned exemption (§1068.215).

1.3 Cross-cutting issues

1.3.1 Import-specific information for certification

What Commenters Said:

California ARB supports EPA's "Special Provisions for Compliance Assurance," and specifically supports the provisions regarding importation data, the assurance of warranty coverage, and bond requirements.

Mercury commented that the proposal contains a number of new requirements in § 1045.205 for the content of the certification application. In particular, EPA is proposing to require engine manufacturers to include additional information for imported engines in § 1045.205(z). Mercury Marine fully endorses these changes and supports EPA's efforts to enforce these rules on imported engines.

OPEI commented that it is difficult to keep intended ports of entry updated in the certification applications, particularly if external shipping firms are used (like DHL etc for air shipments). Customs exist at all ports of entry in the US so this requirement seems unjustified. EPA/Customs keeps a list of all US ports of entry available. All ports of entry should be monitored by US customs and the EPA and they should reinforce the need for proper importation paperwork being submitted and checked to verify compliance via the EPA database. The requirement should be deleted.

EMA commented that the specific port that a manufacturer will use to import engines changes from shipment to shipment. For this reason, the requirement to identify the port(s) where a manufacturer will import engines (see §90.107(d)(15)(i) Application for certification**)** cannot be maintained in a certification document. If required to identify a port in the application, the manufacturer would have to submit a list of all potential ports where it may import engines. Such a list would not provide the sought-after information and would fail to provide the intended benefits associated with having this information. Therefore, this section should be deleted.

EMA commented that the NPRM does not clearly identify who is required to name an agent for acceptance of service on behalf of a manufacturer. While it appears that such a requirement applies only to manufacturers that do not have a U.S. presence capable of accepting service, the final rule should clearly state that such a requirement applies only to entities without a U.S. presence. EMA commented that this can be accomplished by moving section 1054.205(z) so that it is included under (aa). However, if the requirement to name an agent for service remains as a separate requirement under subsection (z), the section should be revised to read as follows: "If you do not have a physical office in the United States with employees capable of being served then you must name an agent for service in the United States. Service on this agent ....."

OPEI commented that EPA requires the location of test facilities in the US where the manufacturer can test engines if EPA selects them for an SEA. OPEI feels this is acceptable for manufacturers that do not have an established presence and compliance history (minimum of 5-years) in the US. For those manufacturers that have an established compliance history, it should not be required that all families can be tested in the US. Handheld engines are very specialized and larger engines are hard to test. This section should be revised to indicate options as follows:

1) Conduct the test in the lab where the certification is conducted, or
2) Guarantee EPA access into any of your test facilities anywhere in the world, or
3) EPA can select a lab to have engines tested in the US (if 1 and 2 are not possible).

NMMA commented that the proposal contains a number of new requirements in § 1045.205 for the content of the certification application. In particular, EPA is proposing to require engine manufacturers to include additional information for imported engines in § 1045.205(z). While NMMA understands that some of this information may be helpful to track engines and avoid problems with foreign companies that are importing and selling engines in the U.S. that may not be covered by valid certificates of conformity, some of these requirements are overly burdensome. Notably, the requirement to list the location of test facilities where engines can be tested may not be available at the time the application is submitted. Several Marine SI engine manufacturers test their engines outside of the U.S. and may not have identified and/or contracted with test labs in the U.S. In addition, there are not that many test facilities in the U.S. that can perform marine engine testing. This is particularly the case with OB engines. To address this problem, NMMA recommends that § 1045.205(z)(3) be revised to state instead: "Provide upon request, ~~T~~the location of test facilities in the United States where you can test your engines if we select them for testing under a selective enforcement audit, as specified in 40 CFR part 1068, subpart E." NMMA is supportive of EPA's efforts to eliminate copy and noncompliant engines from the market and this revision will ensure that the pertinent port and agent information is provided but will not mandate that the manufacturer contracts with a test facility prior to submitting the application.

Suzuki commented that EPA is proposing to require companies that import engines into the United States to identify test locations in the United States that would be used if the Agency requires testing under a selective enforcement audit (SEA). Suzuki is concerned that it will be overly burdensome to specify a test facility well in advance of any actual testing if the importer does not have an existing business relationship with the US-based test facility. Suzuki understands that there are numerous entities certifying and importing outboard engines into the US, and that there can be difficulties with ensuring that the importer will be held accountable should a noncompliance issue exist. EPA's proposal will help to address this concern; however, Suzuki believes it to be overly broad. Suzuki recommends that EPA revise the proposal to consider relevant factors when determining if an importer must declare a test facility in advance of a SEA test order. Suzuki believes that relevant factors could include the length of time an importer or distributor has been certifying engines in the US and/or the certification history of the importer (this could include previous SEA test history, in-use test history, responsiveness to prior Agency information requests, etc .) Alternatively, EPA could allow SEA testing to be conducted at the manufacturer's own testing location if the location was deemed appropriate by EPA.

Honda commented that at the time of certification of both Small SI and Marine SI engines, it may not be possible to name a test facility in the United States that will be a viable option for testing when at some future date EPA requests a manufacturer to perform testing. For some engines that are manufactured or are similar to engines manufactured in the United States, this up-front designation may be reasonable. However, for engines requiring an outside (third party) test facility, it would be more appropriate to choose that test facility at the time testing is actually requested. Alternatively, a manufacturer could ensure that EPA representatives have full and open access to existing test facilities located outside the United States.

Manufacturers described that it would be burdensome to name a test lab, because they would need to make extensive preparations and do round-robin testing periodically to ensure that the named test lab would properly test engines.

Letters:

Commenter	Document #
NMMA	0688
Mercury	0693
Suzuki	0698
California ARB	0682
Honda	0705
OPEI	0675
EMA	0691
NMMA	0739

Our Response:

It can be very useful for us to understand a manufacturer's general practice for importing engines into the United States. Knowing which ports a manufacturer uses would help us target certain engines for more careful monitoring or inspection if there were a cause for concern or a need to identify engines at the port for a selective enforcement audit. We acknowledge the manufacturers' concern that they should not be limited to any particular ports identified in the application for certification, given the dynamic nature of shipping engines and equipment. To address this concern without simply deleting the provision, we are modifying the regulatory language to specify that importing manufacturers must identify the ports through which they have imported certified products in the previous 12 months. This limits the submission to factual, historical information that is readily available.

It is not clear why EMA would object to naming an agent for service in the United States. We have a need to know whom to contact if there is a need for official communication, regardless of the location of the company. It is especially important to require this for companies based outside of the United States to ensure that there is a point of contact. It is self-evident that companies located within the United States can be contacted, but there is still a strong advantage to knowing before an issue arises that there is an established contact person to handle official communications. This could be as simple as identifying the person submitting the application for certification as the agent for service. As such, we would understand that there is no burden associated with this requirement and are adopting it as proposed for all companies.

Independent of the proposal requiring manufacturers to name a test lab in the United States, the regulations state that we may specify any test lab for measuring emissions from certified engines (§1068.401). As long as the emission measurements conform to the specified procedures in 40 CFR part 1065 and in the standard-setting part, the results would be considered valid for determining whether or not the engines meet emission standards. As a result, the provision to name a test lab in the United States does not expand the manufacturers' liability but rather gives the manufacturer the opportunity to plan ahead of time to identify a lab where arrangements can be made to ensure that the testing will be done properly.

We believe it is important to preserve the proposed requirement to name a test lab in the United States. This would allow us to promptly pursue a selective enforcement audit for imported engines where we find that to be necessary or appropriate. Under selective enforcement audits, manufacturers test freshly manufactured engines, at their own expense, to determine whether they meet applicable emission standards. It may not be practical to pursue testing if the engines need to be shipped back to the country of origin. This is especially true in countries where EPA agents would not necessarily be able to freely travel or perform official functions. Testing in the United States also allows us to require statements and submission of information where U.S. laws apply, including the requirement to submit truthful information to the government (with the corresponding civil and criminal penalties for violations). This requirement removes an inherent advantage for imported engines, since there will always be a U.S. lab available for testing domestically produced engines. It also serves as a preventive measure by forcing manufacturers to recognize that they are liable for the compliance of their engines even after they have been sold.

The manufacturers raised several specific objections, none of which address the fundamental issues described above. First, it would be impractical to require manufacturers to name a test lab "upon request" at the point of importation. Manufacturers have already stated that they don't want to test engines in the United States, so this request would likely be met with resistance and delay. The resistance would be greatest in cases where domestic testing is most needed. As described above, we could in any case pick any test lab without the manufacturer's direction, so we believe it is in the manufacturer's best interest to name the test lab at certification.

Second, manufacturers could provide statements regarding their commitment to ensure access to test labs located in other countries, but that is not always reliable. Manufacturers would offer such assurances at certification whether or not they intended to cooperate, or whether or not local government officials would cooperate. The burden would be on EPA to identify engines for testing, then possibly find that the manufacturer is not willing or able to follow through on its commitment. This would also put EPA in an awkward position, which would likely again result in tests being run at a test lab in the United States where no prior arrangements had been made. This outcome would not be in the best interest of EPA or the manufacturer.

Third, we believe any published measure of good compliance history is not appropriate for excluding a manufacturer from the responsibility to name a test lab in the United States.

However, we may take this into account in deciding whether to allow the manufacturer to conduct testing in the country of origin or not. The testing in question may be what we need to establish whether or not a manufacturer has been producing noncompliant engines. Also, with the very large number of certifying manufacturers and emission families, it is easy to imagine that a manufacturer could be in violation for a considerable period without being caught. Creating this exception would inappropriately reward companies that are able to avoid detection of violations.

Fourth, we believe there are labs available for testing almost all kinds of engines, including large and small engines, and all sizes of outboard engines. To the extent that manufacturers depend on special test procedures or specialized test equipment, we would cooperate with the manufacturer to ensure that testing can be done properly. However, we have modified the original proposal to create two exceptions. Manufacturers are generally not required to name a test lab for engines rated over 560 kW. These engines are much more expensive and are sold in much smaller volumes, so any effort to test these engines would necessarily involve considerably more effort to make those arrangements. For engines above a certain size, there are also very few if any locations available for testing. Also, manufacturers of Small SI engines may omit naming a test lab for engine families where testing depends on custom test fixtures that are not available without making special arrangements. This allowance is limited to engine families representing less than five percent of a manufacturer's total U.S.-directed production volume of Small SI engines. While we are waiving the requirement to name test labs for these special cases, we may still require manufacturers to do selective enforcement auditing with these engines by testing them in the United States to the extent that is possible, but we are not requiring the companies to prepare for that by making these arrangements ahead of time.

We understand that manufacturers would be well served to invest some effort in coordinating with the named test lab to ensure proper testing. On the other hand, the fact that manufacturers are concerned that another lab may get different results reinforces our concern that this provision is necessary. Testing of certified engines should show that the engines meet emission standards for any valid test, regardless of the test location.

Manufacturers might also name multiple test labs if they have made arrangements with different companies that perform such testing. If manufacturers are confident that a valid test at any facility will show that their engines comply and they have no relationship with testing organizations in the United States, they might also indicate in the application for certification that all test labs in the United States are acceptable for confirmatory testing.

When we select imported engines for testing, we expect to work with the manufacturer to make the necessary arrangements. We would generally plan to test engines in the United States. However, in certain circumstances we may agree to allow testing in the country of origin if we have reason to believe that the testing will be properly performed and that we will have unrestricted access to the foreign test facility.

We are therefore adopting the proposed requirement to name a test lab in the United States, with the modifications noted above, as supported by Mercury Marine and California ARB.

1.3.2 Date of manufacture on label

What Commenters Said:

ISMA commented that they do not support the recommended change to § 1051.135(c)(6). EPA has proposed to remove the flexibility of keeping records of the manufacture date in lieu of printing the month and year of manufacture on the label. This change results in a large burden on the manufacturer with no benefit to the environment. Each vehicle must have its certified engine family name on the emission control information label. The vehicle or engine's model year is clearly indicated on this label through the first character. Since the EPA snowmobile regulation is based on model year, not calendar year, placing the month and date of manufacture on the label does not provide meaningful information. ISMA manufacturers will continue to maintain records of build dates for their vehicles, and respectfully requests EPA maintain the current language in 40 CFR 1051.135(c)(6).

MIC commented that § 1051.135(c)(6) allows omitting date of manufacture from the label only if the date is stamped on the engine/vehicle. Stamping each vehicle or engine with the build date is burdensome and unnecessary. The rationale for this change is that it is needed for verifying that vehicles comply with standards based on their build date. However, it is also required that the label "state the exhaust emission standards or FELs to which the vehicles are certified (in g/km or g/kW-hr)." Given this requirement, the build date is unnecessary.

Arctic Cat submitted a comment regarding §1051.135(c)(6). The new proposal will require that the date of manufacture is included on the Vehicle Emission Control Information (VECI) label. Arctic Cat requests an exemption from this requirement for replacement labels (usually needed when a replacement tunnel is provided to a snowmobile customer). These replacements number about one hundred per year to service all past production. Since this affects used units that have already cleared customs and are no longer in a dealership there is little value in making the extra effort to ensure a correctly dated VECI label is supplied. Arctic Cat proposes including the phrase "replacement label" in the field for the date (shortened if necessary to fit in field). The difficulty of including the date on a replacement VECI label is that it is too resource-intensive to create the label and manage the logistics to make sure this exact label is supplied to the customer.

Honda also commented on the pending regulatory changes to §1051.135(c)(6). Honda has not had sufficient time to evaluate the impacts and requirements this proposal will have on its production efforts. Honda requests EPA's approval to not include the production date for the 2009 model year.

Honda continued that the current regulations allow them the opportunity to not print the date of manufacture on the VECI labels as long as they stamp the date on the vehicle or maintain records and provide them to EPA upon request. As EPA is aware, the proposed regulation does

not include the option to maintain records and provide them to EPA upon request. Honda would prefer to maintain records of the manufacturing dates, as they are currently doing, and provide them to EPA upon request. Honda questioned whether there was a particular reason why this option was no longer being provided. With the issuance of the Final Rule being delayed so close to the start of the 2009 model year, Honda noted that several months will be required to prepare and implement the printing of the production date on the VECI labels. This can have a significant impact on their early model year production.

Suzuki commented that as a motorcycle manufacturer Suzuki is concerned about the labeling requirement proposed in § 1051.135(c), as this is a totally new requirement. They supported the MIC comments on this issue, which reflected their position. Additionally, Suzuki questioned whether they can assume that a MY 2010 effective date will be applied to whatever revisions to part 1051 are finalized.

MIC reiterated its concerns with EPA's proposed changes to the Recreational Vehicle regulations at 40 CFR part 1051.135(c)(6). The current regulation allows the date of manufacture to be omitted if a manufacturer keeps a record of the date and provides these records to EPA upon request. This change is of concern to manufacturers because the increased burden is significant. MIC argued that there is no benefit from requiring this of mainstream established manufacturers. This change appears to be targeted at EPA's oversight of importation of nonmainstream engines and not control of established manufacturers, therefore a more appropriate approach should be found to address the problem without overly burdening compliant manufacturers. MIC wants to reiterate that this requirement change will impose significant problems for the following reasons (but not limited to):

- Space allocation on engine emission labels is very limited; on many smaller engines emission label space is extremely limited
- Emission labels are often not printed at the factory and therefore it is not possible to create a unique emission label reflecting the manufacture date
- Even if it is possible to incorporate the date on the emission label, sufficient lead time is not provided in the regulation change to provide for 100% assurance of labeling accuracy
- Many engines do not have space for incorporating an engraved date and would require revised casting (extremely expensive)
- Even if space is available on the engine for engraving the date, plants are not equipped for performing this engraving operation (expensive equipment and production line changes are required)

In addition to the above implementation issues, MIC stated that recreational vehicle engines are not considered complete until they are assembled into the vehicle. If the manufacturer identifies the date of manufacture on the vehicle and the engine has a separate label stating a different date of manufacture; unnecessary confusion (not to mention redundancy and cost) will result. MIC believes that the current approach of requiring the manufacturer to have a readily available tracking method for the assembly of partially complete engines is sufficient and that an additional label on the engine adds no benefit.

MIC is interested in continuing to work with EPA on developing a method for addressing whatever the basis is for making this change in the regulation but does not agree that the current

approach is acceptable. MIC requests that at the very least EPA should provide additional lead time for the above issues to be properly addressed in the production process and that implementation should be no earlier than model year 2012.

In later comments, MIC emphasized that this was an important issue for them. They stated that they understood EPA's rationale for the requirement to identify the engine build date on the engine or vehicle, but pointed out that the implementation date for this requirement prohibits the use of labels that have already been printed by the manufacturer. The MIC proposed language below would allow for the engine build date to be printed on a supplemental label that is affixed adjacent to the main emission control information label:

> § 1051.135(c)(6) State the date of manufacture [MONTH and YEAR]; however you may omit this from the label if you stamp or engrave it on the engine or vehicle, or if you provide this information on a supplemental label. If you use a supplemental label, it must be visible when viewing the primary emission control information label and comply with the placement, durability and legibility requirements as described in this part.

Letters:

Commenter	Document #
ISMA	0671
MIC	0701
Arctic Cat	0709
Honda	0736
Suzuki	0732

Our Response:

Under the Clean Air Act, engine certification is based on annual production schedules (or model years) where a manufacturer produces each engine during a production period such that it is covered by a valid certificate of conformity. Identifying an engine’s build date establishes clearly for each engine whether it is covered by a certificate of conformity for any given model year. Properly associating each engine with the appropriate model year is important for identifying applicable emission standards, calculating emission credits (where applicable), tracking emission-related defects, and executing a recall, among other things. We are adopting regulatory provisions in this rule that further clarify the concept of build date, model year, and the effective dates of certificates of conformity in 40 CFR part 1068 for all nonroad engine categories and in the standard-setting parts. We believe each engine should be clearly identifiable with a certain model year based on its build date. Having this information recorded on the engine prevents a situation in which a manufacturer could manipulate records as needed to gain a more favorable outcome depending on the reported build date of any particular engine or engines. For example, we may find a collection of engines in violation and would want to establish whether they are from the same model year or not, or whether they were built before or after a given change in the application for certification. Our experience has shown that it is very difficult to contest a manufacturer’s claimed build date, even when it defies any customary business or manufacturing process. We also find it inappropriate generally to have to depend on manufacturers to provide information that is necessary to determine whether that manufacturer has committed a violation.

A further practical constraint comes from engine inspections, especially at importation where U.S. Customs and Border Patrol agents have limited time to evaluate large quantities of very diverse products. Inspection of engines often depends on knowing an engine's build date to establish which tier of emission standards apply. A straightforward inspection of an engine should allow an inspector to determine the applicable standards.

Having the build date on an engine would also provide a valuable piece of information because the manufacturer makes a commitment in the assembly process by printing a specific date on the engine (generally month and year). This information is necessary for us to be able to evaluate whether an engine was produced before or after the effective date of a certificate of conformity. The printed build date information is unalterable, which is very effective for both compliance assurance (or prevention of noncompliance) and enforcement. For example, manufacturers would be very reticent to put a false date (such as a postdate) on an engine if there was a possibility that someone may inspect that engine shortly after the manufacturer introduces it into commerce and where it would be directly evident that the date is in error. Likewise, if the printed date is substantially earlier than the actual production date, it may be possible to inspect associated records to evaluate the validity of the printed date (production records by serial number, build dates of equipment in which the engine is installed, invoices, bills of lading, etc.). Having the ability to demonstrate that an engine was produced after emission standards started to apply is essential both for our benefit to ensure compliance, and for the manufacturer's benefit to prove compliance.

Furthermore, where there is a compliance problem, it may be easier to demonstrate that a false build date is a violation than that the engine exceeds emission standards. Requiring build dates on labels requires that manufacturers make a statement to the government, where penalties may apply if the information is demonstrated to be false.

We allow for applying the label and identifying the date of manufacture at any point in the assembly process. Manufacturers could use pre-printed labels that are punched to identify month and year, or the label printing could be brought in as part of the assembly process. Manufacturers may also identify the date of manufacture elsewhere on the engine, such as on a different label applied for other purposes. In any case, the manufacturer could take steps to avoid mismatched dates on different labels if that is a priority objective.

We acknowledge the concern for labels on replacement components. We understand this to be a relatively rare occurrence and agree that it would be rather impractical to include build dates on these replacement components without a disproportionate effort. We are including this exception in the new language related to replacement labels in §1068.101(b)(7).

We are adopting the proposed requirement to print build dates on the label. We understand that this will involve a change in labeling practices for some companies. On the other hand, manufacturers of Small SI and Marine SI engines have already been doing this for several years so the feasibility of identifying engines this way is well established. This is part of a broader effort to adopt this requirement across engine categories. We intend to further standardize labeling with further specification related to the format of the build date. For

example, we believe it is not appropriate to identify the date with coded alphanumeric characters intended to disguise the information from anyone who is not privy to the coded meaning. Spelling out the full date is clearly acceptable. We would also consider acceptable certain standard abbreviations, such as Sep 10 or 09/10 to indicate September 2010. We plan to propose detailed specifications in a future rulemaking to describe a range of acceptable ways to identify an engine's build date.

We agree with MIC's concern that multiple dates on a single engine or vehicle would be confusing and unnecessary. We have therefore modified the labeling requirement to say that permanently applying the date elsewhere (not just by stamping or engraving on the engine) would be acceptable for meeting specifications. Given that manufacturers of recreational vehicles are already putting build dates on their vehicles, we believe there is no need to delay this requirement beyond the 2010 model year.

1.3.3 General labeling provisions

What Commenters Said:

EMA commented on regulatory language we introduced in a new §1068.45 to lay out general labeling requirements. These comments included the following suggestions:

- Using the term "removable label" throughout part 1068 in place of the term "temporary label."
- Including an example to illustrate that a removable label for replacement engines should remain in place until the exemption no longer applies.
- Allowing hang tags to qualify as removable labels since they can be made durable enough to stay in place until they are removed.
- Referring to §1068.101 in §1068.45(e) in regard to improper removal of labels is vague and should be removed.

EMA said the provisions in §1068.101(b)(7) regarding label removal should include an allowance for removing and replacing labels that are incorrect, whether they were wrong initially or they were rendered inaccurate by an engine modification.

In addition, EMA commented that the regulations in several instances specify that labels for exempted engines include information related to engine displacement and rated power. They argued that this information should not be required.

Letters:

Commenter	Document #
EMA	0808
EMA	0810

Our Response:

We believe it is quite appropriate to point readers to the provisions in §1068.101 that describe provisions related to label removal. This does not change any of the regulatory

requirements, but we believe readers may not be aware of those provisions without a specific reference. We agree with EMA's other suggested changes to §1068.45 and have incorporated those into the regulations.

We agree with EMA's suggestion to allow for removal of incorrect labels. A single statement can cover both of the scenarios EMA highlights; a label is incorrect anytime it is no longer true, whether that was always the case or the engine's original, correct label is no longer accurate. We are also including language to clarify that the allowance to remove and replace labels does not change the fact that applying an original label that is incorrect may be a violation of the prohibited acts. We simply intend to allow for the manufacturer to rectify incorrect labels and would separately consider the original action of applying a false label.

In almost all cases, we want labels on exempted engines to identify the engine's displacement. This is important identifying information that helps to prevent a situation in which an exempt label is applied to the wrong engine. Identifying the displacement helps the engine manufacturer and anyone inspecting the engine to know that the labeled engine is properly covered by the exemption in question. We agree that rated power is generally not needed. However, in certain cases, we might approve an exemption only for certain power ratings for a specific engine model. For those few exemptions where we might want manufacturers to identify an engine's rated power, we have modified the regulation to allow us to require that if it is needed. In no cases do we have a default requirement to identify the rated power for exempted engines.

1.3.4 Special provisions for production-line testing

What Commenters Said:

MIC commented on §1051.301(a)(2) of the proposed regulations. MIC commented that the exemption from PLT for small volume families should not be left to the discretion of EPA staff. The proposed language states that the exemption "may" be provided. The language of §1051.301(a)(2) should be revised to say "Engine families with a projected U.S.- directed production volume below 150 units are exempt from testing under this subpart."

ECO commented that EPA should allow small-volume engine manufacturers to utilize the use of alternative testing methods (portable emissions analyzers) to demonstrate in-use field testing compliance for production units.

Letters:

Commenter	Document #
MIC	0701
ECO	0712

Our Response:

We continue to believe it is appropriate for manufacturers to be required to request a PLT exemption for small-volume engine families in the application for certification. For example, we

are concerned that manufacturers may attempt to gain an advantage by underestimating projected sales. The request process should be fairly simple, since manufacturers are required to certify each of their engine families and they must submit a sales estimate. We would grant or deny the exemption request as part of the certification approval process. We have added language to the regulations in each of the applicable standard-setting parts to clarify that we would approve the request if we agreed that the projected sales volumes were made in good faith.

We agree with ECO's suggestion to clarify the language related to alternative methods for production-line testing. The original language was intended to allow for manufacturers to develop different ways of testing production engines for proper quality assurance with respect to emission controls. The initial thinking was that a simpler test (such as ppm testing at multiple modal points) on a large number of engines could be more effective at screening production engines than a rigorous (certification-quality) test on a small number of engines. We continue to believe there is a good potential for this type of alternative test program. The specific suggestion to allow the use of field-grade measurement equipment for production-line testing is an appropriate additional alternative. We have modified the regulation for all spark-ignition engines to allow for using field-grade measurement equipment, provided that the manufacturer doubles the minimum sampling rate. Much like the ppm testing described above, the somewhat less precise or accurate test methods should provide an equivalent compliance demonstration by expanding the sampling rate. We would expect portable analyzers to reduce the cost of testing enough to more than offset the burden associated with testing additional engines. Note that testing with portable analyzers that meet lab-grade specifications would not be considered an alternative test method and would therefore not be subject to EPA approval and would not trigger the need to increase the sampling rate.

1.3.5 Reporting and recordkeeping requirements

What Commenters Said:

Kohler Co. is very concerned with the record keeping and reporting burden associated with the proposed regulation. Table XIV-l in the proposal lists the average burden for a Small SI engine manufacturer at 885 hours annually. This is reported to be the total estimate for both new and existing reporting requirements for total time required to "generate, maintain, retain, or disclose or provide information to or for a Federal agency." This equates to less than half time for a person working 40 hours per week. Kohler knows this estimate is grossly understated and that they will need to add additional staff to deal with all of the record keeping, reporting, correspondence with customers and auditing required by the proposed regulation.

Kohler continued that it appears that in drafting the regulation, the Agency, in its drive to ensure manufacturers sell compliant engines, has incrementally added requirements until the total burden is excessive. They ask the Agency to take a careful look at the proposed regulation from the prospective of those who need to comply. Kohler asked that we make it more "user friendly" and cost effective by eliminating all unnecessary record keeping and reporting. They said that the resources required to perform this unnecessary and burdensome recordkeeping,

reporting and paperwork is time and effort that cannot be expended on cleaning up the engines to provide real environmental benefits.

Kohler commented on the following, but certainly not all inclusive, examples of sections in the regulation where we feel reductions can and should be made:

§91.1013 — Exemption for certified Small SI engines
This section includes a reference to § 1045.605 which requires that small offroad engines (SORE) used as marine propulsion engines must have special labeling and record keeping. Kohler feels this is unnecessary since the engines are already labeled as compliant to the SORE regulation and represents an additional undue burden for manufacturers.

§1054.130 — What installation instructions must I give to equipment manufacturers?
Kohler feels there is a significant burden on engine manufacturer regarding evaporative emissions and general installation instructions.

§1054.205 — What must I include in my application?
Paragraph (a) requires for each engine configuration inwhich the maximum modal power is at or above 15kW a listing of the maximum power and the range of values for maximum engine power resulting from production tolerances. Kohler feels this is another unnecessary reporting burden.
Paragraph (r) requires describing how engines comply with emission standards at varying altitudes and atmospheric pressures. Kohler suggests this will be a significant reporting burden that is not required today.

§1054.610 — What is the exemption for delegated final assembly?
Paragraph (c)(6) requires keeping records to document how many engines are produced under this exemption. Also, manufacturers need to keep records to document contractual agreements under paragraph (c)(3) of this section.
Paragraph (c)(3) describes a contractual agreement with equipment manufacturers and the records required for this, so this section essentially is requiring the keeping of records on the keeping of records. In general, Kohler feels this section's description of the recordkeeping, labeling, and auditing appears overly complicated and confusing to the point that it will be commerce restricting.

§1054.825 What reporting and recordkeeping requirements apply under this part?
Kohler believes there are significantly more reports and recordkeeping than in Part 90; EPA needs to review and make them more manageable.

EMA commented on §1054.825 "What reporting and recordkeeping requirements apply under this part?" Kohler stated that the report and recordkeeping requirements set forth in this section are significantly more substantial than those currently required by 40 CFR Part 90 and are overly burdensome. Kohler said that EPA should review the proposed requirements and make whatever revisions are necessary in order to reduce such requirements and decrease the substantially increased compliance burden associated with the proposed regulation.

MIC commented that § 1051.825 states that "the following items illustrate the kind of reporting and recordkeeping we require for vehicles regulated under this part." The title of this subsection is "What reporting and recordkeeping requirements apply under this part." To be consistent with the title and the presumed intent, the statement should be revised to read "The

following items are the reporting and recordkeeping we require for vehicles regulated under this part:"

Letters:

Commenter	Document #
Kohler	0703
EMA	0691
Motorcycle Industry Council	0701

Our Response:

We agree that the proposed rule included several new reporting and recordkeeping requirements. We have been careful to include only requirements that we believe are necessary to allow us sufficient ability to oversee these programs to ensure that we can adequately implement and enforce the regulatory requirements. The final rule includes several adjustments to take into account the interest in reducing the compliance burden wherever possible. We take Kohler's list of suggested opportunities for reducing the recordkeeping burden to illustrate our interest:

§91.1013: We agree with Kohler that Small SI engines used for marine propulsion should not trigger new labeling or recordkeeping requirements. For bigger engines we would be concerned about creating a path for manufacturers to rely on an existing certification to avoid requirements that apply specifically to marine engines. However, the relative stringency of standards and the extent of sales for certified Small SI engines used for marine propulsion lead us to conclude that a simple exemption from the marine requirements is appropriate.

§1054.130: We would expect that engine manufacturers are already providing equipment manufacturers with installation instructions to address basic parameters such as inclusion of intake or exhaust system components that meet performance specifications and placement of exhaust components to ensure safe operation. The incremental effort to identify those items necessary to ensure that engines and fuel systems are in the certified configuration after installation in the equipment should be very small. In fact, we would expect engine manufacturers to do this even if it were not required because they are liable for the emission controls after the engines are installed. The installation instructions serve more to define the limits of proper installation so it will be clear that it is the equipment manufacturer's fault if engines were not installed according to the instructions.

§1054.205: Knowing whether engines are covered by one program or another is fundamental. In the case of Small SI engines, this hinges largely on the maximum engine power. We believe it is very reasonable to require manufacturers to identify the maximum engine power for engines that are approaching the thresholds established in the regulation. We are reducing this burden for the final rule by revising the regulation to more carefully identify those engines that are close enough to the threshold to warrant this reporting.

§1054.205: Manufacturers are required under part 90 to comply with emission standards at altitude, though the regulations allow manufacturers to do this with an altitude kit. However,

since part 90 includes no reporting or recordkeeping requirement, we have no reason to believe manufacturers are taking any steps to ensure that their engines meet emission standards at altitudes different than at the lab used for certification testing. We believe the new regulations provide a minimal reporting and recordkeeping burden associated with the conditional allowance to meet standards at high altitudes based on the use of engine modifications to install an altitude kit.

§1054.610: We understand delegated assembly to be an optional provision that manufacturers can exercise to help in cooperative relationships with component suppliers and equipment manufacturers to assemble finished products. Since catalysts are such a fundamental part of the emission control system, several measures are needed to ensure that engines in final installations are properly assembled such that they are in the certified configuration. The contractual arrangements, labeling, audits, and other measures are necessary to give us the confidence that engines will be routinely assembled properly. If the burdens of this oversight are too great, manufacturers can simply default to the normal plan contemplated in the regulation, which involves engine manufacturers shipping only engines that are already in the certified configuration. This is common across EPA programs today.

With regard to the comment on §1051.825, the new text in §1051.825 (and similar sections in other programs) is intended to help us administratively in the effort to maintain current information collection requests with the Office of Management and Budget and to align with the list of approved information collections in 40 CFR part 9. While we have attempted to provide a complete list of recordkeeping requirements in this new section, we cannot be certain that it is absolutely comprehensive. This becomes especially true from a long-term perspective, since we may add requirements and inadvertently omit those requirements from §1051.825. We would not want a manufacturer to be able to claim that a reporting or recordkeeping requirement that is clearly stated elsewhere in the regulation is not valid simply because it was omitted from §1051.825. We are therefore keeping the language unchanged as illustrative of the requirements that apply throughout part 1051.

1.3.6 Inventor issues

What Commenters Said:

N. Leggett commented that we need to encourage the independent inventors who design and build their own full-scale spark-ignited engines. Experimental engines should be automatically exempt from regulations. The inventor should not have to apply for some sort of exemption. Rather the exemption should be automatically applicable to single engines that are built by experimenters themselves. These individual experimenters should not be considered to be engine manufacturers.

N. Leggett commented further that the opportunities to experiment with engines are of major importance to the economic and social future of the United States. Independent inventors and experimenters should be encouraged to experiment with engines. Their activities will lead to the development of new engine technologies.

N. Leggett also commented that a community of skilled hobbyists restores antique gasoline engines to operating condition. They operate their engines on occasion including showing them in action at shows and rallies of antique engine enthusiasts. Some of these people install their restored engines in restored or rebuilt antique boats. These people perform a useful function in the study and appreciation of American history. They too should be encouraged in their efforts to bring antique technology back alive. These engines should have automatic exemptions to the proposed emissions rules. In addition, a related activity to the restoration of antique engines is the building of replica antique engines from kits. Many of these kits are in the form of rough castings that the builder then machines into an operational engine. This type of kit building is a challenge to one's shop skills. Other kits are based on already machined parts. Many of these engines are small displacement hobby engines, but not all of them are small. These kits should also be automatically exempted.

N. Leggett commented that these exemptions to the proposed regulations are needed to establish a free zone where experimenters and inventors are free to develop their own engine designs and inventions. This is a contrast to the regulated engine world where people are blocked from "tampering" with engine features. Indeed, the very process of invention and creative technology design is the basically playful activity of tampering with and departing from conventional engine design. We need free spaces for invention to maintain America's position in technology and manufacturing.

Letters:

Commenter	Document #
N. Leggett	0603

Our Response:

We believe it is very problematic to introduce an exemption specifically for inventors' experimental engines, or homemade engines. An experimental-engine exemption as recommended in the comments would be impossible to enforce. Without a request or approval process, there would be no way of confirming that engines produced under such an exemption would in fact meet even the minimal conditions described for the exemption. The Clean Air Act and the regulations contemplate the need for experimental engines with the testing exemption (§1068.210) and the manufacturer-owned exemption (§1068.215), as described in Section 1.2.2. The testing exemption in particular would allow inventors to build, test, and operate their experimental engines. EPA's role in evaluating such exemption requests would be to confirm that the scope of the exemption is appropriate for the company or individual requesting the exemption and that the applicant understands the responsibilities associated with the exemption.

The commenter's interest in an exemption for antique engines is mostly unnecessary. To the extent that someone restores engines that have already been placed into service or installs such engines in restored vehicles, these engines are not subject to standards and therefore no exemption is needed. Building replicas of antique engines is a different matter. To the extent that these antique engines meet our definition of "engine," they are subject to emission standards and therefore must either be certified or qualify for an exemption. These engines may qualify in some cases for the hobby-engine exemption. In other cases, the Clean Air Act and the

regulations contemplate this scenario with the display exemption (§1068.220). However, this exemption is available only to companies that hold a valid certificate of conformity with EPA. As described above, adding an exemption as recommended by the commenter would lead to a situation where we would be unable to confirm that engines are being exempted appropriately. For example, the more common form of building replica engines is for a company to build knockoff engines, imitating an engine by disassembling it and "designing" parts for a new assembly by carefully measuring the original parts. This is a very significant compliance problem. We believe there is not enough value in preserving an allowance to build new, fully functioning, replica engines to outweigh the compliance and enforcement problems that would result. If someone wants to build such an engine, that would be allowable as long as the engine does not include a crankshaft. Such an exercise would still provide plenty of challenge for machining and assembly; however, the value of the resulting assembly would be limited to display purposes, without the benefit of producing usable power.

Innovation is clearly important to our future economic health and welfare. Our interest is in preserving a free zone for innovation without creating a zone where companies are free to produce large numbers of noncompliant engines. Even under the current requirements we are finding many thousands of engines that are being sold illegally. Any relaxation of current requirements would therefore need to be done very carefully to avoid making this situation worse. We understand that some inventors may find the paperwork and approval requirements to be burdensome, but we believe the current regulatory framework allows for innovation with a minimum of administrative requirements.

1.4 Amendments to engine-testing provisions in 40 CFR part 1065

We adopted extensive changes to the test procedures in part 1065 as part of the rulemaking to set emission standards for locomotive and marine diesel engines. We have identified a few additional revisions that we are including in this final rule. Some of these changes are necessary to address issues related to Small SI or Marine SI engines. Other changes involve corrections or clarifications of a more general nature.

What Commenters Said:

California ARB commented that EPA is proposing to allow the use of non-dispersive ultraviolet analyzers (NDUV) to measure NOx emission levels in addition to the currently accepted chemiluminescent detector (CLD). California ARB generally allows the use of alternative measuring methods if a manufacturer can demonstrate equivalency with the current accepted method. Recently, a manufacturer requested California ARB's approval to use NDUV to measure NOx levels for small off-road spark-ignited engines. In response, California ARB requested the manufacturer provide data to show equivalency between emission results from NDUV and CLD. The manufacturer referenced a 2002 study conducted at EPA facilities wherein testing of NDUV technology for NOx measurement was performed on gasoline powered light duty passenger vehicles. However, it is worthwhile to note that despite the results of the study, EPA has not approved the use of NDUV for NOx measurement for light-duty gasoline vehicles. The manufacturer also provided limited test data from a single small spark-ignited engine. The data provided by the manufacturer did not indicate high correlation between the two methods

and, instead, raised questions about the use of NDUV for official certification purposes at this time. California ARB requested EPA establish a test program to generate data and determine if high correlation between NDUV and CLD measurement technologies exists before allowing its use to measure NOx emission levels in small off-road spark-ignited engines.

EMA commented that the requirement to obtain speed and load data at 5 Hz update rate is not necessary for steady state testing (§1065.110(e)). EMA recommends that for steady-state testing the data acquisition requirement be amended to 0.5 Hz minimum.

EMA commented that new analyzers are not configured for adjustability of FID response. Accordingly, §1065.360 should be revised to reflect current analyzer industry practice.

EMA commented that the complete engine mapping procedure defined in §1065.510 is not required for Small SI engines. The Part 1065 requirement should include clarification that this requirement can be omitted per the standard setting part.

Cummins commented on draft language to amend the requirements related to cycle-validation criteria in §1065.514. They would still have to use §1065.514(f)(3)(i) because (ii) [the new provision based on existing requirements in part 90] does not use the statistical method. If there was going to be a mode-by-mode validation allowance in part 1065, they wanted to generalize it for all discrete-mode tests for consistency. The need for mode-by-mode verification did not seem to be unique to a specific engine size or technology. It appeared that the request was made to allow a lower-cost alternative method. It would be cheaper to only log average, min, max, etc. values for each mode rather than log 1 Hz data. If it is intended that this option will go away in the future, then Cummins recommended pulling it out now and putting it in part 1054 for Small SI engines. It could then be dropped from Small SI as appropriate in the future without confounding testing for other engine categories.

Letters:

Commenter	Document #
California ARB	0718
EMA	0691
Cummins	0795

Our Response:

The performance specifications adopted for NDUV analyzers are intended to ensure that measurements will properly characterize an engine's emission levels. For example, Small SI engines may have somewhat higher levels of lubricating oil in the exhaust stream, which could cloud the lens and other components of the instrument, leading to inaccurate results. However, under this arrangement the NDUV analyzer would not reliably meet performance specifications that would allow for a valid test. To avoid a situation where a manufacturer meets calibrations and then performs testing with other engines that may cause such a problem, we are revising the regulation to note that good engineering judgment may preclude manufacturers from using an NDUV analyzer if sampled exhaust from test engines contains oil (or other contaminants) in sufficiently high concentrations to interfere with proper operation.

We revised the provisions of §1065.110 and §1065.512 to specify 5 Hz measurements for transient testing and 1 Hz measurements for steady-state testing. This addresses the manufacturers' concern without foregoing measurement accuracy. We made these changes as part of the rulemaking to set standards for locomotive and marine diesel engines (73 FR 37096, June 30, 2008).

We made extensive changes to §1065.360 as part of the rulemaking to set standards for locomotive and marine diesel engines (73 FR 37096, June 30, 2008). These changes were made in collaboration with EMA members. However, it is important to note that adjustability is critical to proper use of a FID for measuring exhaust hydrocarbons. We therefore believe it is not appropriate to use a FID that lacks adjustability.

Part 1065 already includes general language stating that the standard-setting part governs when there is any difference in the specified procedures for a particular set of engines. If we were to reference every case where one of the standard-setting parts included additional or differing provisions, we would forego much of the advantage of adopting a comprehensive set of regulations that are not category specific. We are therefore not making the change to part 1065 to include a specific reference to the lack of mapping requirements for engines subject to part 1054.

We agree with the suggestion from Cummins to move the new approach to cycle-validation criteria to part 1054 so it applies only to Small SI engines.

1.5 Amendments to general compliance provisions in 40 CFR part 1068

1.5.1 Definition of "engine" and provisions related to partially complete engines

What Commenters Said:

EMA commented that the NPRM proposes a number of changes to Part 1068 which extend well beyond Small SI engines. Many of the proposed changes are technical clarifications or corrections to existing programs, and have been previously discussed with the affected regulated entities. While EMA has some comments on those technical clarifications, they have no objection to their being finalized in this rulemaking. Other changes are significantly more substantial and raise major new issues which have not been thoroughly discussed with the affected stakeholders. For example, EPA appears to be taking action, in the guise of a definitional change, which will substantially change the existing requirements for all nonroad engine service parts and engine rebuild practices.

EMA and its members have no objection to working with EPA to better understand the issues that EPA is trying to address and, if necessary, to develop appropriate regulatory guidance. However, EPA should not adopt regulatory changes that will impact aftermarket engine service parts and engine rebuild practices and programs, without a separate rulemaking and adequate notice and opportunity for discussion, analysis and comment by all stakeholders. In that regard, EMA noted that the Nonroad Tier 4 rulemaking was developed, with tremendous success, by an extraordinary level of cooperation and outreach by and between EPA and all of

the affected stakeholders. EMA finds it odd that EPA would now try to adopt rules that significantly impact nonroad engines without a similarly thorough level of outreach.

EMA commented that EPA's proposed definition of an engine - a cylinder block plus one component - is not viable and, as a real-world matter, cannot be implemented practically. EMA understands that EPA has raised concerns about its ability to enforce standards if uncertified, incomplete engines enter into commerce. However, the proposed definition is not a viable means to address the concern. EMA noted that it is common for manufacturers to utilize global product manufacturing processes for engine parts, including engine cylinder blocks. Therefore, it is common practice for cylinder blocks manufactured outside of the U.S. to be imported into the U.S. for future assembly. In many cases, those cylinder blocks include additional parts depending on the economics and universal nature of the features. It is not uncommon for the same engine block assembly to be utilized in new engine manufacturing of products certified in different product categories or for use as repair parts for older engines already in service. EMA also commented that the proposed definition of a "partially complete engine" further compounds the confusion regarding the definition of an engine because it is inconceivable that an incomplete engine has substantially more parts than an engine (as would be the case pursuant to the proposed definitions). EMA believes the proposed definitions clearly require significant discussion with a broader industry group including both new engine manufacturers and remanufacturers. They believe the proposed new definition should be removed from this rulemaking and deferred to a subsequent process.

NACOO commented that the new wording found in the "engine" definition of section 1068.30 is not clear at all. It appears to be making the statements more than once with the addition of conflicting requirements of a complete engine and incomplete engine (i.e. the third sentence indicates what is not included engine blocks with no attached components). Then the next sentence states "This includes complete and partially complete as follows:" NACOO commented that the way those sentences are written seems to be saying that a complete engine is not an engine. NACOO commented that EPA needs a definition of "Engine Block." They question whether an "Engine Block" is just a block with no crank pistons cams and just an empty cast iron block? They believe it is not clear what the term "Engine Block" means under the proposed regulations.

ISMA commented regarding §§ 1068.260 and 1068.262: It is their understanding from EPA certification workshop discussions that production configuration engines destined for installation in a certified recreational vehicle (e.g., snowmobile) are considered "partially complete engines" under 40 CFR 1068.330. ISMA understands that these engines do not need to be permanently labeled with an emission control information label since they are not by themselves a certified entity – the completed recreational vehicle is. Furthermore such engines are covered by the temporary exemption in 1068.330 when they are imported into the U.S. The engines are designated on the EPA 3520-21 Form using Box F (recreational spark-ignition vehicles or engines) and Box 16 (incomplete engines). A hang tag or other non-permanent means of identifying the engines should be sufficient at the time of import. They would like to be clear that the ability to efficiently import these engines is critical to the snowmobile manufacturers.

MIC commented that there are several cases impacting the MIC member companies, such as:

- importation of engines not subject to stand-alone engine-based certification requirements, that are destined for installation in certified vehicles
- transportation of engines not subject to stand-alone engine-based certification requirements, that are manufactured by a certifying vehicle manufacturer and transported from one of their locations to another
- temporary labeling requirements for these and other circumstances

MIC continued to comment that specific provisions may be needed to address engines used in recreational vehicles and other vehicles certified by EPA. They think the generic language in this section of Part 1068 does not allow proper treatment of the nuances that exist between engine-based and vehicle-based certification categories. Efficient movement of these vehicle components is critical to the success of several MIC member companies.

Arctic Cat commented regarding §1068.262. This section changes the requirements for shipping partially complete engines within the US. They are confused by this section and are still studying its effect on their operations. For example, it is not clear to them how shipments from Arctic Cat's ATV engine factory in St. Cloud, MN to their assembly line in Thief River Falls, MN are affected because in this case no "secondary manufacturer" is involved. Arctic Cat requests additional time to study this section and provide additional comments.

IMPCO proposes that § 1068.262 be removed in its entirety and be re-written and re-introduced at a later date. IMPCO understands EPA's intent behind the proposed language, but it is impractical and will be near-impossible to implement. The main logistical issue is how the engine manufacturer will be able to identify not only the certifying manufacturer, but the engine family name. For example, IMPCO purchases engines through distributors, not from the manufacturer directly. IMPCO questioned how the engine manufacturer can be involved in this process. Additionally, IMPCO noted that they can have two or more different engine families using the same engine. In such a situation, IMPCO questioned which engine family will be used on the temporary label sent from the engine manufacturer.

ECO commented that EPA has proposed to restrict the importation of base engines prior to certification approval. In addressing this issue, it is critical that EPA incorporate flexibility for engine manufacturers that are in the process of certifying engine families, of which the base engine is sourced from outside the U.S. In these instances, the Manufacturer of Records (MORs) are often required to import the base engines and initiate the emission control system upfit process prior to receiving final certification approval. In these instances, it is necessary for EPA to allow MORs importation flexibility for engines that are not completely assembled.

California ARB supports the proposed requirement for partially complete engines to prevent manufacturers from selling partially complete engines as a strategy to circumvent certification procedures. Under the proposed definition, the short blocks or three-quarter blocks without fuel systems would need to be certified. However, EPA's current production line testing, in-use testing, and warranty requirements are not designed for partially complete engines. In addition, EPA allows the large spark-ignition manufacturers to ship partially complete engines to

the secondary engine manufacturers without emission-related components in some circumstances. This would make these provisions (1068.240, 1068.255, and 1068.260) difficult to enforce. California ARB thus recommends that EPA prepare certification guidelines on how to certify partially complete engines under different engine categories. Partially complete engines could be designed to use either gasoline or diesel fuel systems and subsequently they might be installed on stationary equipment, on-road vehicles, off-road equipment, or used as replacement engines. Preparing certification guidelines would help in circumstances when it may be difficult for the engine manufacturers to determine the partially complete engines' final destination.

OPEI commented that the definition of engine (in particular "partially complete engine") in section 1068.30 is missing a critical example in paragraph (2). OPEI notes its engines are not considered complete until final carburetor adjustments have been done to bring engine into proper emission and performance compliance. OPEI requests to add subparagraph (2)(vi) as follows: "(vi) An engine that has been assembled (except for final labeling) but has not undergone final carburetor or other tuning to bring it into compliance with manufacturer's specifications and these standards."

For handheld engines, OPEI does not believe that "short blocks" are "replacement engines," and they should not be tested and labeled as such. Their short block consists of the crankcase, cylinder and crankshaft assembly. The block cannot run until the cooling, ignition, intake, carburetor, fuel system and shrouding are put on. Manufacturers sell this block for rebuilding because the cost of the block is less than the cost of the repair. OPEI requests EPA add language that this provision does not apply to handheld engines.

GM commented that they have considered the impacts of EPA's starting proposal. Although the concept of what EPA intends to do is simple, it truly creates a very difficult position for GM, and they suspect their OEM customers as well. GM hoped that they can find a better alternative to accomplish EPA's goals.

GM noted that its current business model works something like this. GM has a portfolio of engines that they offer to their marine customers. All of the engines they offer are partial engines (and GM is the primary engine manufacturer per EPA's definitions). These engines are not capable of running in the as shipped configurations. GM's customers (Mercury, Volvo, Indmar, Flagship, Kodiak, PleasureCraft and Marine Power) need to do an extensive upfit to "dress" these engines for the final boatbuilder - these customers are the "secondary engine manufacturers." The value added by these customers is significant and includes intake and/or exhaust manifolds, fuel systems, accessory drive, cooling systems, engine controllers and wire harness, etc. In all cases, GM is not the Manufacturer of Record, the Secondary Engine Manufacturers are.

The engines GM offers are based off automotive variants and may include some unique marine hardware. GM may make multiple variants (flavors) of the same engine to meet customer applications differences (ex: sterndrive vs. inboard). They note this does create a proliferation of engine assemblies they offer and their manufacturing plants / logistics operations need to deal with this proliferation - of course, at a cost. As an example, today (2008) GM builds 5 variants of the 5.7L (350 cubic inch) marine engine. Key differences include:

With vs. without intake manifold and fuel system
Front ring gear (sterndrive) vs. Rear ring gear (inboard)
Partial ignition system vs. no ignition system
Mechanical throttle body vs. Electronic throttle body

Thus, GM's engineering release and engine plant have 5 part numbers (P/N's) to deal with. An engine assembly P/N is required for each unique parts list for the final shipped product. GM noted that because most of their marine customers use more than one type of engine from this 5.7L family, this would create the need to create a very large number of labels - an extreme would be 5 engines x 7 customers = 35 labels. This would also require the GM system to replace the 5 engine assemblies with 35 engine assemblies - and that's just the 5.7L at one plant. GM continued to comment that obviously EPA can see the initial burden. This would significantly affect GM's flexibility as today they can ship the same engine P/N to any of the customers who order that particular part number. This could be compounded more as the customers may sell globally (GM doesn't know if the engine is for sale in US or exported). Some engines may be used by their customers for their service needs.

GM requested EPA to consider an option. They referenced some of EPA's initial verbiage: "Manufacturers may introduce into US commerce, partially complete engines as described in this section if they have a written request for such engines from a secondary engine manufacturer that has certified the engine and will finish the engine assembly." GM questions whether this could be interpreted that if a secondary engine manufacturer requests (via purchase order) to procure an engine from a primary engine manufacturer a specific P/N - then this would be sufficient to meet EPA's needs. GM noted that the engine will have engine P/N and broadcast codes, as well as information on the bill of lading where the engines come from. The secondary engine manufacturer could possibly also include in the PO any references as to engine family and certification intents. GM commented that EPA needs to discuss this issue with a broader group of affected companies.

EMA commented on draft regulatory language allowing the movement of partially complete engines between different locations of the same parent company to affirm the principle and request that we clarify that current business practices are not required to change substantially and additional product identification or labeling are not required.

EMA also suggested that the regulations allow engine manufacturers to ship partially complete engines before a Certificate of Conformity is approved. This may also be covered by the manufacturer-owned exemption and/or test exemption.

In later comments, GM emphasized that they wanted to avoid labeling partially complete engines or, if labels are needed, to be sure that GM's label is generic enough that they would not need to identify the destination or a valid engine family name on the label. Putting the receiving company's name and address on the bill of lading is acceptable, but the bill of lading should not need engine family names. GM also objected to any provision that would put them in a position of ensuring that secondary engine manufacturers have a valid certification or exemption that allows them to receive shipment of partially complete engines. In addition, GM raised questions about how the regulations would allow for shipping engines for which the secondary engine

manufacturer has an exemption (testing, replacement, etc.), and for secondary engine manufacturers to ship engines to each other (such as for managing excess inventory).

The Industrial Truck Association asked for clarification regarding engines that qualify for the manufacturer-owned exemption or the test exemption. They especially wanted to know how to apply the provisions of §1068.262 for engines that are exempt for other reasons.

IMPCO noted that in certain cases, the equipment manufacturer purchases the engine and aftertreatment. This is effectively a pass through where they charge for the fuel system and installation, but are neither involved with the acquisition nor do they factor the cost of the engine or aftertreatment directly into the cost of the certified engine. Given that these are not test engines, they are not the certificate holder, and they will never be the certificate holder, IMPCO question how the equipment manufacturer would acquire these engines from the engine manufacturer. Also, the regulation should not require the manufacturer to state unconditionally that engines will comply with applicable regulations in their final configuration. As with § 1068.261(j), the certifying manufacturer cannot be held liable for engines that are not in their final configuration when installed in the equipment, unless the certifying manufacturer was in some way negligent when it comes to specifying part numbers, installation instructions, etc. Allow the manufacturers to include qualifying language in their statement to recognize the equipment manufacturers' need to follow installation instructions.

IMPCO further commented that the proposed language related to revoking the exemption seems to allow EPA to revoke the exemption for the secondary engine manufacturer in its entirety. Therefore, IMPCO questioned whether EPA would have the authority to stop shipment of all GM engines to IMPCO, even if the noncompliance only occurred with one engine family. Given the liability placed on IMPCO for items that are outside of its control, IMPCO commented that EPA should have to prove the noncompliance on an engine family-specific basis. They believe this paragraph is too general and too far-reaching. Finally, IMPCO questioned what it means to say: "if that manufacturer sells engines that are not in a certified configuration". IMPCO noted that when engines are shipped without aftertreatment or other components, they are all "not in a certified configuration."

Letters:

Commenter	Document #
ISMA	0671
IMPCO	0692
MIC	0701
Arctic Cat	0709
NACOO	0714
ECO	0712
California ARB	0682
OPEI	0675
EMA	0691
GM	0747
EMA	0809
GM	0787
Industrial Truck Association	0800
IMPCO	0812

Our Response:

At the time of the proposal, it became clear that manufacturers had somewhat varying interpretations of regulatory provisions related to partially complete engines. To the extent that manufacturers took the view that partially complete engines were not subject to emission standards, we understand that our proposed language to clarify the definition of "engine" would be a very meaningful clarification regarding the scope of EPA regulations. We believe it would be reasonable to consider the proposed definition (or a variation of it) to be the proper interpretation of regulatory requirements that were adopted earlier. However, we understand that manufacturers may not have been operating with that understanding. The proposal included a description of the concerns that led us to make this change, in particular the need to address the prevailing practice of shipping short blocks and long blocks to secondary engine manufacturers for certification as Marine SI engines and to address the increasing occurrence of noncompliant imported engines.

We believe it is both necessary and appropriate to finalize the new definitions in this rulemaking. We received extensive input from a wide range of manufacturers during and after the public comment period on these issues, and have provided updated draft regulatory language to manufacturers representing other industry sectors. While the clarified scope of the regulation is broader than some manufacturers have understood to be the case previously, we have been careful to include exemption provisions to avoid unwarranted disruption of a wide range of legitimate business practices related to assembling and distributing engines.

We agree with the manufacturers' comments that the proposed definition of "engine" (block plus one attached component) was too broad. In particular, the first attached components may be dowels, pins, bushings, or plugs, none of which are fundamental to initiating the engine-assembly process. Discussions led us to conclude that installation of the crankshaft serves as a clear, objective, and fundamental point in the production process that can be considered as the time when the engine block becomes an engine (when the engine is "born"). As a result, we will

consider engines subject to standards in any case where an engine block has an installed crankshaft, whether or not there are any additional components attached or assembled. This means that each one of these "engines" that is introduced into U.S. commerce needs to be covered by a valid certificate of conformity or an exemption (temporary or permanent). This approach applies equally to handheld engines, locomotive engines, and everything in between.

We note in the definition that there are two types of engines—complete and partially complete engines. This is intended to allow for the situation where special exemption provisions apply for engines that are not yet in a certified configuration. Engines needing carburetor adjustments represent one possible example of that; however, this does not change the fact that we find it necessary to consider these partially complete engines to be subject to standards. See the discussion below regarding date of manufacture for further discussion of issues related to the flow of products and stages of assembly.

We agree with the commenter that fully operational engines intended for installation in a recreational vehicle should be considered partially complete engines under the regulation. The rulemaking changes clarify these relationships and add a variety of oversight provisions (such as labeling, consistent with what was recommended) to prevent circumvention of the regulations. The provisions currently in §1068.330 are being expanded and codified in §1068.262. We believe this approach should be a minor change from current practice for companies currently buying engines for installation in their certified recreational vehicles. Nevertheless, we understand that manufacturers may need time to adapt their ordering and shipping practices to follow these new requirements. The definition of engine and the corresponding provisions related to partially complete engines take effect immediately once the final rule is effective. We are therefore specifying in §1068.40 that manufacturers may have up to 12 months to comply with new requirements. In the case of §1068.262, we are giving advance approval for waiving the documentation and tracking requirements related to partially complete engines.

For the particular question about certificate holders shipping a partially complete engine from one plant to a different plant within the company, we address this in §1068.260 by specifying simply that manufacturers should notify us in their application for certification that they will be shipping these partially complete engines to another of their facilities. An approved certification represents an approval of the exemption that would allow for this transaction. No labeling or additional recordkeeping requirements apply. We learned that some companies rely on third-party companies to arrange for inventory and transport of engines even if they are shipping the engines between two of their own facilities. Sometimes this even involves transferring ownership of the engines to the other company. We chose to address this by adding a provision allowing for third-party companies to be involved in these engine shipments, as long as the certifying manufacturer demonstrates that the engines will be transported only according to its specifications. These provisions are intended to allow manufacturers to continue current practices, but we would not agree that manufacturers should be able to continue their current practices if they do not conform to these minimal requirements. Since the certificate-holder controls these engines at all times, there is no need for labeling or other identification beyond what the manufacturer would do for its normal business practice.

We have made some revisions to the exemption provisions in §1068.262 for shipping engines to secondary engine manufacturers that certify the engines. First, we specify that the documentation must identify a valid engine family name for the particular engine model. The secondary engine manufacturer would simply pass along this information when ordering the engine. The family name could represent a marine, industrial, or stationary application. The shipped engines would not all need to be built up to match the given engine family. For example, the secondary engine manufacturer could provide a valid family name for an order of 4.3-liter engines, then build those engines to be covered by that certificate, or any other certificate. These engines could also be covered by an exemption (for export, for example). Such an exemption must be approved before the original engine manufacturer may ship engines under the provisions of §1068.262. Second, we specify that the removable label may be simplified to include only the shipping manufacturer's name, a statement that the engine is being shipped to the certifying company, and a reference to the bill of lading. This allows the shipping engine manufacturer to make a universal label that would apply for all the engines it produces and ships under these provisions. Third, we are allowing manufacturers to apply a single label to engines that are packaged together. For example, if 30 Small SI engines are shipped in a pallet-mounted box, the manufacturer may label the box instead of labeling the engines individually. Fourth, we are including provisions allowing manufacturers to ship engines to secondary engine manufacturers while an application for certification is pending. This would allow secondary engine manufacturers to start producing engines after sending an application for certification. This is similar to what we allow for other manufacturers; see Section 1.5.1 for general provisions that apply for these early-production engines. Fifth, we have revised the requirement for secondary engine manufacturers to make an unconditional statement of compliance. The revised statement attests that the manufacturer has distributed engines that conformed to the regulations, rather than attesting that the engines in the final configuration will be compliant. This focuses the secondary engine manufacturer's statement on the activities it can control. Sixth, we have revised the regulation to specify that it is a violation "if that manufacturer sells engines that are not in a certified configuration in violation of the regulations." This avoids the confusion that might arise from the provisions related to selling engines without aftertreatment devices under the delegated-assembly provisions.

The final rule does not include a requirement for original manufacturers to include engine family information on the engine label or on the bill of lading. We believe the documentation provisions related to ordering the engines and the requirement to ship the engines directly to the secondary engine manufacturer should be sufficient to ensure that engines reach a certified configuration before reaching the ultimate purchaser. However, this reduced information on the label requires that we specify that the original manufacturer assumes some responsibility for ensuring the validity of the information specified by the secondary engine manufacturer. Accordingly, we specify that we may void the original engine manufacturer's exemption if the engines are shipped to the wrong destination or if engines are not properly labeled.

The language describing how EPA might revoke the exemption generally applies to a secondary engine manufacturer's engine family, but we clearly should be able to void or revoke an exemption more narrowly or more broadly if available information allows us to identify how specific the violation is. For example, we may void or revoke the exemption with respect to a particular engine model or for all engine models shipped to the secondary engine manufacturer,

depending on whether or not the violation is unique to a particular engine model. We may also void or revoke the exemption from the original engine manufacturer with respect to a single secondary engine manufacturer or all affected secondary engine manufacturers, depending on whether or not the violation is unique to a particular secondary engine manufacturer.

We believe the final regulation and the guidance contained in rulemaking documents provides sufficient guidance to implement the new provisions. We will expect to interact extensively with companies as they follow these requirements and will be prepared to publish any necessary clarifications as the need arises. In particular, our understanding is that most of the exemption provisions related to partially complete engines are temporary, which means that the normal requirements (production-line testing, warranty, etc.) will all apply at a later point in the assembly and distribution process. The provisions for handling short blocks as replacement engines are permanent exemptions, but this is consistent with the way we have handled exemptions for complete replacement engines in the past.

Note that we are adding a new §1048.601(b) to describe how the replacement-engine provisions of § 1068.240 apply for engines subject to part 1048 in conjunction with the secondary engine manufacturer provisions in § 1068.262. For cases in which the secondary engine manufacturer completes assembly of the engine, these provisions apply as written. If the secondary engine manufacturer arranges for a third party to complete engine assembly, some additional provisions apply. Most significantly, the ultimate purchaser must purchase (or otherwise order) the replacement engine from the secondary engine manufacturer, and the secondary engine manufacturer and engine assembler are both responsible if the engine is installed in new equipment or otherwise violates the circumvention provisions of § 1068.240.

1.5.2 Definition of "date of manufacture" and issues related to "model year"

What Commenters Said:

EMA commented that EPA is proposing a significant regulatory change – not a clarification – that would define an engine's date of manufacture based on when the engine is capable of running or on when an incomplete engine is imported to the U.S. This significant change is both unwarranted and misguided. EPA's proposed change will alter the way in which manufacturers currently operate, will impose significant costs and administrative burdens, and will not provide any emission benefit. Indeed, EPA has not identified any "problem" that it is attempting to solve. The fact of the matter is that EPA's new definition will create problems.

EMA continued commenting that under EPA's rules, a manufacturer on a calendar year model year (which is the vast majority of manufacturers) cannot produce an engine for the current model year after December 31 of that model year. However, EPA's proposed new rules would require the manufacturer that begins production of an engine in one model year to meet the regulatory requirements of the next model year (when the engine can actually run or when the incomplete engine is imported). That is wrong and unfair. It is obvious that, as a practical matter, an engine built on December 31st could not run or would not be imported until January 1st. So, the December 31st engine would either have to be built to the next model year's standards, or it could not be sold. It is just as obvious that such a scenario could occur for

engines built on December 30th, and probably for all of December, and, indeed, for engines built even earlier in that model year. The nature of the manufacturing process, exacerbated by the location of engine plants throughout the world and the non-integrated nature of the industry, makes EPA's proposed new date of manufacture definition not only impractical, but likely impossible.

EMA commented that manufacturers cannot live with a rule that prohibits them from assigning the date of manufacture at the point within the engine assembly process that is relevant to their specific manufacturing workflow. The assignment process established for a given manufacturing facility does not (and should not) change from day to day or from the beginning to the end of a model year. For products that are imported as incomplete engines, the date of manufacture likewise is determined and assigned during the manufacturing process - - a timing and process that is independent of shipment and importation.

EMA continued that to a large degree, EPA's proposed change seems to be a "solution in search of a problem." Certainly, for those model years where there is no change in standards (i.e. most model years), the potential for somehow "gaming" the system around defining the date of manufacture simply does not exist. But, even for those model years in which there is a change in standards, any potential for "gaming" can be eliminated by EPA simply requiring that whatever process and procedure the manufacturer uses for establishing date of manufacture remain constant for an engine family throughout all of its model years.

Finally, EMA noted that engine manufacturers are required to control inventory of either in-process engines, or incomplete engines being imported, to normal levels through both EPA anti-stockpiling requirements and also normal business practices. Accordingly, manufacturers should be allowed to maintain their current production process for the determination of the engine date of manufacture.

OPEI commented that the definition for Date of Manufacture in section 1068.30 is too obscure. Paragraph (1)(i) of the definition has a very narrow interpretation. An engine being able to run is different than an engine set to run properly for emission and performance. OPEI suggests this wording be revised as follows: "The date on which the engine is assembled and adjusted to the point of being able to properly run for compliance to these standards."

OPEI also commented that EPA should clarify section 1060.201. The certificate of conformity will list an effective date (signature date). The manufacturer may not introduce into commerce before this date but may produce equipment/engines prior to the effective date.

California ARB recommended that procedures be adopted to prevent any stockpiling of engines that could be used to circumvent the regulations.

OPEI/EMA suggested that EPA clarify the allowance for equipment manufacturers to use up inventories of previous MY engines, adding an allowance for engine manufacturers to sell engines that they had built in the previous MY.

IMPCO commented that §1068.103(c) appropriately allows for production of engines while an application for certification is pending, but the regulation should prohibit introduction into U.S. commerce only rather than also prohibiting the selling and offering to sell such engines.

Manufacturers also raised a variety of issues related to our proposal to adopt certain restrictions on naming an engine's model year for importation, as described in Section 2.10.3.

Letters:

Commenter	Document #
OPEI	0675
EMA	0691
California ARB	0682
IMPCO	0812

Our Response:

Until now, the regulations have not specified the point in the assembly process that should serve as the basis for establishing an engine's date of manufacture. For the large majority of engines, this is not an issue, since total assembly time from start to finish is measured in hours or perhaps days. As a result, it is relatively uncommon for there to be any uncertainty regarding an engine's date of manufacture for purposes of deciding which standards apply. Nevertheless, we have learned that there are widely diverging practices for establishing an engine's date of manufacture, which means there is a different effective date of new emission standards for different manufacturers. This is especially of interest for larger engines, which are more likely to be assembled in multiple stages at different facilities. We believe it is important to establish a clear requirement in this regard to avoid ambiguity and different interpretations. A consistent approach preserves a level playing field and may prevent some manufacturers from manipulating their build dates to circumvent the regulations.

We expected that the proposed definition of "date of manufacture," based on reaching a final, running configuration, was the most straightforward and logical interpretation. The comments received and the ensuing discussions made clear that this interpretation was not universally held. The diversity of views underscores the need for the regulations to establish a clear and uniform requirement. Once we are able to establish such a requirement, we believe there would be a "cost and burden" only for those companies that would otherwise be attempting to delay complying with new emission standards. Requiring only that manufacturers continue their normal business practice or maintain a consistent approach from year to year would not do enough to establish uniform and enforceable requirements related to the transition to new emission standards.

However, we recognize the concern that manufacturers need a rather high degree of certainty regarding applicable emission standards when they initiate assembly of an engine. Any number of variables in the production process could affect how long it takes to finish building an engine. We therefore believe it is most appropriate to match up the definitions for "date of manufacture" and "engine" by specifying that an engine's date of manufacture should be based on the date that the crankshaft is installed in the engine. This provides manufacturers with the

control they need to determine which emission standards apply when they start to build the engine.

We are aware that secondary engine manufacturers may have inventory and assembly procedures that are not tied to the actual date of crankshaft installation by the original engine manufacturer. We are therefore specifying for this situation that the date of manufacture is generally the date the secondary engine manufacturer receives shipment of the partially complete engine. The manufacturer may alternatively specify a date of manufacture up to 30 days earlier as long as that date is not earlier than the date the crankshaft was actually installed in the engine. This puts the secondary engine manufacturer in a similar position relative to companies with sole responsibility for assembling complete engines, without placing unreasonable expectations on secondary engine manufacturers.

Some manufacturers would be interested in naming a date of manufacture that is later than we specify in the regulation, as suggested in the comments. This may be for marketing purposes, managing inventories of engine components, or for other recordkeeping or product-development reasons. There is no risk of manufacturers gaining an advantage of being subject to less stringent standards by delaying the date of manufacture for an engine, so we would have no objection to that. However, we limit the selection of date of manufacture to a later point in the assembly process. Selecting a date of manufacture after the end of the assembly process for an engine would raise concerns about the risk of manipulating emission credits for a given model year and about ensuring that engine assembly and dates of manufacture are always within the production period established for a given engine family, as described in the certificate of conformity or the manufacturer's records. We see no legitimate reason to select a date of manufacture after completing assembly for an engine.

This approach addresses manufacturers' concerns for knowing which standards apply to an engine, but we are concerned that manufacturers could ramp up production of engine blocks with installed crankshafts as a method to delay compliance with new emission standards. EPA regulations have always included provisions describing limits on inventory and stockpiling practices for equipment manufacturers. The regulations until now have not clearly addressed issues related to stockpiling for engine manufacturers. We agree with the suggestion from commenters that anti-stockpiling provisions would be appropriate. The Clean Air Act contemplates the need for such provisions in §202(b)(3) where there is direction for EPA to consider establishing a definition of model year that prevents stockpiling. At the same time, we received other comments related to production periods and model year, leading us to adopt a collection of related provisions in §1068.103.

The new text in §1068.103 includes three main provisions that are already in place for motor vehicles and heavy-duty highway engines in §§85.2304 and 85.2305. First, we are clarifying that the scope of a certificate of conformity may be limited to established engine models, production periods, or production facilities. Any such limits would be included in the manufacturer's application for certification or in the certificate of conformity. Second, we are defining the limits on selecting production periods for purposes of establishing the model year. Third, we are clarifying that engine manufacturers may start producing engines after they submit an application for certification and before the certification is approved. This includes provisions

to address the manufacturers' responsibility to ensure (1) that engines are not introduced into U.S. commerce or offered for sale until the certification is approved, (2) that all engines are assembled consistent with the certification, including any changes that may have come from the certification review process, and (3) that manufacturers make these early-production engines available for production-line testing or selective enforcement audits, as appropriate.

In addition, we are adding provisions to establish limits on stockpiling for engine manufacturers. We are doing this by stating that manufacturers must use their normal inventory and assembly processes for initiating assembly of their engines. We include a clarifying expectation that we would expect normal assembly processes to involve no more than one week to complete engine assembly once the crankshaft is installed. We understand that assembly processes in some cases are more complicated, and that engine manufacturers may be unable to complete engine assembly in some cases based on delivery of certain components. To put some boundaries on these exceptional situations, the regulation specifies a presumption that the engine manufacturer has violated the stockpiling prohibition if engine assembly is completed more than 30 days after the end of the model year. This presumption date is 60 days after the end of the model year for engines with per-cylinder displacement above 2.5 liters. This generally distinguishes engines that may have relatively high sales volumes (including heavy-duty highway engines) from bigger engines that are only sold in lower sales volumes.

Two additional provisions are intended to minimize potential burden and disruption related to transitioning to new model years. We specify that the restrictions related to date of manufacture and model year do not apply if there is no change in emission standards for the coming model year. We are also including hardship provisions to allow manufacturers to request approval to extend the final assembly deadline for their engines if circumstances outside their control prevent them from completing engine assembly in time. We would approve such a request only if the manufacturer could not have avoided the situation and took all possible steps to minimize the extent of the delay.

Note that we are also clarifying in the standard-setting parts that the certificate is valid starting with the indicated effective date, but that it is not valid for any production after December 31 of the model year for which it is issued. We are also adopting a provision to preclude issuance of certificates after December 31 of a given model year. This will avoid a situation in which a manufacturer receives certification after it is no longer valid for further production.

Finally, note that we are adopting a provision specifying that imported products may not have a model year more than one year earlier than the calendar year of importation, as described in Section 2.10.3. We proposed this in part 1054 for Small SI engines and requested comment on including it in part 1068 for all nonroad engines. Manufacturers generally had no objection to expanding the scope of this provision to other categories of nonroad engines. We are therefore adopting this provision in §1068.360.

We understand Impco's interest in making arrangements to sell engines once they have submitted an application for certification for a given engine family. However, making such commitments to supply products before the certification is approved would put EPA in an

difficult position if the application included significant shortcomings. If the manufacturer would need to do further testing, modify the engine design, or make other changes to adequately demonstrate compliance with applicable requirements, there could be substantial delays in the certification process. During this time, the manufacturer would likely insist on accelerating the approval because of their premature business commitments. We believe this could interfere with the normal review process. Furthermore, the Clean Air Act prohibits selling or offering to sell engines that are not yet covered by a certificate of conformity, so it is not clear how we could create such an allowance that is consistent with the Act.

Finally, we note that we are adding a new paragraph to §1054.601 to clarify how engine manufacturers can sell engines after the end of the model year. This text does not change the prohibition in 40 CFR 1068.103(f) against engine manufacturers deviating from normal production and inventory practices to stockpile engines with a date of manufacture before new or changed emission standards take effect. It does add a requirement that manufacturers get our prior approval for model years in which emission standards change if their normal practice for producing engines includes maintaining engines in inventory for some engine families for more than 12 months. Manufacturers would be required to show that this is necessary and consistent with their normal business practice. They would also be required to include relevant inventory and production records from the preceding eight years.

1.5.3 Retailer liability

What Commenters Said:

OPEI shares EPA's concerns that many U.S. importers, distributors and retailers currently do not fully appreciate that they can be found responsible and liable for selling non-compliant small engines. Section 203(a) of the CAA prohibits any "person" "causing" the importation of non-compliant or uncertified engines or vehicles. U.S. retailers that purchase non-compliant or uncertified engines from an importer may be found responsible for "causing" the importation of illegal products. The final regulations and preamble discussion should make it clear that retailers selling non-compliant products may be subject to the enforcement provisions set forth in Sections 113, 204 and 205 of the Clean Air Act.

Analogous case law holds that retailers act as de facto “importers” if they are inducing and causing the importation. See Terry Haggerty Tire Co. v. United States, 899 F.2d 1199 at 1200 (Fed. Cir. 1990). In this case, the Court found that a tire retailer, who merely purchased goods from a Canadian company, but did not arrange for or participate in the shipment or importation of the goods, had caused the sale sufficient to be held as the importer.

In California, retailers and distributors, as well as equipment manufacturers, are potentially “strictly liable” for offering for sale or selling non-compliant small-engines or lawn and garden equipment. In assessing liability, California ARB looks at each individual case to determine which parties were principally at fault in causing the violation. California ARB’s general enforcement policy has been to not impose penalties on innocent manufacturers or retailers who undertook “reasonable prudent precautions” to ensure they are selling certified and compliant products. However, if, for example, a retailer purchased products that are less than

half of the purchase price of the normal, low-end range of a certain category, California ARB will question whether that retailer failed to take any precautions whatsoever, and should have known he was buying suspect, non-compliant products. The California ARB enforcement approach has provided a much-stronger deterrent than the current EPA program vis-à-vis the offering for sale of non-compliant products.

In response to EPA's concerns about duplicative certifications being filed, even the equipment manufacturers, retailers and distributors that have received substantial penalties under California ARB settlements are not re-testing or re-certifying products with an emission label. However, these retailers are incentivized to buy compliant products from reputable, rather than "fly by night" companies, and to contractually require their suppliers to sell only certified and emission-compliant products, subject to indemnifications for any violations. EPA should develop policies that will achieve these same incentives in the national marketplace. OPEI urges EPA to pull ahead and make effective in 2007 the regulatory clarifications that retailers and distributors that "cause" a prohibited act are potentially liable parties.

In addition, various OPEI member companies sent in separate letters encouraging us to take a position consistent with the OPEI recommendations described above.

Letters:

Commenter	Document #
OPEI	0675
Stihl	0767
Honda	0767
John Deere	0767
Briggs & Stratton	0767

Our Response:

We agree with the suggestion from OPEI to include in the regulations a clear statement that we consider it a violation to cause someone to commit a prohibited act. The preamble to the final rule also describes the basis and context we would consider for evaluating possible "causation" violations.

1.5.4 Defect reporting

What Commenters Said:

OPEI appreciates the changes for defect reporting and believes that the changes have leveled the requirements between large and small volume manufacturers with no negative impact on the environment. OPEI also agrees with the effective date of 2009 for Small SI.

MIC commented that § 1068.501(a)(1)(ii) should be modified to delete the reference to "connectors" for which no permeation standards or test procedures have been defined.

GE commented that EPA should not extend the tracking requirements for other nonroad engines regarding defect investigation and reporting to locomotives and locomotive engines but should instead retain the approach currently used under part 92. GE also restated detailed comments made during the recently finalized locomotive rulemaking.

Letters:

Commenter	Document #
GE	0679
MIC	0701
OPEI	0675

Our Response:

We disagree with the comment from MIC to eliminate fuel line connectors from the list of evaporative emission components subject to defect reporting. While we do not have separate emission standards for connectors, defective connectors have the potential to result in emissions just as significant as defective fuel lines. By including them on the list we are merely requiring that the manufacturer investigate defects when they become aware of them and report them to us. This is not an overly burdensome requirement.

GE's comments were addressed in the locomotive rulemaking by revising the reference to §1068.501 in 40 CFR 1033.601.

1.5.5 Delegated assembly

What Commenters Said:

EMA commented, and as they have discussed their comments with EPA at length, that the existing delegated assembly provisions applicable to land-based nonroad engines are inadequate. Because they include a provision not found in any other mobile source regulation – the mandatory requirement to include the price of the aftertreatment with the price of the engine, they create a major economic penalty for manufacturers. By requiring the price of the aftertreatment to be included in the price of the engine, importers have to pay an import duty on the price of the aftertreatment even if the aftertreatment is manufactured in the United States. Similarly, for aftertreatment systems that are imported separately from the engine, the duty is paid twice. The proposed allowance for importers to segregate the cost of the separately shipped components to avoid duplicate duties is not acceptable and, in any event, is not within EPA's regulatory authority.

EMA continued to comment that it is not fair, appropriate or necessary for EPA to impose this requirement on land-based nonroad engines. In fact, EPA currently provides an option in the delegated assembly provisions applicable to heavy-duty on-highway engines. Manufacturers either can include the price of the aftertreatment with their engine, or they can opt to exclude the cost of the aftertreatment and meet certain audit requirements. EPA should finalize a similar provision for nonroad engines. In addition, nonroad engine manufacturers

should be provided with the delegated assembly flexibility being proposed for Small SI engine manufacturers associated with the sale of engines through distributors.

EMA commented that both of the changes recommended above are needed and appropriate for land-based nonroad engines and can be implemented by EPA within the scope of the existing regulatory process.

In response to draft regulations that address the concerns described above, EMA suggested clearer language stating that air filters are not subject to delegated-assembly requirements if they are not specified by part number in the manufacturer's application for certification.

EMA (0738) commented that we should include preamble language to clearly describe when air-intake systems are subject to delegated-assembly requirements. They also requested that we delay the labeling requirements associated with delegated assembly for heavy-duty highway engines until 2010. In addition, they requested that we not require manufacturers to investigate assembled engines after an initial, successful audit.

IMPCO requested that we clarify what records would be appropriate for showing that parts were randomly collected to prepare for production-line testing with engines that participate in delegated assembly. They also objected to the requirement for the certifying manufacturer to get written confirmation that an equipment manufacturer has ordered the appropriate aftertreatment devices and to the inclusion of air filters in the delegated-assembly provisions. They believe these provisions are redundant with all the other requirements for documentation and verification.

IMPCO commented that revoking the exemption should be narrowly related to the equipment manufacturer and engine family that were the subject of a violation. They also objected to the regulatory provision assigning liability for in-use compliance to the engine manufacturer, stating that it would be irrational to expect the engine manufacturer to be responsible for anything past delivery to the equipment manufacturer, assuming the auditing and other applicable provisions have been followed.

EMD provided comments arguing against applying the proposed §1068.260 to locomotives. They also opposed applying §1068.260(b)(4) and (b)(6) to C2 marine engines.

Letters:

Commenter	Document #
EMD	0687
EMA	0691
EMA	0738
EMA	0818
IMPCO	0812

Our Response:

It is important to begin by emphasizing that the delegated assembly provisions do not represent additional requirements, but rather are voluntary provisions intended as a flexibility to manufacturers. With respect to liability, we expect engine manufacturers to take appropriate "steps to ensure that all engines will be in a certified configuration when installed by the equipment manufacturer." Manufacturers that do not believe they can effectively ensure that engines are in a certified configuration when installed by the equipment manufacturer should not use these delegated assembly provisions. We believe that holding engine manufacturers liable for the final assembly is the best way to ensure they take appropriate steps to prevent problems.

We do not agree that pricing engines and aftertreatment together is an unreasonable requirement. In fact, it is not a regulatory requirement under the current program as much as a constraint on exercising an allowance to depart from regulatory requirements. If the pricing provisions are more burdensome than shipping engines with aftertreatment devices, then manufacturers could simply choose not to participate in delegated assembly. For those manufacturers wanting to pursue delegated assembly, we believe the pricing requirement is important in preventing vehicle or equipment manufacturers from being in a situation where they would gain a financial advantage by installing engines without the proper emission controls in place. We have confirmed with the U.S. Customs and Border Protection that inappropriate payment of import duties for components that are not shipped with a given engine can be avoided with documentation showing that the price of the engine includes a charge for components that are not included in that particular shipment. This could most easily be accomplished by itemizing the invoice to identify the value of the missing components relative to the value of the rest of the engine. The regulations now include these specific instructions regarding invoicing with respect to import duties.

We understand that engine manufacturers have competing interests both to maintain the ability to arrange flexible assembly procedures and agreements, and to ensure that their engines are introduced into commerce only after being assembled in the certified configuration. We share those objectives and believe the regulations serve the purpose of creating a framework for balancing these different concerns. By applying these provisions in the regulations, manufacturers will not find themselves in a situation where competitiveness concerns cause them to take steps to reduce costs at the risk of producing noncompliant products.

We agree with EMA, however, that it would be appropriate to apply the delegated-assembly framework for heavy-duty highway engines to other nonroad engines. The main difference between programs is the allowance for heavy-duty highway engines to rely either on the pricing strategy described above or on audits of vehicle manufacturers, but not necessarily both, to ensure that installed engines are in the certified configuration. While we are concerned about the incentive for vehicle and equipment manufacturers to gain a financial advantage if aftertreatment components are not priced together with the engine, we believe that requiring engine manufacturers to confirm that vehicle or equipment manufacturers have ordered the required aftertreatment components and to perform audits of vehicle or equipment manufacturers is generally sufficient to provide the proper assurances that engines are being properly assembled and installed. Conversely, we believe that pricing aftertreatment and engines together is a strong

enough assurance of proper assembly and installation procedures that audits are not always necessary as an additional oversight measure. We note that these provisions spell out a minimum level of oversight for engine manufacturers. There may be instances, such as a new relationship with a vehicle or equipment manufacturer or some other reason to have less confidence in proper assembly procedures, where the engine manufacturer would want or need to take extra steps to ensure that engines are assembled properly.

We recognize the inconvenience of requiring engine manufacturers to obtain written confirmation that the equipment manufacturers have ordered aftertreatment components before shipping the engines. Thus, the final regulations only require this be done for the initial shipment. This will significantly limit the inconvenience, while ensuring that the equipment manufacturers understand their obligations before they start receiving engines.

We believe there is a strong advantage in implementing requirements uniformly across all the engine programs, both for EPA and for manufacturers. Aside from the pricing and auditing requirements described above, we are making the following provisions part of the final program, which were part of one or both of the separate programs in parts 85 and 1068:

- Auditing rates are generally set at four vehicle or equipment manufacturers per year, or enough to rotate through all the equipment manufacturers over a four-year period, whichever is less. A reduced rate may apply after several years of successful implementation of these requirements.
- We are continuing the approach already adopted to provide for a streamlined demonstration for integrated manufacturers where the auditing would effectively be an internal practice.

In addition, we are including the following provisions in the unified approach to delegated assembly that were part of the proposal for Small SI engines:

- Distributors may participate in delegated assembly, but only to the extent that they act as equipment manufacturers, adding aftertreatment devices before shipping the engines to vehicle or equipment manufacturers. Allowing distributors to further delegate engine assembly to another set of companies raises fundamental questions about the ability of engine manufacturers to adequately ensure proper final assembly of their engines. We are making a temporary allowance for this for Small SI engines to accommodate the transitional provisions allowing equipment manufacturers to gradually work toward making Phase 3 products.
- If engine manufacturers design their air-intake systems such that they depend on specific parts (identifiable by part number) to achieve proper air flow through the engine, that raises concerns that are similar to aftertreatment devices. In fact, we are currently pursuing an enforcement case where an equipment manufacturer did not follow the engine manufacturer's directions to use a specific air filter. We are specifying that air filters identified by part number must be included in delegated assembly, though we require audits related to air filters only if audits are already occurring for exhaust systems. If manufacturers specify intake air systems by performance parameters such as maximum pressure drop across the air filter, the delegated-assembly provisions do not apply. This is similar to the way we have treated exhaust components for systems not requiring exhaust aftertreatment. See §1068.260(a).

- Vehicle or equipment manufacturers submitting annual affidavits must include a count of aftertreatment devices received to verify that there were enough of the right models of aftertreatment devices for the number of engines involved.
- Engines need to be labeled to identify their status as delegated-assembly engines, either with a removable label or with "Delegated Assembly" noted on the engine's permanent label. This ensures that engines will not be introduced into commerce without an indication of their status relative to the certified configuration.
- Engine manufacturers must confirm that vehicle or equipment manufacturers have ordered aftertreatment devices corresponding to an engine order, but this confirmation is limited to the initial shipment of engines for a new certification and may occur up to 30 days after the engines have been ordered.
- For engines subject to requirements for production-line testing or selective enforcement audits, we specify that aftertreatment components must be randomly procured. We agree with the suggestion in the comments to broaden the allowance for randomly procuring components. As long as manufacturers use a method to randomly select components that are appropriate for the particular engine configuration, these components may come from any point in the normal distribution chain.

We agree that the labeling requirements are new for heavy-duty highway engines and are therefore allowing until the 2010 model year for manufacturers to start meeting requirements for these engines.

We agree that delegated assembly provisions do not apply for components that are not emission-related. See §1068.260(b). However, we disagree with IMPCO's comment to exclude air filters. Nevertheless, §1068.261(e) describes a less burdensome approach for air filters. We are including preamble language to further clarify the distinction between intake systems that are specified in the application for certification by part number or by performance specification.

We believe it is not appropriate for the regulations to specify that a single audit showing proper assembly procedures is a sufficient basis for discontinuing future audits. We are concerned that engine and equipment manufacturers must have an extended period of complying with these provisions with significant communication, oversight, and verification to ensure that engines are being assembled properly. The regulations in all our programs (proposed and adopted) have specified a reduced auditing schedule only after cycling through two four-year auditing periods. We continue to believe this is appropriate for the universal program.

With respect to production-line testing, we would expect manufacturers to need to keep simple records describing the algorithm used to make the selection.

We have modified parts 89 and 94 to allow manufacturers to use the delegated-assembly provisions and other provisions related to partially complete engines for land-based nonroad diesel engines and marine diesel engines. It is not likely that these engines will be using aftertreatment devices to meet current standards, but there may be circumstances where this may apply. The new regulatory provisions also clarify exemptions and special provisions that apply, for example, for within-company shipments between facilities and for shipping engines without certain engine components.

We acknowledge that manufacturing processes and regulatory requirements for locomotives and locomotive engines warrant special treatment with respect to shipment and assembly of aftertreatment devices. We have therefore adopted such provisions in 40 CFR part 1033 that apply specifically to locomotives instead of the delegated assembly provisions we are adopting in §1068.261.

1.5.6 Engine rebuilding

What Commenters Said:

Cummins requested clarification in the rebuild requirements of Parts 89 and 1039 via Part 1068 that a rebuilt engine may be used to replace any equivalent engine regardless of model year. (i.e. a rebuilt Tier 1 engine may replace a TPEM engine or an AB&T engine (assuming they are identical) of a later model year. They noted that this issue has been raised within Cummins particularly with large engines (>560kW) where there are often times fleets of vehicles that are supported with spare engines owned by either the mine owner or by a Cummins distributor. At the time of engine failure, or rebuild, Cummins believes it is acceptable to replace engines on a "like-for-like" basis regardless of model year. Because of TPEM and AB&T flexibility, the use of the term model year in 1068.120 could be interpreted to not allow this like-for-like replacement. Therefore, Cummins requested a revision to the regulatory language for §1068.120 as noted below. Cummins also commented on §89.1003 and §1068.240, as noted below, and commented that those changes may not be needed given that those sections deal with new replacement engines. However, Cummins commented that they would like EPA to consider those changes as well.

> 1068.120 : Rebuilding
> (f) If the rebuilt engine replaces another certified engine in a piece of equipment, you must rebuild it to a certified configuration of the same model year or Tier level as, or a later model year or Tier level than, the engine you are replacing. In circumstances involving a TPEM engine or an engine certified to a later Tier level using AB&T credits, the engine is considered interchangeable with a previous Tier engine for the purpose of installation in a piece of equipment as long as the engine is identical in all material respects to the engine being replaced.
>
> 89.1003(b)(7) : New Replacement Engines
> (v) Where the replacement engine is intended to replace an engine that is certified to emission standards that are less stringent than those in effect when the replacement engine is built, the replacement engine shall be identical in all material respects to a certified configuration of the same or later model year or Tier level as the engine being replaced. In circumstances involving a TPEM engine or an engine certified to a later Tier level using AB&T credits, the engine is considered interchangeable with a previous Tier engine for the purpose of installation in a piece of equipment as long as the engine is identical in all material respects to the engine being replaced..

1068.240(a)
(5) You make the replacement engine in a configuration identical in all material respects to the engine being replaced (or that of another certified engine of the same or later model year). This requirement applies only if the old engine was certified to emission standards less stringent than those in effect when you produce the replacement engine. In circumstances involving a TPEM engine or an engine certified to a later Tier level using AB&T credits, the engine is considered interchangeable with a previous Tier engine for the purpose of installation in a piece of equipment as long as the engine is identical in all material respects to the engine being replaced.

California ARB encourages EPA to address the status of remanufactured engines as being fully subject to the requirements for rebuilt engines in 40 CFR 1068.120, and to adopt labeling requirements for rebuilt engines similar to those in California's Off-Road Diesel Regulation at 13 CCR 2423(l).

OPEI commented that their units do not have hour meters and an exact hour of use is not always possible. OPEI suggests language in section 1068.120(j)(1) be reworded to indicate approximate hours of use or in-use service time and method used to determine such estimates.

EMA commented that the proposed provisions regarding engine rebuilding are acceptable but incomplete because they do not adequately address the difference between model year requirements and emission standard requirements. In the final rule EPA should clarify that an engine that is rebuilt may be used to replace any equivalent engine model regardless of the model year of the equipment.

EMA recommended that we include a definition for "rebuilding."

OPEI believes EPA may be creating burdens on industry segments unaware of this rule and incapable of providing the amount of burdensome records required by this part. OPEI proposes EPA exempt engines/equipment subject to part 1054 from this provision.

EMA commented that Small SI engines are significantly different than larger engines currently regulated under §1068.120. The listed requirements must either be excluded for Small SI engines or modified to allow the appropriate requirements for Small SI engines.

Letters:

Commenter	Document #
Cummins	0719
California ARB	0682
OPEI	0675
EMA	0691
EMA	0808

Our Response:

We agree with Cummins that the regulations should more carefully address rebuild requirements for special cases such as spare engines for maintaining a fleet, engines with Family Emission Limits above or below the standards, and engines produced under the Transition Program for Equipment Manufacturers. We have revised the regulations in §1068.120(f) to describe how the rebuilding provisions apply under several such scenarios, consistent with the approach recommended by Cummins.

We agree with California ARB that remanufactured engines are generally subject to rebuilding requirements. We note, however, that remanufactured engines might become "new engines," for example, if they are installed in new vehicles or equipment. In this case they would need to be certified before being introduced into commerce like any other new engine. Remanufactured engines that qualify as "new engines" are typically used as replacement engines. As such the provisions for the replacement-engine exemption in §1068.240 would apply, including the labeling requirements, as described in Section 1.5.7.

We agree that the rebuilding provisions should acknowledge that approximate service hours (or miles) are adequate for engines without hour meters (or odometers) and have changed the regulation accordingly.

We agree with EMA that a rebuilt engine may be used to replace any equivalent engine model regardless of the model year of the equipment and have changed the regulation accordingly.

The current regulations include language describing what qualifies (and does not qualify) as rebuilding. Absent any specific recommendations, we believe it is not appropriate to more carefully define what constitutes engine rebuilding. Moreover, the same requirements (except recordkeeping) generally apply for routine maintenance as for rebuilding so we believe it is also not necessary to add this kind of clarification.

We understand the concerns raised by OPEI for small spark-ignition engines. Engine repairs for a single-cylinder engine might involve replacing the piston or piston rings. This should still be done such that an engine remains in its certified configuration, but we agree that someone might easily do this maintenance without realizing that they have triggered a regulatory requirement. This is especially true for lawn and garden applications, but the same dynamic applies for small outboard engines and small engines used with recreational vehicles. We are therefore revising the regulation to waive the recordkeeping requirements for spark-ignition engines below 225 cc. Larger engines are much more commonly used in commercial applications where operators and repair professionals would be more likely to have maintenance and rebuilding practices that resemble those for diesel engines or for larger spark-ignition engines.

1.5.7 Replacement engines

What Commenters Said:

EMA commented that the existing replacement engine exemption was unworkable for partially complete engines. They recommended a separate replacement-engine exemption for partially complete engines, including any engine assembly in which some components necessary for engine operation were missing. They recommended that such engines could be used for replacement purposes with no restriction other than labeling the engines to identify them as "service use only". They also recommended that we define the terms "replacement engine" *and "destroyed."*

In response to draft regulatory language describing an allowance for a limited number of partially complete replacement engines without requiring the usual tracking, demonstration, recordkeeping, etc., EMA commented that these provisions should also apply for engines between 2.5 and 7 liters per cylinder, and that they should apply for marine diesel engines. They also noted that the labeling requirements in §1068.265 appeared to be in conflict with the labeling specifications in §1068.240.

ECO responded to questions about industry practices for replacement engines. They described Marine SI manufacturers as sending long blocks out only on an as-needed basis. There are some marinas willing to pay the flooring charges to keep blocks immediately available, but it sounds like this is probably the exception to the rule. Regardless, ECO noted that for the small manufacturers that might sell 200-300 engines per year, the 0.5% allowance is only 1 to 1.5 engines. ECO commented that this is not much. Based on input from Kodiak Marine Parts, ECO commented that 1% would probably be better, as it would give a little extra flexibility.

IMPCO asked whether §1068.240 applies only to engines that are specifically built as replacement engines, or to all engines that might be used as replacement engines, and noted that they do not build replacement engines for engines that are not in production. IMPCO noted, for example, that if the block cracks, the engine would typically be 'replaced' by bringing the piece of equipment to a service facility, the service facility orders an engine (block plus crankshaft) from the OEM or a warehouse, they remove the fuel system components, install the new block, and install the other, used fuel system components. IMPCO also asked how the OEM is supposed to know whether the short block is used for a currently certified engine family. IMPCO noted that the proposed regulations state that the partially complete engine exemption is not valid when engines are shipped to a non certificate-holder. IMPCO questioned whether service engines are covered? Finally, IMPCO also questioned why an exemption is needed to sell a replacement engine from their current production.

IMPCO also asked if an engine produced by a secondary engine manufacturer is considered a New Replacement Engine once assembly is complete at its facility or after it is installed in the equipment. They stated that "the standard-setting part defines a New Nonroad Engine as the time when it is fully assembled for the first time."

Some marine engine manufacturers pointed out that that boat owners sometimes want to upgrade their engines, not because they are at the end of their life but because they want more power, additional features, or new technologies. They suggested that manufacturers should be able to supply noncompliant replacement engines to meet the demand for these engines.

Kubota commented that they would like EPA to advise Kubota on the proper wording for a replacement engine label that is to be used on a "replacement engine" that is going in place of a failed TPEM (Flex) engine. From the statement of the replacement engine label, Kubota cannot legally install this label onto a TPEM engine. Per the CFR and CCR, the statement would be as follows; "THIS ENGINE COMPLIES WITH CALIFORNIA OFF-ROAD AND U.S. EPA NONROAD EMISSION REQUIREMENTS FOR 2004 ENGINES UNDER13 CCR 2423(j) AND 40 CFR 89.1003(b)(7). SELLING OR INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER THAN TO REPLACE AN OFF-ROAD ENGINE BUILT BEFORE JANUARY 1 2008 MAY BE AVIOLATION OF CALIFORNIA AND FEDERAL LAW SUBJECT TO CIVIL PENALTY." Because their TPEM engines would be produced after January 1, 2008, they have a conflict.

Kubota suggested wording be something like: "THIS ENGINE COMPLIES WITH CALIFORNIA OFF-ROAD AND U.S. EPA NONROAD EMISSION REQUIREMENTS FOR 2004 ENGINES UNDER13 CCR 2423(j) AND 40 CFR 89.1003(b)(7). SELLING OR-INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER THAN TO REPLACE AN OFF-ROAD ENGINE BUILT BEFORE JANUARY 1 2008 OR A FLEXIBILITY PROGRAM ENGINE MAY BE AVIOLATION OF CALIFORNIA AND FEDERAL LAW SUBJECT TO CIVIL PENALTY."

Cummins asked that the following sentence be added to §1068.240(a): "In circumstances involving a TPEM engine or an engine certified to a later Tier level using AB&T credits, the engine is considered interchangeable with a previous Tier engine for the purpose of installation in a piece of equipment as long as the engine is identical in all material respects to the engine being replaced."

Letters:

Commenter	Document #
Cummins	0719
Kubota	0744
ECO	0802
IMPCO	0812
EMA	0808
EMA	0809

Our Response:

While we do not necessarily agree with EMA's assertion that previous version of the replacement engine exemption would be unworkable for partially complete engines, we do believe that the approach being finalized is more appropriate. Under the revised approach, which is intended to address EMA's concerns, manufacturers will be allowed to produce replacement

engines (including partially complete engines) with less tracking. See section VIII.C.5 of the preamble and §1068.240 of the regulations for detailed descriptions of this allowance. This allowance will be limited for each subcategory to no more than 0.5 percent of a manufacturer's annual sales for that subcategory. We agree with EMA that this allowance should apply for engines between 2.5 and 7 liters per cylinder.

We disagree with the comment suggesting a high sales/production limit (1.0 percent instead of 0.5 percent). The comment noted that this might be especially appropriate for small volume manufacturers. We note that manufacturers are always allowed to produce and sell an unlimited number of replacement engines if they track the engines and take possession of the old engines. This would be a workable alternative for a manufacturer producing only a handful of replacement engines each year.

It is important to note that these provisions are intended to allow for replacement of engines that fail prematurely where all of the following is true:

- The engine cannot reasonably be repaired or rebuilt.
- A different used engine (including rebuilt engines) cannot be used.
- No new certified engine can be used.

No matter which path the engine manufacturer uses under §1068.240, the provisions may not be used to circumvent emission standards that apply to new engines. Thus, boat owners are not allowed to use replacement engines to upgrade their engines because they want more power or new features.

With respect to IMPCO's comments, the new replacement engine allowance is intended to allow a small supply of replacement engines where they are legitimately needed, and not necessarily to allow the continuation of all current business practices without any changes. Under the regulations being adopted, IMPCO would be able to provide replacement engines through service facilities. However, this may require a new administrative process. We have added a new paragraph to 40 CFR 1048.601 to clarify how this would work for Large SI engines. With respect to the comment about current-tier engines, a replacement engine exemption is needed only in the case of partially complete engines that are not in their certified condition when introduced into commerce.

It appears that IMPCO is confusing the definitions of "new", "engine", "replacement engine", and "date of manufacture". An engine produced by a secondary engine manufacturer is first considered an "engine" when the crankshaft is installed in the block (which occurs before it reaches the secondary engine manufacturer). It is also considered "new" from that point until title is transferred to the ultimate purchaser. However, the engine is generally considered to have a date of manufacture based on when it arrives at the secondary engine manufacturer. Whether or not it is considered a "replacement engine" has no bearing on the meanings described above.

In response to EMA's request for clarification, we note that destroying an engine generally means to crush, melt, or otherwise modify the engine block so that it cannot be reused

as an engine. Alternatively, you may destroy an engine by modifying it to destroy its original identity and make it a new engine.

We have revised the regulatory text to address Cummins' concern, but are not using their recommended text.

Finally, we have revised the labeling provisions to address concerns such as those raised by Kubota.

1.5.8 List of emission-related components

What Commenters Said:

MIC commented that it is proposed that "All components comprising the combustion chamber, including the piston, piston rings, block, head, and valves" be added to the existing list of "emissions-related components" listed in Appendix I to Part 1068. The inclusion of these basic engine components would be inconsistent with the definition of "emissions-related components" contained in section III of Appendix I, which is "any other part whose only purpose is to reduce emissions or whose failure will increase emissions without significantly degrading engine performance." Clearly, pistons, piston rings, the block, the head and the valves do not have emissions control as their only purpose. Because the "failure" of any of these parts will clearly degrade engine performance, they should not be added to the list of emissions-related components. Adding such components would also be inconsistent with the way on-road vehicles are treated under the Clean Air Act. The implications of this change are so great that there would need to be a careful evaluation of the cost before proceeding.

Arctic Cat commented on Appendix I to Part 1068 - Emission-Related Components (I)(5). This change greatly expands the definition of emissions related components to include the following: "All components comprising the combustion chamber, including the piston, piston rings, block, head, and valves." Arctic Cat recognizes this as a major departure from past EPA policy and is not consistent with how other categories are treated. It is also their understanding that this section is not consistent with the Clean Air Act. Arctic Cat does not feel a change of this magnitude it appropriate here given the absence of any discussion with industry on the nature of failures of the newly added components or their potential effect on emissions. In the recreational category failures of the newly added components have unique causes and effects which should be studied before proceeding with this policy change.

OPEI commented that the list of emission components is too general and can lead to broad misinterpretation as to what is covered. OPEI suggests EPA use the California ARB list.

EMA commented that EPA proposes to expand the emission related parts list (as defined in Appendix I to Part 1068) to include components comprising the combustion chamber, including the piston, piston rings, block, head, and valves. This expansion of the emission related parts list is not justified as those parts are critical to the basic function of the engine.

EMA also commented on Appendix I to Part 1068 – Emission-Related Components.

The emission related parts list as defined in Appendix I to Part 1068 is proposed to include components comprising the combustion chamber, including the piston, piston rings, block, head, and valves. This expansion of the emission related parts list is not justified as these parts are critical to the basic function of the engine.

Impco commented that we should add clarifying language to the list of components related to evaporative emissions to take into account the fact that the standards do not apply to engines fueled by natural gas or LPG.

Letters:

Commenter	Document #
MIC	0701
Arctic Cat	0709
OPEI	0675
EMA	0691
Impco	0812

Our Response:

We agree with the commenters that it is not necessary or appropriate to include the proposed changes to the list of emission-related components. We are not adopting the proposed changes.

We also agree with Impco's input regarding natural gas and LPG engines. However, we have addressed this concern by adding a note to the introduction to this appendix to clarify that the list of components does not make parts "emission-related components" if the equipment in which those components are installed is not subject to evaporative emission standards.

1.5.9 Export exemption

What Commenters Said:

Honda recommends that EPA apply the requirement for exemption labels ONLY when there is a reciprocal agreement between the United States and the other country to accept the EPA regulation and labeling as demonstrating full compliance with that other country's emission regulations. Honda also requests that EPA develop and provide a continuously updated list of these countries and sufficient lead-time to comply with these requirements. Finally, Honda recommends that the final rule provide another section under engines for export to allow a manufacturer in full control of engines or products destined for another part of the world to forgo the temporary exemption label on individual engines or product and boxes. Small engines and the equipment they power are not only valuable national industries but global industries with a positive contribution to U.S. international trade. The ability to build engines and products in the U.S., exempt from EPA regulation but complying with the regulations in another country, is an important option that exists today. Honda understands that the purpose of the exempt label is to prevent inadvertent introduction of these export engines or equipment using these engine into U.S. commerce. However, they believe the proposed label language has significantly greater

content than is necessary to convey the message that the engines are for export and exempt from U.S. EPA regulations. Also, in many cases the engines/equipment being exported are labeled for compliance in another country or area, such as Europe. The combination of another country's compliance label and a label stating that the engine is "not for sale in the U.S." would be more likely to convey some meaning to a potential label reader and it will still be useful (and less likely to be misunderstood) when the engine is in another country. Furthermore, a temporary exemption label is not the only means of assuring that engines or products are exported and not introduced into U.S. commerce. If a manufacturer has full control of the engines, or equipment with these engines, from the point of final assembly until they have left the U.S., a temporary label would serve no purpose.

OPEI provided the following comments related to the export exemption:

- It is not clear why §1068.230 is required at all. At a minimum OPEI believes §1068.230(a) needs revision. The term "with emission standards identical to ours" creates conflict with European regulation which may have identical emission standards but are not identical because of the lack of an ABT program, exemptions etc. OPEI suggests EPA means to say "with emission regulations identical to ours."
- Regarding §1068.230(c), OPEI believes each engine does not need to be labeled or tagged if the following conditions apply: 1) the shipping container is marked and 2) A manufacturer has procedures to insure they are not sold in the US market. 3) If an engine contains an emission label from another country. Otherwise, this paragraph should not apply.

Caterpillar expressed a concern that they (as the certifying manufacturer) appeared to be responsible even if another company would take an engine intended for export and sell that illegally in the United States. Caterpillar suggested that we instead identify the act of selling an export engine in the United States as a violation.

Impco recommended keeping the requirement for a permanent label on export engines and suggested requiring that the label include the corporate name and trademark.

Letters:

Commenter	Document #
Honda	0705
OPEI	0675
Caterpillar	0813
Impco	0812

Our Response:

The Clean Air Act is quite clear in describing the terms for exempting engines for export. Specifically, the Act calls for limiting the exemption for cases in which the other country has emission standards that differ from those that apply in the United States. The Act also specifies that exempt engines must be labeled. As a result, we have a consistent set of requirements for the various categories of nonroad engines, including Small SI engines regulated under part 90. This seems to be working today, so we do not see that there is a need for major changes to allow

for the free flow of commerce. Nevertheless, we are making three adjustments to the export exemption in §1068.230 to address the concerns raised by commenters.

First, we are establishing a streamlined path for certifying export-only engines where the destination country has the same emission standards. In particular, we would look for certification or other approval from the destination country as the basis for approving the export-only certification. Also, the requirement to pay certification fees would be waived for these engines. This special certification would be valid only for purposes of exporting the engines and would not be sufficient for selling the engines in the United States.

Second, we are clarifying what requirements apply for removable (or temporary) labels. In contrast to Honda's concern, we do not require permanent labels today for exported engines, nor did we propose such a requirement. For example, we specify that manufacturers can apply a removable label to exempted engines by labeling the container where multiple engines are packaged together. This is especially advantageous for Small SI engines where dozens of engines may be packaged together. In place of the removable label, manufacturers may alternatively apply a permanent label specified by the destination country if such requirements apply, in which case the bill of lading would need to also state that the engines must be sent to the named destination country to avoid a violation.

Third, we are revising the regulation to state that the exemption expires when the engine leaves the country. Anyone subsequently importing such an engine would therefore be guilty of a violation, rather than the original manufacturer. However, if at any point in the manufacturing or distribution process such an engine is placed into service in the United States, the certifying manufacturer would be held responsible for the violation. Manufacturers would do well to take steps to ensure that anyone responsible for installing or distributing such engines understands how important it is to avoid a situation where these engines are placed into service in the United States.

We agree that it is necessary to clarify what provisions apply for defining when another country has emission standards identical to ours. We would generally understand standards to be identical if they specify the same numerical level of the standard, the same test procedures (including fuel specifications), and the same approach for allowing the use of emission credits. For example, Canada currently specifies that Small SI engines used there must meet U.S. EPA standards. These engines would therefore not be eligible for an export exemption and must therefore be certified with EPA. However, Canada also specifies that a limited number of engines used in specialty applications may meet the Phase 1 standards rather than the current Phase 2 standards. These engines would be exempt from our emission standards and certification requirements because the applicable standards are clearly different than those that apply to Small SI engines produced for the United States for the given model year. If a manufacturer requests an exemption to export engines/equipment to a country that has standards similar but not identical to ours, we may ask the manufacturer to specify how such standards differ from ours. We may attempt in a future rulemaking to add language to the regulation to clarify when we would consider standards to be identical.

Note that engine manufacturers do not need an exemption or any special approval to ship engines that are certified and labeled for the U.S. market if some of those engines may be diverted for export by distributors or retailers.

Impco incorrectly pointed out that current regulations specify a permanent label for export engines. The regulations specifically state that the label need not be permanent. This is appropriate since there is no benefit of having the label once the engine is outside the United States. Moreover, manufacturers have pointed out that a permanent label would be problematic once the engine is sold and placed into service in another country. We agree that the label should identify the manufacturer's corporate name and trademark and have changed the regulation accordingly.

1.5.10 Manufacturer-owned exemption

What Commenters Said:

EMA commented that adding "possession" to the list of qualifying criteria for the manufacturer-owned exemption adds a significant constraint on manufacturer's ability to complete all the requirements associated with introducing new products into the marketplace.

Impco similarly objected to including the word "possession" to the list of qualifying criteria for the manufacturer-owned exemption, noting that another company should be able to execute a development program on their behalf without triggering the need for EPA approval under the testing exemption.

Letters:

Commenter	Document #
EMA	0808
Impco	0812

Our Response:

The existing manufacturer-owned engine exemption specifies that "an engine may be exempt without a request if it is a nonconforming engine under *your ownership and control and you operate* it to develop products, assess production methods, or promote your engines in the marketplace." We proposed to add the word "possession" to this language as a clarification because we discovered that some manufacturers mistakenly believed this exemption allowed them to provide these engines to customers for testing. Clearly, the existing language prohibits anyone other than the manufacturer from operating the engines. Thus, this revision is not changing the provisions that currently apply under the manufacturer-owned engine exemption; we are adding the word "possession" simply to eliminate any confusion.

It is a separate issue whether we *should* allow manufacturers to relinquish possession of these engines without obtaining a test exemption. However, we continue to believe that engines exempted as manufacturer-owned engine need to be strictly controlled since this exemption does

not require prior EPA approval. Anyone wishing to arrange for someone else to operate engines may ask for EPA approval under the testing exemption.

1.5.11 Other issues

What Commenters Said:

GE commented that the proposed §1068.420 as it would apply to an engine family when evaluated as part of a Selective Enforcement Audit (SEA) establishes failure criteria that are less stringent for new locomotives than the criteria established in §1033.415 for in-use locomotives that have between 50% and 75% of useful life service. The criteria in §1068.420 and Appendix A indicates that a failure rate of 60 % or more is required to establish that an engine family is noncompliant whereas §1033.415 mandates a test procedure that when extended to the maximum allowable number of 10 test locomotives logically establishes that a failure rate of 40% or more could be considered a noncomplying engine family based on the failure rate and EPA's judgment and consideration of other test results such as average emissions levels, existence of any defects, and other unspecified test factors. GE believes that it is illogical and unrealistic to expect locomotives that have been in service for 50% to 75% of their useful life to have an emissions compliance rate greater than the EPA has established for new locomotives and recommends that the compliance criteria for in-use testing in §1033.415 be changed to be no more stringent than that set for new locomotives as established in proposed §1068.420 and Appendix A.

California ARB encourages EPA to revise the provision in 1068.250(j) that would allow the extending of compliance deadlines for small businesses for up to three years total. At most, California ARB believes that the relief should be granted for two years in cases of extreme hardship. A two-year period should be sufficient to provide any manufacturer, even a small business entity, adequate time to achieve compliance.

California ARB also commented that the provisions of part 1068 apply to nonroad diesel engines, large spark-ignition engines, recreational vehicles, small spark-ignition engines, and marine spark-ignition engines. Although a unified program may appear to be easier for manufacturers to follow, it may be difficult to implement due to the distribution of various engine types in different business sectors.

OPEI commented on the following items:

- §1068.110(e) suggests owners can do diagnosis and repair themselves and charge manufacturer. This needs to be reworded to clarify that owners should file their warranty claims through dealers or other authorized representatives.
- §1068.210 conflicts with language in §1060.215(b). The provisions in §1068.215(b) should apply for development and test engines. OPEI asks whether §1068.215(b) does not apply to a test exemption. When developing new products, an important component of the program is field testing in real world conditions. Often units are placed with various test crews that use them in their normal day-to-day business activities. The units are monitored by the manufacturer and at the end of the test period, collected, reviewed and usually scrapped. While the crew is generating revenues by the use of the equipment, the manufacturer is not. OPEI asks how they apply this exemption for

testing/developing new engines/equipment. OPEI also asks why §1068.315 does not include test exemptions.

- OPEI requests EPA include emails as an acceptable form of owner notification of recall in §1068.520(a). OPEI notes that §1068.520(a)(9) requires a self-addressed card. OPEI asks about using an Internet site or toll-free number instead.

EMA commented on the following proposed items.

- The proposed definition of engine-based test appears to relate exclusively to exhaust emissions that are reported in g/kW-hr. Instead of engine-based test, the defined term should be "Engine-based Exhaust Emission Test" in order to differentiate between testing an engine for exhaust emissions and testing associated with demonstration of compliance with evaporative requirements that are either already in place (such as those for LSI and Recreational Vehicle), or those being proposed (such as those for Small SI or marine SI engines).
- The proposed definition of an incomplete engine assembly does not make sense and must be removed or carefully revised in a subsequent rulemaking in light of the discussion above regarding the definition of an engine.
- The proposed definition of a secondary engine manufacturer also will need to be revised, as necessary, based on the ultimate resolution of the definition of an engine and/or incomplete engine. As such, it should be deferred to a subsequent rulemaking.
- The proposed language addressing the practice of engine sector changes needs to be modified to make it clear that an engine that changes sectors, for example from nonroad to stationary, retains the engine's original date of manufacture and is subject to that sectors applicable standards for that original date of manufacture.
- The NPRM requests comments on applying any or all of the 'special compliance provisions' proposed for Small SI engines in Part 1054 to all nonroad engines by incorporation into Part 1068. The NPRM provisions for Small SI engines include several topics including: warranty coverage, bonding requirements, model year naming for imported engines, reporting requirements, etc. that require significant discussion with the various affected industries covered by Part 1068 prior to implementing these changes. EMA is ready to work with the agency to develop the required outreach and appropriate changes to Part 1068 but is concerned that the addition of this burden will delay the Final Regulation. (See 72 FR at 28212.)
- EMA supports the optional early adoption of 40 CFR Part 1068 (rather than the similar compliance provisions in parts 89, 90, 91 and 94) but objects to making this early-adoption mandatory. Many of the Part 1068 changes require significant resources to implement, and manufacturers may desire to implement these changes at the same time as the emissions standards change. (See 72 FR at 28212.)

Arctic Cat commented that sometimes a wrecked snowmobile can be fixed by replacing the tunnel (upon which the emissions label is affixed). The snowmobile must be wrecked in just the right way to call for tunnel replacement, otherwise it is usually totalled. A handful of times a year Arctic Cat has customers order tunnels and they have been asked about the emissions label. Arctic Cat assumes a new emissions label should or must be affixed as part of the repair since the old label would be discarded with the damaged tunnel. They cannot find any rules governing this situation. Such rules or guidance documents would be helpful in defining our policies.

Impco suggested that we modify §1068.105 to clarify that equipment manufacturers are subject to penalties if they do not follow the regulations, including emission-related installation instructions, and to add explanatory language to make it clearer what equipment manufacturers must do.

Letters:

Commenter	Document #
GE	0679
California ARB	0682
OPEI	0675
EMA	0691
Arctic Cat	0731
Impco	0812

Our Response:

GE's comment on the proposed §1068.420 is no longer relevant because the recently finalized 40 CFR 1033.601 excludes locomotives from Selective Enforcement Audits.

We intend to evaluate hardship applications submitted under §1068.250(j) on a case-by-case basis. We generally agree that one or two years of hardship relief should be adequate for almost all cases. However, we believe it would not be appropriate to change the regulation to rule out even the possibility of considering longer hardship relief for exceptional circumstances.

Part 1068 indeed applies broadly. The scope of part 1068 now includes all nonroad engine categories, though some types of engines will not be subject to part 1068 until new standards apply sometime in the future. We believe there are strong advantages to including these general compliance provisions in a single place in the regulations. Keeping one set of regulations current is straightforward, since we will not need to update parallel regulatory provisions when we amend the regulations periodically. We see no particular challenge in implementing these general compliance provisions for multiple engine categories as a result of this approach to adopting the regulations in one location. There are occasions where we need to make distinctions for certain engine types, but this is routinely handled directly in part 1068 or with clarifying provisions in the standard-setting part. This is certainly no greater challenge than having the entire program written separately for each engine category.

We have revised §1068.110(e) to clarify that manufacturers may require that owners submit warranty claims only through authorized repair facilities, consistent with OPEI's suggestion.

The manufacturers' comments show that they have misinterpreted the provisions in §1068.210 and §1068.215. In particular, §1068.215 specifies that the manufacturer-owned exemption is limited to engines owned and controlled by the manufacturer such that they are not used in revenue-generating service. It is incorrect to assert that this does not require actual possession of the engines by the engine manufacturer, or that the engines may be used to

generate revenue, as long as the revenue does not go to the engine manufacturer. We are therefore adopting the clarifying change to include "possession" as an explicit requirement to qualify for the manufacturer-owned exemption. We understand that manufacturers have a legitimate need to share experimental engines with their customers, including those that may be used in revenue-generating service. However, the test exemption in §1068.215 is the appropriate path for these engines. The test exemption is available only upon request, which gives us the opportunity to be involved and aware of such engines. Engine manufacturers that hold a certificate of conformity (for any engine model or application) must generally submit only a minimal set of information and can have an exemption approved to cover a two-year period. This involves a minimal burden for the manufacturer, but keeps us informed of the status of these engines. We believe it would not be appropriate to allow for this practice without requiring the engine manufacturer to identify the basic elements of their plans to introduce such engines into U.S. commerce. As for importation, the testing exemption is temporary, so it is described in §1068.325 rather than §1068.315. It may turn out that engines are scrapped before the exemption expires, but it is still the case that the exemption applies for a given time period rather than for the life of the engine.

We agree that the regulation should acknowledge that Internet, e-mail, and toll-free phone numbers are legitimate alternatives to communication by traditional mail service.

The term "engine-based test" is used only in limited cases and in each instance the meaning of the term clearly applies only for exhaust emission testing. This also aligns with the intuitive understanding that engines are generally tested for exhaust emissions and equipment (or fuel-system components) are tested for evaporative emissions. We therefore believe it is not necessary to change the proposed definition.

The regulations no longer use the term "incomplete engine assembly" so we have removed this definition from §1068.30.

We have revised the definition of "secondary engine manufacturer" to reflect the input received regarding partially complete engines. As such, we see no need to defer these regulatory provisions or definitions until a later rulemaking.

We agree that the regulation should include clarifying language to state that changing an engine from stationary to nonroad would not cause the engine to be subject to standards based on the date of the conversion. Nonroad standards would apply based on the original date of manufacture. We have revised §1068.31 accordingly.

We have chosen to include the restriction related to naming model years for imported products in part 1068, rather than including that only for Small SI engines. We placed the revised regulatory language in the rulemaking docket and interacted with the Engine Manufacturers Association and several individual manufacturers to confirm that these provisions could be applied more broadly than just for Small SI engines. EMA's suggestion to waive the restriction for engines or equipment originally produced in the United States would be difficult to implement. It would be difficult for Customs to differentiate incoming products based on whether or not they had an actual point of origin within the United States. Perhaps more

importantly, such a policy would likely be impermissible under the rules governing international trade, since it would clearly provide preferential treatment for domestically produced items.

We are adopting the other special compliance provisions, such as warranty assurance and bonding, only for Small SI engines. We may propose to apply these provisions for other engine categories in a later rulemaking.

In the absence of any supporting comments related to accelerating the migration to the general compliance provisions in part 1068, we are not making any broad changes to require earlier compliance with the regulatory provisions in part 1068. We agree, however, that there may be good reasons for manufacturers to opt into the part 1068 provisions before they would otherwise apply. Since these provisions represent the long-term plans for all nonroad engines, we are including a provision allowing manufacturers to comply with specific provisions of part 1068 early.

We agree that the regulations should include specific provisions to address the various responsibilities related to replacing emission control information labels due to accidents or other need for repairs. The engine manufacturer should be responsible for providing duplicate labels in these cases and should take steps to ensure that the labels are applied properly. These duplicate labels should include all the information from the original label except for the date of manufacture, which would be impractical to include as described in Section 1.3.2.

We agree with Impco's recommendation to modify §1068.105 and have changed the regulation accordingly.

1.6 Certification fees (40 CFR part 1027)

What Commenters Said:

EMD included a comment about the certification fees for locomotive remanufacture systems in its written submission to docket EPA-HQ-OAR-2003-0190.11 They reiterate it here, in its more proper venue. The certification fees rule, included in 40 CFR Part 85, allows a reduced certification fee if the fee exceeds one per cent of the "aggregate projected retail sales price of all vehicles or engines covered by that certificate."12 That language is carried over to the proposed Part 1027.13 In the case of emissions remanufacture systems, EPA interprets this provision to mean the price of the locomotives to which the kits are applied. This interpretation means that an engine family consisting of remanufacture systems whose price fairly reflects their contents has no chance of qualifying for a reduced fee unless sales of the systems certified under that family are zero, because the fee is much less than one per cent of the value of even one locomotive.

EMD commented that this situation is unfair to system manufacturers. EMD believes that the intent of the rule is to give manufacturers relief if their economic benefit is not commensurate with the cost of certification. The economic benefit to the manufacturer of a remanufacture system is the revenue to be gained by the sale of the system, not the value of the locomotive to which it is to be applied. It appears that the rule was written with only engines and complete

vehicles sold by a manufacturer in mind, omitting consideration of remanufacture systems, which are a collection of parts with only a small fraction of the value of the complete engine or vehicle. EMD requests that this rule section be rewritten to include one per cent of the aggregate retail sales price of remanufacture systems, not the price of the locomotives to which they are applied, as the parameter for comparison to the certification fee to qualify for a reduced fee.14 The modification should be applied both to the applicable section of the current rule, Part 85, and to the new Part 1027.

EMD continued that EPA proposes to adjust certification fees only if the adjustment would exceed $50 per engine family. EMD opposes this proposal. EMD's engine families are in the "Other" category, which includes locomotives and compression-ignition marine engines, as well as other smaller classes of engines. Since fees were initially assessed in 2005, the fee for this category has declined from $826 to $802. EMD believes that it will continue to decline as the number of certification applications in this category increases. Therefore, the effect of EPA's proposal would be to hold the fee at an artificially high level until the adjustment reached $50, increasing EPA's revenue from this program at the expense of manufacturers. EPA should continue to adjust fees annually as required by the rule currently in force.

Letters:

Commenter	Document #
EMD	0687

Our Response:

We agree with EMD's suggestion to reconsider the cost basis for reduced fees for remanufacturing kits. We already have provisions in place for fuel-conversion kits in which the regulation specifies that the basis for evaluating the one-percent threshold is the value of the kit rather than the value of the engine. This applies anytime the particular engine is already covered by a certificate of conformity based on the original fuel. We believe a remanufacturing kit is analogous to a fuel-conversion kit for purposes of certification fees. While the remanufacturing kits may in some cases be applied to uncertified engines, in all cases the remanufacturing kits (and not the engine that is being modified) define the scope of the certification. We are therefore modifying the regulation to allow for reduced fees where the assessed fee is more than one percent of the value of the remanufacturing kit or remanufacturing system. This applies equally to locomotives and marine diesel engines, which are now also subject to remanufacturing certification provisions.

We disagree with EMD's assessment and recommendation regarding annual fee adjustments. We believe it is rather short-sighted to make a long-term policy decision based on an extrapolation of the trend from the last two or three years. While there have been substantial additional numbers of applications for certification recently, there is reason to believe that the calculated fee will not universally trend downward. First, some new applications result from the introduction of new emission control programs, such as for Large SI engines and recreational vehicles, which are clearly one-time effects. Second, while there has been a large number new companies certifying products from overseas, we are concerned in some cases about the ability of these companies to fulfill their obligations for warranty, recall, and other in-use compliance

provisions. We are taking steps in this rule to make clear that certification is more than a one-time requirement, which we believe will serve as a disincentive for some companies that may otherwise have thought that certification provided a simple and clear path for introducing products into the U.S. market. We believe this trend will stabilize at some point. Third, even if these trends persist, it will not be long before the calculated fee exceeds the $50 threshold and we will change the fees accordingly. Fourth, inflation is part of the equation for calculating fees. We would not expect the effect of increasing numbers of certificates to always be enough to offset inflationary effects. Over any reasonable time frame, we would still expect the proposed provision limiting annual fee changes to be revenue-neutral.

EMD did not address the underlying reason for the proposal to limit annual fee changes. Our proposal was focused on minimizing confusion and administrative errors. To the extent that fees do not change from year to year, there will be fewer mistakes when people make their payments. Under the current program, it is not uncommon for people to overpay or underpay by a nominal amount. It is time-consuming, awkward, and wasteful to spend the time required to collect an additional $8 because an applicant was not aware that the fee had increased. Looked at from the other side, the cost to the government of issuing an $8 refund is about $75. We believe the public benefit of avoiding administrative errors far exceeds the benefit to EMD from reducing certification fees by $24.

Finally, there is a place for being cost-conscious; however, we believe the amounts in question hardly warrant controversy. In the most extreme case, under the proposed rule we would have a fee that is $49 less than it could be with an automatic annual readjustment. If EMD would sell a single locomotive in the family, the certification fee would be about 0.003 percent of their revenue for that one locomotive. With actual sales in the hundreds of units and expectation that these cost differentials will be much closer to zero, even this estimate vastly overstates the relative burden represented by the fee that is higher than the calculated value.

We find that our original reasons for limiting annual fee adjustments are unchanged. We are therefore finalizing these provisions as proposed.

1.7 Preemption of state regulations (40 CFR part 1074)

We have addressed comments related to preemption of state regulations in "Response to the Petition of American Road and Transportation Builders Association to Amend Regulations Regarding the Preemption of State Standards Regulating Emissions from Nonroad Engines," July 25, 2008.

1.8 Technical amendments for Large SI engines (40 CFR part 1048)

1.8.1 Fuel tank permeation

What Commenters Said:

IMPCO commented that EPA proposed that nonmetal fuel tanks must use a qualifying design specified in 1060.240 § 1048.245 How do I demonstrate that my engine family complies with evaporative emission standards?

(e) (1) (i) … Nonmetal fuel tanks must also use one of the qualifying designs for controlling permeation emissions specified in 40 CFR 1060.240.

According to §1060.1, these new LSI permeation standards are effective Model Year 2007.IMPCO requests that this be changed to MY2010. Given that it is now August 2007, it is too late for MY2007 design to change and MY2008 designs are frozen. Additionally, because MY2009 is an emissions carryover year, engine manufacturers did not anticipate making any design changes until MY2010.

ECO commented that they think the real concern for Genie is when the new requirements will come into effect.

Letters:

Commenter	Document #
Impco	0692
ECO	0741

Our Response:

We agree that allowing some lead time for implementing the design requirements related to plastic fuel tanks is appropriate. Delaying the implementation date until the 2010 model year should make it possible for companies to work with fuel tank suppliers to coordinate plans for making a smooth transition toward making compliant products.

1.8.2 Diurnal emission testing

What Commenters Said:

IMPCO noted that the proposed regulations state that a gas cap must be tethered or self-closing and stay sealed up to a positive pressure of 24.5 kPa. IMPCO commented that the definition of 'sealed' is still somewhat nebulous. IMPCO suggested that, among other allowable designs, the following should also be considered 'sealed':

- A fuel cap design used by an automotive OEM that has been certified under the EPA or California ARB enhanced evaporative emissions standards, or
- A fuel cap that is listed under UL 558, 'Industrial Trucks, Internal combustion Engine-Powered'
- Calculated HC emissions from the gas cap are less than some percentage of the evap standard (possibly less than 20%) over the 24-hr diurnal test (include a standard value to use for the % of HC in air at a certain temp)

Protectoseal believes their fuel caps can comply with the proposed requirements to stay sealed. Protectoseal noted that they have defined the set point of our caps as the positive pressure at which the caps first exhibit bubble leakage. Depending on the cap size and style, this bubble tight set point is between 3.5 psig and 4.5 psig. The caps are further designed to provide venting relief as the positive tank pressure increases beyond this set point. The caps also provide

vacuum relief (under negative pressure conditions) to allow make-up air to enter the fuel tank and allow smooth flow of fuel to the engine. (Protectoseal included literature sheets that provide representative data of the flow/leakage data of the caps under pressure and vacuum conditions.) Protectoseal noted that they have worked with Underwriters Laboratories to make sure that the caps meet all their functional and safety related requirements (as evidenced by the UL Listing for our new designs) while also minimizing emissions into the atmosphere when the cap assembly is subjected to positive pressure.

Letters:

Commenterd	Document #
Impco	0614
Protectoseal	0615

Our Response:

We understand that an unqualified requirement to maintain sealed fuel tanks can be problematic, if only to recognize that a tank with undetectable leaks may nevertheless experience an infinitesimal vapor loss through very small imperfections in gasket materials, especially as materials age in normal service. Protectoseal's experience demonstrates that the concern for leaks is not a question of feasibility with respect to detectable leaks as measured by normal diagnostic tests. As a result, we do believe it is not necessary to add the several options recommended by Impco for demonstrating that a fuel cap will adequately keep a fuel tank sealed. Rather, we are revising the regulation to require only that sealed tanks prevent measurable leaks. This should avoid a situation where someone feels at risk of being noncompliant based on extremely low leakage rates. Underwater "bubble tests" would be one appropriate method for establishing whether there is a measurable leak.

1.8.3 Certification related to evaporative emission standards

What Commenters Said:

ECO commented in order to address the inherent complications related to evaporative certification for LSI and SD/I engine families, ECO suggests that EPA consider establishing a component certification process for engine system / equipment components that have a bearing on the evaporative emissions of the engine / equipment. For instance, EPA should consider allowing equipment OEMs, or component manufacturers, to conduct their own independent certification of evaporative system components, including fuel tanks, lines, and caps. The format of this program could follow the format that the California ARB utilizes for Small SI engine evaporative components.

Letters:

Commenter	Document #
ECO	0712

Our Response:

We adopted evaporative emission requirements with the understanding that the large majority of gasoline-fueled engine models would be in installed in metal fuel tanks. In this scenario, designing systems to control permeation and diurnal emissions is very straightforward. Now that we are implementing these requirements, it has become clear that plastic fuel tanks are an important exception to accommodate. We have seen that it is impractical to expect engine manufacturers to be responsible for including plastic fuel tanks in their application for certification, since they generally are not involved in designing, shipping, or installing the fuel tanks. We believe it is appropriate to allow fuel tank manufacturers or equipment manufacturers to certify fuel tanks separately. We have revised part 1060 to allow for this certification path.

1.8.4 Definition of small-volume manufacturer

What Commenters Said:

ECO commented that 1048.801 defines a small volume manufacturer as an engine manufacturer with U.S.-directed production volumes, subject to Part 1048, totaling no more than 2,000 engines per year. It also defines a SVM as an engine manufacturer with fewer than 200 employees. Although ECO agrees with the redefinition of SVM, the new definition is missing the distinction that a company qualifies as a SVM by meeting either of the two criteria, not both. To provide a precise definition of SVM, the first sentence of the definition should read "Small-volume engine manufacturer means either one of the following."

California ARB's current large spark-ignition engine regulations do not have assigned DFs for small volume engine manufacturers. However, California ARB accepts EPA-approved "assigned DFs" for small volume engine manufacturers during the certification process. Due to variability of emission control technologies designed for large spark-ignition engines, California ARB will continue to work closely with EPA to review and approve "assigned DFs" on a case-by-case basis.

Letters:

Commenter	Document #
ECO	0712
California ARB	0682

Our Response:

ECO's interpretation of the proposed change to the definition of small-volume engine manufacturer is consistent with our intent. We have changed the wording of the definition to make this distinction clearer.

We look forward to working with California ARB further regarding assigned deterioration factors.

1.8.5 Additive deterioration factors

What Commenters Said:

IMPCO strongly supports allowing manufacturers to use either Multiplicative or Additive DFs. With more sophisticated engine technologies and ever-decreasing emissions, even the slightest increase in emissions can tremendously affect a multiplicative DF calculation. For example, with a low-hour value of 0.1 g/kW-hr and a 2,500-hr value of 0.3 g/kW-hr, the extrapolated 5,000-hr multiplicative DF is 5.000. However, an additive DF would be 0.400 g/kW-hr, which is far more representative of in-use deterioration.

ECO commented that newly added text to 40 CFR §1048.240(c)(2) states that engine manufacturers may utilize additive DFs for engine families with low-hour emission levels below 0.3 g/kW-hr. The mandatory use of multiplicative deterioration factors (DF) penalizes low emission engines, as the multiplicative deterioration process creates an exponential penalty for engines that produce extremely low 0-hour emissions. Because the allowance to use additive DFs encourages the development of the lowest emitting engine technologies, ECO and their stakeholder group fully support this change and encourage EPA to retain the additive DF allowance in the final rule.

In subsequent comments, ECO suggested changing the threshold for using an additive DF from 0.3 g/kW-hr (for all pollutants), to one based on measured low-hour test results less than 11 percent of the applicable standard. Alternatively, the threshold for CO could be increased to 0.48 g/kW-hr. These adjustments would take into account the higher numerical standard for CO.

ECO also suggested in the later comments that the regulation should state that a given engine might use an additive DF for one pollutant and a multiplicative DF for another pollutant.

California ARB supports using an additive DF if the emission levels are below 0.3 g/kW-hr. The use of an additive DF for engines with very low emission levels can accommodate the mathematical effects during the durability calculation.

Letters:

Commenter	Document #
Impco	0692
ECO	0712
California ARB	0682
ECO	0798

Our Response:

We agree that a slight increase in the accommodation for additive DFs for CO are appropriate. Since the mathematical and technological effects that lead to additive DFs are driven by the magnitude of the emission levels, not the compliance margin, we believe the best approach is to adopt a fixed threshold of 0.5 g/kW-hr for CO. This approach involves a consistent level of precision relative to the threshold for HC+NOx emissions.

The regulatory language in §1048.240 clearly provides for a separate decision regarding additive and multiplicative deterioration factors for HC+NOx and CO. This should make clear that the decision for an additive deterioration factor for one standard does not require an additive deterioration factor for the other standard.

1.8.6 Field-testing demonstration for constant-speed engines

What Commenters Said:

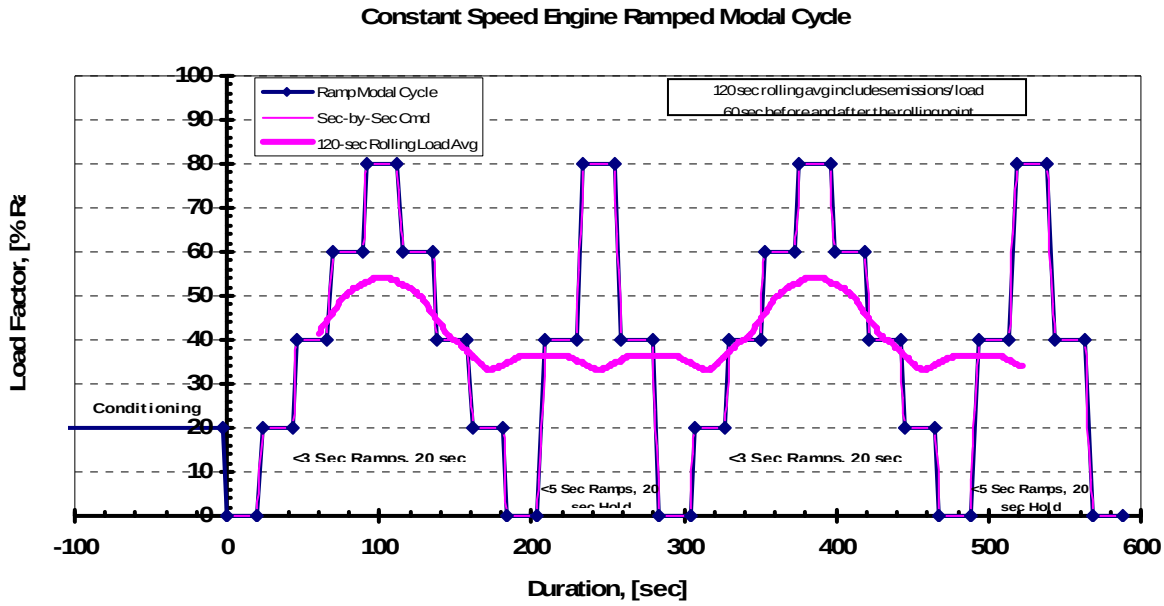
Intertek/Carnot recommended an approach to demonstrating for certification that constant-speed engines meet the field-testing standards. We requested comment on this because there is no longer a transient test requirement for constant-speed engines. The recommended testing involves ten minutes of engine operation consisting of steady operation for 20 seconds under several different load conditions. The test would be run like a ramped-modal cycle, except that the transitions between modes would last three seconds for increasing engine load in 20-percent increments and they would last five seconds for increasing load in 40-percent increments. The cycle does not include operation at full load, since spark-ignition engines generally don't operate for an extended time at full load. See the figure below for the detailed sequence of engine loads.

Letters:

Commenter	Document #
Intertek Carnot	0740

Our Response:

We believe the recommended cycle provides a good tool for evaluating whether constant-speed engines will adequately control in-use emissions under engine operation not included in the D2 cycle used for steady-state testing. This includes changes in engine load that would be common for typical in-use operation (increasing pump output, adding devices powered by a generator, etc.). These changes would not always occur with this frequency, but we believe this schedule of engine operation is realistic for many in-use scenarios. If manufacturers have information available to show that a different approach is more appropriate for their engines, we would consider approving alternative demonstrations. This might involve testing with the original constant-speed transient test, or some other schedule of engine operation to better reflect a relatively worst-case scenario of engine operation.



1.8.7 Other issues

We included several technical amendments for part 1048, which led to a variety of comments on relatively minor issues. This section describes these comments and our responses to them. We additionally address comments related to applying an engine's build date on the emission control information label in Section 1.3.

What Commenters Said:

IMPCO commented that EPA proposed to remove the requirement for constant-speed engines to meet the transient emissions standards in 1048.101(a). IMPCO strongly supports this, as the transient test cycle or constant-speed engines is not at all characteristic of constant-speed engine operation. The steady-state test cycles are far more representative and appropriate.

IMPCO also commented that EPA proposed to remove (b)(1) through (b)(11) of the AECD detailed description in the application for certification. IMPCO strongly supports this. It is important to document all AECDs to ensure that the proper regulatory guidelines are being followed. However, the additional time required to detail every aspect presently identified in the regulations creates an unnecessary burden on the manufacturer while providing little to no incremental benefit to EPA.

IMPCO also commented regarding § 1048.120(c), 1048.240(b), 1048.605(c)(2), 1048.610(d)(2), 1068.101(b)(2), 1068.120(a), 1068.501(a). Several areas throughout the proposed regulations refer to an increase in exhaust emissions of any pollutant. Pollutant should be defined only as those regulated under Parts 63, 1048, et al.

ECO commented on page 28148 of the Federal Register notice, section E(1) Deterioration Factors proposes an allowance for small volume engine families to utilize assigned deterioration factors. Additionally, on page 28213 of the proposal, EPA requests input on the use of assigned DFs for small volume engine families and requests comment on the appropriate production threshold for this allowance. ECO and their stakeholders feel this provision is necessary to allow flexibility for small volume SSI engine families. ECO also agrees with EPA, that the allowance to use assigned DFs for small volume engine families should also be incorporated into the large spark-ignition (LSI) engine rules contained in 40 CFR 1048. As it stands, there are numerous companies that do not meet the definition of small volume manufacturer (ref. 40 CFR 1048.801), but that produce one or more families of engines with production quantities of only a few hundred per year. This small production quantity does not allow MORs the ability to recoup costs associated with a typical durability operating cycle (2,500 hours), and often results in MORs discontinuing the certification and production of marginal product lines. ECO recommends that EPA consider the use of assigned deterioration factors for all LSI engine families with annual production quantities less than 300 units.

California ARB commented on the following sections:

- **22. Diurnal Temperature Cycle (40 CFR part 86.133-96):** 40 CFR part 86.133-96 requires a diurnal temperature cycle not common in California or much of the southwest. The temperature profile used by California ARB to represent California conditions is 65-105°F. California ARB recommends EPA modify the rule to require the more restrictive profile, which in addition to harmonizing, would ensure the expected emissions reductions are achieved even in the warmer parts of the country.
- **23. Diurnal Standard (40 CFR part 1048.105):** 40 CFR part 1048.105 requires tanks to meet the diurnal standard of 0.2 grams per gallon-day (g/gal-day). California ARB agrees that 0.2 g/gal-day is currently achievable. California ARB has test data that shows 0.1 g/gal-day may also be achievable. California ARB suggests that EPA propose a future date that includes the more stringent 0.1 g/gal-day standard.
- **24. Pressure Standard (40 CFR part 1048.245):** 40 CFR part 1048.245 requires a standing pressure test of 3.5 pounds per square inch absolute (PSIA). California ARB test data shows that on occasion tanks in California and presumably other warmer states can reach above 4.0 PSIA. California ARB recommends increasing the test standard to 5.0 PSIA.
- **25. Production Line Testing Exemption (40 CFR part 1048.301(a)(2)):** EPA's proposal exempts large spark-ignition engine families with a projected U.S.-directed production volume below 150 units from routine production line testing. However, production line testing is an important tool to ensure that manufacturers are meeting the requirements. Therefore, EPA should reconsider this exemption. California ARB plans to retain its current requirement for small volume manufacturers to test one percent of their California production.
- **26. Production Line Testing Procedures (40 CFR part 1048.305(a)):** EPA's proposal requires manufacturers to use either the steady-state or transient testing procedures to show that the production-line engines meet the exhaust emission standards. However, it is still not quite clear which test cycle should be used to generate DFs for production line testing. EPA should clarify that it will not allow manufacturers to use a DF generated by a steady-state test cycle to apply to a production line test using a transient test cycle.

- **27. Exhaust Emission Standards for Large Spark-Ignition Engines <1 liter (L) (40 CFR part 1054.105(a) Table 1): California ARB** recommends that EPA modify its proposed HC+NOx phase-in schedule for large spark-ignition engines ≤ 1 L to harmonize with the California small off-road engine exhaust emission standards for class II engines, 8 g/kW-hr at 2008 model year. This would provide for significant emission reductions from this category. Furthermore, a harmonized program would help reduce the problem of higher emission 49-state large spark-ignition engines traveling into the California fleet.

EMA commented that total engine displacement should be rounded to the nearest whole cubic centimeter. Accordingly, §1048.615(a)(1) should be revised to read as follows: "The engine must have a total displacement at or below 1000 cc after rounding to the nearest whole cc."

Caterpillar suggested that we make the following changes to the regulations related to natural gas engines:

- Modify 1048.620 to point towards 40CFR60 subsection JJJJ as the optional approach for transportable SI engines. This would allow either factory certification or site compliance testing, account for the varying fuels common to these applications, and still assuring emissions compliance.

- Remove the 250kw cutpoint and include all engines down to 25 hp, as that is where part 90 requirements are in effect for all small SI engines. This will then harmonize with the regulatory strategy in 40CFR60 subsection JJJJ.

- As 1048 already regulates gasoline and rich-burn LPG, this exemption need not apply to these fuels. However, all other fuel types should be included in the exemption. This harmonizes with the approach taken by 40CFR60 subsection JJJJ as well.

Letters:

Commenter	Document #
Impco	0692
ECO	0712
California ARB	0682
EMA	0691
Caterpillar	0814

Our Response:

We agree that the constant-speed transient cycle should be omitted from the regulation, as described in the proposed rule. We may pursue a more appropriate constant-speed transient duty cycle in a future rulemaking.

We agree that simplified AECD descriptions in the application for certification are appropriate, as described in the proposed rule. Manufacturers have the incentive to be thorough in describing their AECDs in the application for certification to avoid a situation where AECDS

are detected outside of the certification process and questions are raised regarding whether the AECD qualifies as a defeat device.

We agree that all the references to pollutants in part 1068 should specifically refer to "and regulated pollutant." We have also changed the regulation at §1048.120 to refer to "any regulated pollutant." The reference in §1048.240 is clearly written in the context of pollutants that are subject to emission standards, so this change is unnecessary. The provisions in §1048.605 and §1048.610 are based on the expectation that the engine is installed in a nonroad piece of equipment without any changes that would affect fuel or air intake, combustion, or aftertreatment. It is therefore not clear that the regulation should specifically limit this provision to regulated pollutants. While we would not normally monitor compliance with respect to nonregulated pollutants, we would be interested in understanding why such an increase might occur.

As noted in the preamble, we are adopting provisions for assigned DFs for Marine SI and Small SI engines for small-volume engine manufacturers and for small-volume engine families. This is intended to address the concern that the costs of generating DFs can be quite large relative to revenues for niche products, even for very large companies. This same dynamic applies for Large SI engines, though to a larger degree. With a 5,000-hour useful life, the cost of generating DFs for an engine family are much greater than for Marine SI or Small SI engines. We agree with ECO's recommendation to adopt a provision allowing for assigned DFs for engine families with annual U.S.-directed production volumes at or below 300 units.

We adopted a temperature profile for diurnal emission testing that is consistent with the approach we take for light-duty vehicles. California's approach for light-duty vehicles is to specify the higher temperatures but specify a test fuel with lower volatility. EPA and California ARB have concluded that these two sets of test parameters yield very similar results. It is unlikely that changing the temperature and test fuel would lead to any design changes for improved control of emissions. We therefore believe it is appropriate to keep our existing regulation intact.

We adopted the diurnal emission standard expecting that most manufacturers would opt for the certification alternative to keep fuel tanks sealed up to 3.5 psi. This effectively achieves complete control for all but the large majority of summer days. For example, a fuel tank filled halfway with 9 RVP fuel would reach a pressure of 3.5 psi if ambient temperatures ranged from 72 to 96°F. We specify evaporative testing using these conditions to represent nearly a worst-case condition. The 3.5 psi specification is also consistent with the industry standard under UL558, so manufacturers have considerable experience in supplying products that comply with this pressure requirement. It is not clear that there would be a significant environmental benefit with higher-pressure fuel caps, or that such caps would be readily available for the full range of equipment that would need them. For manufacturers electing to test their systems to demonstrate compliance with the diurnal emission standard, it is not clear that a more stringent standard is appropriate. We are in the second year of implementing the diurnal emission standards and will be learning from this experience. Canister capacities and purge systems, the most likely alternative design solution, have been used for many years with light-duty vehicles, but there is little information available to show that a more stringent standard is appropriate. We would be

interested in reviewing California ARB's information when it is available. However, it is not clear that the more stringent standard would lead to a meaningfully improved emission controls with in-use engines and equipment.

Production-line testing for Large SI engines relies on CumSum statistical calculations. To be able to make a pass/fail decision for an engine family, two test results are required to initiate calculations related to sample sizes and overall compliance. California ARB intends to limit testing to 1 percent of production, but for production volumes below 150, a one-percent rate in this case translates to a single engine. This was the primary basis for EPA's decision to waive production-line testing requirements for these small families. California ARB may continue to require testing for these engine families, but it is not clear single-engine testing can be reconciled with the need to use CumSum calculations to reach a conclusion.

Emission measurement during transient engine operation is very important for testing an engine's ability to control emissions over a wide range of in-use operation. We believe manufacturers should be able to choose whether to establish a single DF (for a pollutant) based on a comparison of emission measurements using transient operation only, or to generate separate DFs for transient and steady-state testing. We agree that it is not appropriate to allow manufacturers to use a DF from steady-state testing to characterize the aging effect for transient emission measurements. Selecting the type of engine operation for service accumulation is very different. We believe a variety of approaches can be used to properly age an engine. The most important parameters to consider are engine load (torque) and exhaust temperatures. It is not apparent that service accumulation based on transient engine operation is an important factor aside from considerations of average engine load and exhaust temperatures.

Manufacturers of engines at or below 1000 cc must meet the emission standards that apply for Class II Small SI engines to be exempt from the more stringent Large SI emission standards. We are including an update to reference the new standards for Small SI engines in part 1054. This provision requires manufacturers to meet the currently applicable phase of standards, so no further regulatory change will be necessary if or when we adopt an additional phase of standards for Class II engines.

We agree that §1048.615 should continue to apply for engines at or below 1000 cc (not 1000.0 cc), consistent with the original regulation.

The Clean Air Act requires that nonroad engines be certified before they are introduced into U.S. commerce. We are therefore unable to modify §1048.620 to make certification optional, as suggested by Caterpillar. This requirement does not apply to stationary engines. We may consider in a future rulemaking to specify the emission standards in part 60, subpart JJJJ, as being sufficient for certifying engines under §1048.620, but we would need to go through the notice-and-comment process for such an initiative. We established a threshold of 250 kW for these engines to avoid competitive effects where automotive-based natural gas engines would be potentially serving the same markets as the diesel-derived natural gas engines.

1.9 Technical amendments for recreational vehicles (40 CFR part 1051)

1.9.1 Maintenance

What Commenters Said:

MIC commented that 1051.125(d) defines the components specified in 40CFR Part 1068, Appendix I as being items of noncritical emission-related maintenance, but some of these components are also listed as critical emission-related components specified in § 1051.801, which causes mismatch. MIC recommends that the language be changed as follows: "...any other emission-related maintenance on the components other than critical emission-related components." While spark plugs are noncritical emission related components, the maintenance and inspection of them can be critical emission related maintenance. Manufacturers would like to have the ability to inspect and clean them during service accumulation on the emission-data vehicles. Federal Register Vol. 67, No. 217, pg. 68321 C.2 indicates that the EPA may allow changing spark plugs even though they are aware that spark plugs may affect emissions.

Letters:

Commenter	Document #
MIC	0701

Our Response:

We have revised §1051.125 to clarify the relationship between critical and noncritical emission-related maintenance.

1.9.2 Test procedures

What Commenters Said:

ISMA understands that raw gas sampling is permanently allowed for snowmobiles under the provisions of 40 CFR Part 1065. However, they note that calculation procedures similar to the fuel flow method in 40 CFR Part 90.419(c) and 40 CFR 91.419(c) for converting the raw gas sampling measurements into g/kW-hr emission levels are not explicitly provided in Part 1065. The fuel flow method is commonly used by the snowmobile manufacturers under the interim provision of 1051.145(e)(1), which allow use of the raw sampling procedures from parts 90 or 91 through the 2009 model year. 40 CFR 1065.601(c)(1) is intended to implicitly allow a functionally equivalent fuel-flow calculation method, based on reference to the ISO 8178 standards. The indirect allowance of 40 CFR 1065.601(c)(1) and the fact that the ISO 8178 standards are not freely available in the public domain have caused considerable uncertainty for the snowmobile manufacturers regarding the available raw-gas sampling options beyond model year 2009. The manufacturers note that the direct final rule for ATV's published in the Federal Register on April 26, 2007 extends the use of the raw gas sampling methods in 40 CFR part 90 or part 91 through the 2014 model year for ATV's. Since all of the ISMA members are ATV

manufacturers familiar with these established methods, and since ATV manufacturers are allowed to continue using these methods for ATV's, ISMA proposes that EPA also extend the use of the raw sampling procedures in parts 90 or 91 through the 2014 model year for snowmobiles. This would provide the Agency with the time to codify more explicitly in Part 1065 the fuel flow method allowance that we understand is embodied in ISO 8178. It would also allow the ISMA member companies to use just one method for all of their raw gas sampling during the remaining time period that engine-based testing is permitted for ATV's.

Letters:

Commenter	Document #
ISMA	0671

Our Response:

We agree that an allowance for continued use of raw sampling procedures under part 90 or 91 is appropriate. As an interim measure, we are revising the regulation to allow this for demonstrating compliance with the Phase 1 and Phase 2 standards. We intend to revisit this question as part of the effort to revise the Phase 3 standards. We will at that time decide when manufacturers would appropriately be subject to testing requirements under part 1065.

1.9.3 Determining maximum engine power and displacement

What Commenters Said:

MIC commented that §1051.140 is a new section describing how to determine an engine's maximum power and displacement. This section references the 40 CFR part 1065 mapping procedures to determine maximum power. Those procedures require test equipment that can measure engine power during transient conditions as engine speed is changing. Compliance with the proposed new requirement involves significant equipment costs that do not contribute to greater emissions control. MIC therefore recommends that SAE J1349 be allowed as an alternative method for measuring maximum engine power. In calculating displacement, the proposed language requires "using enough significant figures allow determination of the displacement to the nearest 0.1 cc" while also stating that "An engine configuration's displacement is the intended swept volume of the engine rounded to the nearest 0.5 cubic centimeter". The standards applicable to ATVs are defined based whether the engine size is less than 225 cc or equal to or greater than 225 cc. It would therefore be more consistent to specify that the swept volume should be rounded to the nearest cc, rather than the nearest 0.1 cc. There is also an error in the example calculation incorporated in the proposed section. The correct displacement for the example values used is 176.7 cc, not 176.5.

Letters:

Commenter	Document #
MIC	0701

Our Response:

Manufacturers depend on the proper value of maximum engine power to calculate emission credits for averaging, banking, and trading. Manufacturers also need to determine maximum engine power to establish whether an offroad utility vehicle is above or below 30 kW. It is important to use an objective criterion to establish maximum engine power to ensure that manufacturers don't use available discretion (as under SAE J1349) to manipulate credit calculations or change the standards that apply for their products. It is also important to ensure that different programs use the same metric to establish whether standards apply to avoid overlap or gaps between programs. Maximum engine power is fundamentally a design value and does not necessarily require testing. The reference to the mapping procedures clarifies which design value is appropriate. We also specify that the nominal value for maximum engine power must fall within the range of values from production engines. This testing is not required, but it allows us to verify that the declared value is appropriate, especially for preventing manufacturers from gaining an advantage by declaring a value for maximum engine power that does not represent production engines.

We agree that the regulation specifies displacement values (such as 225 cc) only to the nearest cubic centimeter. We have therefore revised the regulation to require manufacturers to report displacement values to the nearest centimeter. However, to ensure that these reported values are accurate, we are keeping the requirement to use methods that allow for determining the displacement to the nearest 0.1 cc before rounding.

The comment pointing out an error in the calculation underscores the need for an example to illustrate the regulatory provision. The example calculation is correct, though the question is moot because of the change in precision described above.

1.9.4 Deterioration factors

What Commenters Said:

MIC commented that 1051.243(b)(6) says "You may use other testing methods to determine deterioration factors, consistent with good engineering judgment, as long as we approve those methods in advance." MIC's concern with this language is that resource constraints at EPA sometimes preclude detailed consideration of alternative testing methods even when they have been developed using "good engineering judgment." To address this practical concern, this subsection needs to be revised to read, "You may use other testing methods to determine deterioration factors, consistent with good engineering judgment, unless we provide an engineering analysis within 30 days demonstrating that the proposed method is not acceptable."

Letters:

Commenter	Document #
MIC	0701

Our Response:

We understand that there may be good reasons to modify plans for generating DFs for a given engine family. At the same time, evaluating such changes often involves more than a simple assessment. We are especially sensitive to the need for review of such requests based on many recent experiences with companies trying to exploit every possible angle to reduce the burden associated with certification, with no apparent regard to the environmental impact of these decisions. While an expedited response would clearly be of interest for manufacturers in many cases, but we believe it would be a good policy—or even in the manufacturer's best long-term interest—in setting a deadline for EPA's response. For example, if we would discover after 30 days that there is a problem with the manufacturers plan, there would need for further testing, either for extended service accumulation for a given emission-data vehicleor for restarting the durability testing altogether. If the EPA approval step is unacceptable, the only viable option is to remove the provision for alternative DF demonstrations.

1.9.5 Other issues

What Commenters Said:

ISMA commented recognizing the litigation that impacted on Phase 3 of the US EPA Rule for snowmobiles, they believe the published standard for Phase 3 in 1051.103 may be appropriately designated as "reserved" status.

ISMA commented that they do not support the proposed change in 1051.205(t). Production volumes are based on market analysis and behavior. These volumes can shift significantly from year to year from circumstances outside of a manufacturer's control. It is inappropriate for EPA to require a "justification" for a change in estimated production volumes from year to year.

ISMA does not support the recommended change in 1051.250 (a). Clearly this should not apply to corporate averaging engines which are already required to file two separate reports throughout the year. The snowmobile manufacturers provide actual production number on a quarterly basis in their PLT reports. In addition, manufacturers are required to provide final production volumes in their corporate average report. ISMA recommends EPA exempt manufacturers not using small-volume compliance provisions from this requirement.

ISMA does not support the recommended change to 1051.310 (b)(3). ISMA agrees with EPA it is appropriate for carry-over engine families to combine the last PLT test result from the previous model year with the first PLT test result from the current model year to determine the number of PLT tests required. However, EPA has proposed to add two sentences to 1051.310 (b)(3) which serve no purpose except to increase the test burden on a manufacturer, "Use the last test result from the previous model year only for this first calculation. For all subsequent calculations, use only results from the current model year. ISMA requests the last two sentences from this paragraph be deleted.

MIC and ISMA commented that it does not appear that the proposed deletion of the reference to "vehicle" testing from section 1051.315 is appropriate because some engine families are certified based on vehicle testing.

ISMA question why in 1051.350 the limit for keeping files has been switched from 1 year to 8 years. Also, additional definition is needed regarding the specific records being referenced.

MIC commented that proposed changes to 1051.350 increase the requirement for retaining paper records from 1 year to 8 years. If the retention period is going to be extended such a large amount then the requirement for "paper" records should be replaced with "paper or electronic" records.

MIC commented that the explanation for proposed changes to §1051.701 includes the statement that "We are also clarifying that a single family may not generate emission credits for one pollutant while using emission credits for another pollutant, which is common to all our emission control programs." However, the proposed requirement is not common (e.g., this issue was specifically addressed for snowmobiles during the recent rulemaking and EPA agreed that credits for one pollutant could be used by a family generating credits for another pollutant. This proposed change needs to be deleted.

ISMA commented that in 1051.801 EPA proposes to amend 40 C.F.R. § 1051.801 to redefine the term "designated compliance officer," in such a way as to treat snowmobiles differently than all other types of vehicles regulated under 40 C.F.R. part 1051 (i.e., off-highway motorcycles, ATVs, and certain utility vehicles and other types of motorcycles). Specifically, snowmobile issues would be handled by the Manager of the Heavy-Duty and Nonroad Engine Group in Washington, D.C., while all other part 1051-regulated vehicle issues would be handled by the Manager, Light-Duty Engine Group in Ann Arbor, Michigan. ISMA opposes this amendment and notes that EPA nowhere explains this proposal in the preamble to the proposed rule, and at the very least must do so in the preamble to the final rule. ISMA's members are entitled to expect EPA to minimize and not proliferate administrative compliance costs, and to that end should face a compliance approach that is designed to partner with manufacturers to pragmatically solve day-to-day issues arising from applying the part 1051 regulations. The Section 1051.801 proposal is not pragmatic. ISMA can see no rational basis on which EPA could cleave off compliance activities for snowmobiles from compliance activities for other types of vehicles regulated under part 1051. Thus, ISMA does not know how EPA could justify requiring companies that already face significant administrative compliance costs to duplicate their efforts across disparate parts of the Agency. This is particularly apparent to ISMA because each of ISMA's members manufacture both snowmobiles and ATVs. In general, it makes little sense to have different compliance officers interpreting and applying part 1051. Moreover, such a questionable organizational change fragments, and renders inefficient EPA's own operations, and it imposes added administrative compliance costs on manufacturers of products that arbitrarily must deal with one set of officials for one set of vehicles, and another for another set of vehicles, even though both types of vehicles are regulated by precisely the same part 1051 regulations. It makes sense to position the compliance officer for all vehicles regulated under part 1051 at the location that currently serves the greatest number of vehicles.

MIC commented that having a unique Designated Compliance Officer for snowmobiles would require companies that manufacture other types of vehicles to deal with two different offices on very similar, if not identical issues. For efficiency and consistency, it would be preferable to have snowmobile issues handled by the Ann Arbor office.

MIC commented regarding 1051.730. The intent of this subsection would be clarified if the term "sales weighted" is replaced with "U.S.-directed production weighted" instead of simply "production weighted."

Robin America requested the following change to the Part 1051. If an engine manufacturer has general purpose engines approved (exhaust & evap) to either Parts 90 or 1054 they should be able to use these engines in ATV's without having to meet the 1051 exhaust specifications. This will enable engine manufactures to sell general purpose standard spec engine to ATV manufactures without any additional testing on the part of either manufacturer. This change should be stated such that they can use previously approved engine from now until 2015 when the mandatory chassis testing is required.

Sierra Research commented that they heard that EPA was going to state 2010 model year at least for the labeling requirements. Also, they know in the Heavy-Duty world the use of older testing methodologies are allowed for some time while part 1065 requirements are made to lab facilities; will the same be allowed for the Recreational Vehicle category under 1051.140? Will older test data be useable as carry-over once the 1065 testing requirements become applicable?

Letters:

Commenter	Document #
ISMA	0671
MIC	0701
Arctic Cat	0709
Robin America	0743
Sierra Research	0742

Our Response:

There are two issues related to the Phase 3 standards for snowmobiles. First, the court decision stated that we do not have legal authority under the Clean Air Act to set NOx standards for snowmobiles and required that we remove the NOx component from the Phase 3 standards. We have addressed this in a separate rulemaking (72 FR 35946, June 25, 2008). Second, the court required that we provide further clarification and justification for the Phase 3 standards we set. We intend to address this second question in a separate rulemaking well before the Phase 3 standards are scheduled to take effect. We may or may not conclude that the Phase 3 standard needs to change. We therefore believe it is not necessary or appropriate to remove the Phase 3 standard from the regulation at this time.

The current requirement for manufacturers to estimated projected production volumes does not allow us to require realistic estimates. There are provisions in the regulations that depend on realistic projections, so we believe it is necessary for us to specify that these

projections be based on proper assumptions. Records of previous production volumes and an assessment of current market conditions allow companies to plan for ongoing production rates. We would not expect to ask manufacturers to justify projected volumes for every family, but we might ask for more information if the sales projections depart substantially from those of earlier model years, especially where the projection would seem to provide an advantage for the company under the regulations. At the same time, we understand the recreational vehicles are particularly prone to periods of irregular demand, with the resulting variation in year-to-year sales figures for their products. We believe it is appropriate to keep the proposed requirement to use realistic values for projecting sales volumes for the upcoming model year.

We have changed the reporting requirements in §1051.250 to align with the reporting that manufacturers already do for production-line testing and credit reports. Specifically, we are requiring that manufacturers report their production volumes to the extent that those figures are not already included in these other reports. This is merely intended to complete the reporting requirement for cases where there are vehicles produced after PLT reports are complete (or if there is no production-line testing required for the family) or in cases where the manufacturer is not participating in the emission-credit program.

The changed language in §1051.310 (b)(3) will not increase manufacturers' test burden. The use of the test result from the previous model year is necessary in the first quarter of the new year is necessary to avoid an automatic second test in the first quarter. In the second quarter, the result from the first quarter can be combined with the new result from the second quarter to make the required CumSum calculations. There is therefore no longer any need to consider the result from the previous model year in the calculations for the current model year. The new language is intended merely to clarify the existing requirements, so we expect no additional test burden. We are adopting the new language as proposed.

We agree that the term "vehicle" should be preserved in §1051.315. This change was inadvertent.

We proposed to increase the time frame for keeping records to eight years to allow us to review the validity of the production-line testing throughout the time that these vehicles will be operating. This is consistent with the recordkeeping we require in our other emission control programs. We agree that keeping electronic records is sufficient, as long as the manufacturer can provide a printed copy of these records upon request. Since these records will generally stored electronically, we expect there will be little if any additional effort to keep the records for a longer time. The records that need to be kept are specified in considerable detail in §1051.345.

We agree that the current regulations allow manufacturers to generate emission credits for one pollutant while using emission credits for another pollutant with a given engine family. Disallowing this practice would effectively increase the stringency of the emission standards. We are therefore removing this provision from the final rule. We may revisit this issue for any more stringent standards that we set in future rulemakings.

The role of the Designated Compliance Officer in the regulations is simply intended to provide a point of contact for submitting information and requesting approvals. The regulation is

not intended to dictate Agency decisions related to work flow or decision-making relative to internal organizational structures. We will be deciding how to manage and implement the certification process for recreational vehicles independent of the description and address noted in the definition of "Designated Compliance Officer" in §1051.801. Nevertheless, to reflect the fact that two of the three types of recreational vehicles are handled out of the Ann Arbor office, we are revising the regulation to specify that as the default location for the Designated Compliance Officer.

We agree that §1051.730 should use the defined term "U.S.-directed production volume".

We understand Robin America's interest in using certified Small SI engines for all-terrain vehicles (ATVs). We believe that conventional ATVs (straddle seat, handlebars, etc.) should be certified under part 1051 since those products are generally well established, high-volume products. It would not be appropriate to accommodate the interest in simplifying the certification process for these products. In contrast, the ATV definition also captures other rough-terrain vehicles that in many cases are low-volume niche products. We believe these vehicles can many times benefit appropriately from using certified Small SI engines based on the fact that these products are not as well established as high-volume recreational products. We are therefore adopting this allowance for these ATVs through the 2014 model year. Starting in 2015, manufacturers must certify their vehicles based on a chassis test, after which the ATV emission standards will be inherently different than the Small SI standard, as acknowledged by Robin America in its comment.

The regulations in part 1065 specifically state that manufacturers may delay complying with amended requirements for up to twelve months after those changes become effective. Many of the changes we are making to the regulations do not impose new requirements, but rather add flexibility or clarify existing requirements. The provision to delay complying with amended requirements allows for a more gradual transition when a regulatory change indeed imposes a new or different requirement. We are adding a similar provision in §1068.40 that would allow for delayed compliance with technical amendments in part 1068 or in the standard-setting part. Regarding the date of manufacture on engine labels, we are specifically stating that the new requirement does not apply until the 2010 model year.

1.10 Technical amendments for heavy-duty highway engines (40 CFR parts 85 and 86)

What Commenters Said:

EMA recommended that we delay the requirement to use the procedures in part 1065 until July 2010. To prevent this from impacting the stringency of the standards, they recommended specifically excluding certain provisions from the delay. They recommened that the regulations specify the following provisions from part 1065:

(1) Generate a map of your engine according to 40 CFR 1065.510(b)(5)(ii) and generate test cycles according to 40 CFR 1065.610. Validate your cycle according to 40 CFR 1065.514.

(2) Follow the provisions of 40 CFR 1065.342 to verify the performance of any sample dryers in your system. Correct your measurements according to 40 CFR 1065.659,

except use the value of Kw in §1342-90(i) as the value of (1-xH2Oexh) in Equation 1065.659-1.
(3) Verify your NO2-to-NO converter according to 40 CFR 1065.378.
(4) For diesel engine testing, correct NOx emissions for intake-air humidity according to 40 CFR 1065.670.
(5) You must comply with the provisions related to analyzer range and drift in 40 CFR 1065.550. If drift correction is required, correct your measurements according to 40 CFR 1065.672, but use the emission calculations specified in this subpart N rather than those specified in 40 CFR 1065.650.
(6) You must comply with 40 CFR 1065.125, 1065.127, and 1065.130, except for references to 40 CFR 1065.530(a)(1)(i), 1065.640, and 1065.655.
(7) Follow the provisions of 40 CFR 1065.370 to verify the performance of your CLD analyzer with respect to CO2 and H2O quench. You are not required to follow 40 CFR 1065.145(d)(2), 1065.248, or 1065.750, which are referenced in 40 CFR 1065.370.

Letters:

Commenter	Document #
EMA	0768

Our Response:

We agree with the manufacturers' comment and have revised the regulation accordingly.

1.11 Technical amendments for stationary engines (40 CFR part 60)

What Commenters Said:

EMA commented that Small SI engines generally are considered mobile due to their small size and relatively light weight. However, there are engines that meet the definition of Small SI yet, in fact, are utilized in stationary product applications. The EPA New Source Performance Standard (NSPS) for spark-ignition engines correctly requires such Small SI engines to meet the same emission requirements as their mobile counterparts. There are many cases where a Small SI engine that is certified, produced, and labeled as a mobile engine will actually be utilized in a stationary application. This industry practice must be maintained, and should not be adversely affected by the imposition of unnecessary labeling requirements that provide no environmental benefit. The final regulation should clarify that engines that are labeled as compliant with nonroad standards may be utilized in stationary sources without alteration, or additional labeling requirements.

EMA also stated that Small SI engine manufacturers do not have the ability to determine if an engine family may contain models that are subsequently utilized in a stationary application. As the proposed requirements for stationary and nonroad engines are intended to be identical, this differentiation is not significant. Accordingly, §90.107(d)(13) should be deleted.

Exergy commented that it is their understanding the proposed rule does not apply to engines for stationary power generation and/or shaft driven equipment using natural gas and/or propane. If EPA's proposed rule does apply, is there an exemption for stoichiometric and/or lean burn 19 kW continuous duty or long duty-cycle (greater than 1,000 hours per year) engines for stationary power generation and/or shaft driven equipment using natural gas and/or propane?

EMA suggested that we add clarifying language to §1068.31(c) to specify that the 12-month limit does not apply for fixed engines (i.e., neither portable nor transportable).

Cummins raised question about how to apply the definition of "nonroad engine" for engines that are installed in a fixed location. Aside from clarifying whether the requirement for such an engine to operate for at least 12 months to be considered stationary, they suggested adding regulatory language that would:

- Allow certain engines to be considered 'stationary' even if not at a given site for more that 12 months. Aside from the seasonal engine provision, this should include engines in natural gas production that are connected to the fixed fuel supply but that might need to move early due to lack of production. (Note that these engines are typically mounted in a frame/skid with compressing equipment, radiator, etc, and typically sit on a prepared dirt site.)
- NOT allow other engines connected to a fixed fuel supply for less than 12 months to be considered 'stationary'. An example recently discussed would be an SI genset mounted in a trailer on wheels. Such a unit ought to be able to connect to a fixed, natural gas fuel source for, say, three months without being considered stationary.

Because of the need to have engines in different applications, attached to a fixed fuel supply for a short period of time, to be treated differently, perhaps this would be better addressed by 'intent'. In the first example above, the intent would be for the unit to operate more than 12 months in the given location. In the second example, the intent would be to operate less than 12 months. The first example ought to be a stationary situation; the second example ought to be nonroad. Cummins did not recommend specific language to accomplish this, but suggested the following adjustment to paragraph (2)(iii) of the nonroad engine definition:

"An IC engine is not a nonroad engine if it meets any of the following criteria: ... (iii) The engine otherwise included in paragraph (1)(iii) of this definition remains, or will remain, or is intended to remain at a location for more than 12 consecutive months..." [emphasis added]

In response to draft language for §1068.31(c) to clarify the status of stationary engines that are neither portable nor transportable, Caterpillar suggested revised wording to make clear that the residence-time restrictions are the subject of the sentence, not the definition of a nonroad engine. The initial language was:

"Note that the definition of 'nonroad engine' in §1068.30 generally does not apply the residence-time restriction to engines that are neither portable nor transportable in actual use."

The suggested revision was:

"For engines that are neither portable nor transportable in actual use, residence time restrictions generally do not apply to the definition of a non-road engine in 1068.30."

Letters:

Commenter	Document #
EMA	0691
Impco	0692
Exergy	0627
Cummins	0785
Caterpillar	0822
EMA	0808

Our Response:

The regulation setting standards for stationary SI engines below 19 kW recognizes the points raised by EMA about the interchangeability of nonroad and stationary engines in this size range. The regulation specifies a single label for engines below 19 kW whether they will be used in nonroad applications, stationary applications, or both. It is important to note, however, that state and local governments are not preempted from setting standards for stationary engines, even if the engines are already certified to meet EPA's nonroad standards.

While the requirements for stationary and nonroad engines are identical, we may approve certain procedures separately for one or the other of these applications. We would expect only that the manufacturer would make a good-faith indication of how its engines might be used. There would be no violation if that expectation turns out not to be true in a way that could not have been predicted ahead of time.

It is not clear how Exergy could have thought that the proposed standards in part 1054 do not apply to stationary engines, since we stated clearly in the preamble and in the regulations that the standards apply equally to stationary and nonroad engines below 19 kW. There is no exemption available for any of the engine types or applications noted by Exergy.

The definition of "nonroad engine" applies residence-time requirements to portable and transportable engines to ensure that they are considered stationary only if they remain in one location for an established duration. Fixed engines (lacking the features that would make them portable or transportable) are inherently stationary, so the residence-time requirements do not apply to them. We would expect such engines to remain in one location for longer than the times we specify for portable engines, but it would not be a violation to move an engine before the specified period was complete. We agree that it is appropriate to add the clarifying language in §1068.31 to state that "for engines that are neither portable nor transportable in actual use, the residence-time restrictions in the definition of "nonroad engine" generally do not apply." Cummins' suggestion to rely on intent to determine whether an engine is stationary or not is unworkable. This would effectively make it impossible to hold someone responsible for moving an engine more frequently (or sooner) than is allowed under the regulation.

We have no objection to Caterpillar's suggested adjustment to the language in §1068.30(c) and have modified the regulation accordingly.

1.12 Technical amendments for nonroad diesel engines (40 CFR parts 89, 92, 94, 1033, 1039, and 1042)

What Commenters Said:

General Electric suggested that we modify the regulation in part 1033 to allow varying dilution ratios for different test modes.

Letters:

Commenter	Document #
General Electric	0786

Our Response:

We agree that it would be appropriate to address very small PM sample rates either by extending the sampling time or by adjusting dilution ratios, consistent with good engineering judgment. The original requirement in §1068.515 specified only the extended sampling time, but we believe the varying dilution ratios can be equally effective in making an accurate measurement.

1.13 Benefit calculations for ozone mortality

What Commenters Said:

Environmental Defense commented regarding EPA's Omission of Ozone Health Benefits is Arbitrary and Capricious and Contrary to Law. The harmful effects of ozone on human health and the environment are well documented. Indeed, the body of science linking ozone with premature mortality is one of the most significant developments in the last decade. The current proposed rule, if implemented, will greatly reduce emissions of ozone-precursors thereby achieving significant ozone-related health benefits. In light of the robust health benefits of this proposal Environmental Defense objects to EPA's failure to quantify any ozone benefits, including ozone-mortality. In its initial draft impact analysis, EPA estimated that by 2030 the proposed spark-ignition engine standards would result in the reduction of 631,000 tons of volatile organic hydrocarbon and 98,200 tons of oxides of nitrogen emissions. EPA projected that these reductions will likely correspond to significant reductions in the formation of ground-level ozone and would prevent between 60 and 360 ozone-related premature deaths, 800 hospitalizations, and almost 50,000 work days lost. EPA estimated the total benefits of this proposed rule range between $3.9 billion and $6.1 billion annually. However, EPA ultimately deleted all references to the above-listed quantified ozone benefits in response to pointed comments by the White House Office of Management and Budget. In the final Draft Regulatory Impact Analysis, EPA admits that it "typically quantifies ozone-related health impacts in its regulatory impact analyses when possible" and that "[I]n the analysis of past air quality regulations, ozone-related benefits have included morbidity endpoints and welfare effects such as damage to commercial crops." Nevertheless, EPA states that it is deviating from its "typical" practice due to a lack of conclusive scientific information as to how to quantify the benefits of

ozone-related mortality. Furthermore, in order not to "provide an incomplete picture of all of the benefits associated with reductions in emissions of ozone precursors," EPA declined to quantify other health and welfare benefits.

Environmental Defense strongly disagrees with the assumption that there is insufficient information to include a valuation of mortality benefit. They also strongly object to EPA's failure to quantify any ozone benefits, such as crop damage, lost work days or hospitalizations. Environmental Defense believes that EPA's failure to consider the ozone mortality and nonmortality benefits associated with the proposed rules is arbitrary, capricious and contrary to law. See State Farm, 462 U.S. 29, 43 (finding agency failure to consider "an important aspect of the problem" arbitrary and capricious). Indeed, consideration of the full benefits of the emission reductions at stake only underscores the imperative of the Agency adhering to its statutory mandate under section 213 of the CAA to immediately take final action adopting emission standards that reflect the "greatest degree of emission reduction achievable" and "take effect at the earliest possible date."

Letters:

Commenter	Document #
Environmental Defense	0648

Our Response:

Though omitted in the proposal for this rulemaking, EPA agrees that there is sufficient evidence to include a valuation of the mortality benefit. We therefore quantify and monetize the ozone-related health impacts associated with the final rule, including both mortality and non-mortality impacts. This reflects EPA's most current understanding of the science surrounding ozone impacts on human health and welfare, consistent with the recent ozone criteria document, the analysis of the final ozone NAAQS, and the recently published report (April, 2008) by the National Research Council titled, "Estimating Mortality Risk Reduction and Economic Benefits from Controlling Ozone Air Pollution."

1.14 Air quality analysis

What Commenters Said:

NACAA commented that state and local clean air agencies across the country are facing the enormous challenge of developing strategies to achieve and maintain the health-based National Ambient Air Quality Standards (NAAQS) for ozone and fine particulate matter ($PM_{2.5}$). Air quality in approximately 120 areas of the nation currently violates the 8-hour ozone standard, the $PM_{2.5}$ standard or both, exposing more than 150 million people to unhealthful levels of air pollution. Clearly, considerable efforts by EPA, states and localities will be needed to reduce the widespread health and environmental impacts associated with emissions from contributing sources. In addition, EPA has already taken action to tighten the $PM_{2.5}$ NAAQS and recently proposed similar action on the ozone standard, which will increase the challenges facing states

and localities. Further, many areas of the country are plagued by unacceptably high levels of toxic air pollution.

NACAA continued to comment that emissions from the nonroad spark-ignition engines covered by this proposal are substantial. Use of lawn and garden equipment totals more than 3 billion hours a year. A gasoline-powered push mower currently emits as much hourly pollution as 11 cars, a riding mower as much as 34 cars. Recreational watercraft can emit as much hourly as 348 cars. The resulting emissions contribute to unhealthful concentrations of $PM_{2.5}$, ozone, CO and toxic air pollutants, which translate into serious adverse health impacts, including premature death, heart disease, aggravated asthma and other respiratory conditions, as well as a host of environmental harms, such as visibility impairment and acid rain.

NACAA commented, as EPA appropriately acknowledges, absent action to reduce emissions, by 2020 these engines will contribute more than one quarter (1,352,000 tons) of mobile source volatile organic compound (VOC) emissions, nearly a third (16,374,000 tons) of mobile source CO, 16 percent (39,000 tons) of mobile source $PM_{2.5}$ and 4 percent (202,000 tons) of mobile source NOx. However, the agency's proposal, by 2030, will reduce annual emissions from affected sources by an estimated 630,000 tons of VOCs, 2.7 million tons of CO, 98,000 tons of NOx and 6,300 tons of direct $PM_{2.5}$. Among the quantifiable benefits that would, in turn, occur from these reductions is the prevention, annually, of an estimated 450 PM-related premature deaths, 500 hospitalizations and 52,000 lost work days. The total annual benefits in 2030 are estimated at $3.4 billion versus $240 million in annual costs.

NJ DEP commented that advancing the federal implementation dates would provide more timely air quality and health benefits to the residents of New Jersey. Ozone continues to be one of the most pervasive air quality problems in New Jersey. The 2002 New Jersey Emissions Inventory indicates that approximately 14% of the volatile organic compounds (VOCs) are from spark-ignited nonroad engines and equipment rated at 25 horsepower or less. On June 15, 2007, New Jersey submitted its proposed State Implementation Plan for the attainment of the 8-hour ozone National Ambient Air Quality Standard (NAAQS). It was an enormous challenge to develop strategies to reduce ozone in order to meet the 8-hour ozone NAAQS. When the USEPA revises the 8-hour ozone standard to be more protective of human health, New Jersey will face greater challenges to develop strategies to reduce ozone. Aligning the federal implementation dates more closely to the California ARB implementation dates will assist New Jersey in meeting these challenges.

South Coast AQMD commented on the South Coast Air Basin Air Quality Setting. As EPA is aware, the South Coast Air Basin (Basin) is designated nonattainment for the federal annual PM2.5 and 8-hour ozone ambient air quality standards and must attain these standards by 2015 and 2024, respectively. To achieve these deadlines, attainment must be demonstrated in the preceding years, e.g. 2014 for $PM_{2.5}$. Compared to the nation's other nonattainment areas, the South Coast Air Basin has the highest population-weighted ozone exposure of any area, representing 24 percent of the nation's 8-hour ozone exposure as well as its highest ozone design value. Almost 90 percent of the nation's total population-weighted exposure to fine particulates occurs in California. In addition, 52 percent of the nation's total exposure to fine particulates occurs in the South Coast Air Basin alone.

SCAQMD continued that these pollutant exposures result in severe public health impacts in the South Coast Air Basin. Numerous studies – conducted locally, nationally and internationally – confirm that ozone and particulate pollution have a direct impact on respiratory health, increasing asthma attacks, bronchitis, emphysema, chronic obstructive pulmonary disease, lung cancer and premature death. For example, studies in Southern California have found a significant risk of irreversible decline in lung function among children growing up in areas with relatively high particulate pollution. In addition, California ARB has estimated that particulate pollution in the Basin causes 5,400 premature deaths, 2,400 hospital admissions, 140,000 asthma and respiratory symptoms, 980,000 lost workdays, and 5 million restricted activity days for minors, every year.

SCAQMD commented that the region is moving ahead with efforts to attain the federal 8-hour ozone and annual $PM_{2.5}$ standards with the recent adoption of the 2007 Air Quality Management Plan (AQMP) for the South Coast Air Basin. The attainment challenges are significant given that stationary sources are now generally controlled to over 90 percent, and about 80 percent of the emissions in the Basin are caused by mobile sources. The attainment demonstrations provided in the 2007 AQMP show that the Basin cannot timely attain federal air quality standards without significant emission reductions from all sources, including nonroad spark-ignited engines. By 2023, pleasure craft will be the third highest VOC emission source category in the Basin (about 35 tpd) surpassing passenger cars, petroleum marketing, and architectural coating categories. To address this need, as part of the proposed state strategy for the California State Implementation Plan, California ARB is proposing new standards for outboard/personal watercraft to be implemented in 2013 that will reduce exhaust emissions of NOx and VOC by close to 70%. The 2007 AQMP also includes an additional control strategy that calls for accelerated turnover of outboard and personal watercraft engines to engines meeting the most stringent existing California standards as well as more stringent standards adopted in the 2014 timeframe for inboard and stern drive marine engines in order to achieve reductions. Achieving the maximum amount of emission reductions from nonroad spark-ignited engines is critical to the South Coast Air Basin for meeting the federal 8-hr ozone and annual $PM_{2.5}$ standards.

NY DEC commented that the ozone forming emissions of the engines targeted by this proposal are significant, and occur primarily in the summer ozone season. As EPA notes in Section XII-A of the Preamble, recreational marine and small land spark-ignition engines account for over a quarter of the national mobile source VOC inventory. The contribution of these emissions to ground level ozone formation is even greater because most of the use of these engines occurs during the summer ozone season, when most water-borne recreation, lawn and landscape maintenance, and outdoor construction takes place. Marine recreation, and the associated emissions are also concentrated geographically in areas with suitable waterways. Thus the fraction of the national inventory comprised of emissions from these engines likely understates their impact on ozone levels and National Ambient Air Quality Standard violations. There is clearly a need for the standards proposed by EPA.

Pennsylvania DEP commented that small land-based, spark-ignition engines and equipment and marine spark-ignition engines and vessels contribute significantly to the

precursors of ground level ozone. At the existing emissions rates, these engines and equipment are expected to contribute as much as 10 to 15 percent of all the volatile organic emissions in 2009 in the 37 counties in Pennsylvania that are currently designated by EPA as eight-hour ozone nonattainment areas. As Pennsylvania and other states face the challenges in attaining and maintaining the existing and anticipated more protective ozone National Ambient Air Quality Standards and the fine particulate standards, EPA must move forward expeditiously with its full complement of controls on new mobile source engines. The projected emission reductions and health benefits anticipated by 2030 under this proposal are significant (631,000 tons of volatile organic hydrocarbon emissions, 98,200 tons of Nitrogen Oxides emissions, and 6,300 tons of direct particulate matter PM2.5 emissions, and 2.69 million tens of carbon monoxide emissions) and should, therefore, be achieved expeditiously.

Houston-Galveston Area Council commented that the Houston-Galveston-Brazoria (HGB) region is currently classified as a non-attainment area for the 8-hour ozone National Ambient Air Quality Standard (NAAQS). It should be noted that in a letter dated June 15, 2007, Texas Governor Rick Perry requested that the HGB region be reclassified as severe nonattainment for the 8-hour ozone NAAQS. Additionally, this region is very close to exceeding the $PM_{2.5}$ standard and has elevated levels of air toxics in localized areas. These air quality issues result in negative economic impacts, ecosystem damage, negative health effects, and a reduction in the quality of life in the HGB area. The unique industrial characteristics of the region combined with being one of the largest urbanized population centers in the nation present a particularly difficult challenge in terms of improving air quality. Though efforts to improve air quality have yielded some progress over the past decade, it is clear that much more needs to be done. The active support and participation of the federal government has been vital to air quality improvement efforts; however more than half of the ozone-forming pollution in this region is generated by mobile sources. Regulation of the emissions from mobile sources is outside the authority of individual states such as Texas.

Environmental Defense commented that it is well documented that, despite their size, spark-ignition ("SI") marine and small engines contribute significantly to the formation of ozone and other harmful air pollutants. EPA estimates that absent the implementation of these proposed rules, the emissions from spark-ignition marine and small engines will account for 27% of volatile organic hydrocarbon compounds (1,352,000 tons), 31% of carbon monoxide (16,374,000 tons), 4% of oxides of nitrogen (202,000 tons) and 16% of particulate matter (39,000 tons) from the mobile source sector by 2020.

Environmental Defense continued to comment that spark-ignition marine and small engines contribute to unhealthy air pollution concentrations of ozone, carbon monoxide (CO) and PM in numerous areas nationwide. The air pollutants emitted by these engines are associated with a host of adverse public health effects including acute respiratory problems, asthma, aggravation of cardiovascular conditions and decreased lung function. Acute exposure to CO can cause death and non-fatal poisoning. Gaseous vapors that escape from the fuel lines and tanks during gas refueling and accidental spills cause and contribute to carcinogenic and non-carcinogenic health problems. Exposure to ozone and particulate matter can cause premature death. The immediate final promulgation and implementation of EPA's proposal will help to ensure cleaner air and improved health for millions of Americans.

Environmental Defense commented on the following four pollutants:

A. Ozone

The SI small and marine engines subject to this proposal consist primarily of lawn and garden equipment and recreational boats utilized mostly during the hot summer months. As a result, the emissions from these engines play a particularly significant role in the formation of ground-level ozone. Ozone is formed by the combination of HC and NOx in the presence of heat and light. According to EPA, spark-ignition marine and small engines not only produce about one fourth the amount of smog forming HC as all of the cars on the road today but their emissions are concentrated during conditions especially conducive to ozone formation. California officials report that, on a gallon for gallon basis, these engines discharge 93 times more smog forming emissions than model year 2006 cars.

Approximately 157 million people are exposed to levels of ozone or "smog" that exceed the current national health-based standard. Ozone causes acute respiratory problems, asthma, reduced lung function and increased hospital admissions. Children and the elderly are most at risk. Recently, a federal advisory panel recommended EPA tighten the existing 8-hour ozone health standard due to mounting evidence that it fails to protect adequately human health. Scientific studies from the United States and Europe link short term increases in ozone levels to increased rates of death from respiratory and cardiovascular disease. Day-to-day increases in ozone concentrations during the summer have been linked to an increase in premature death. Final promulgation and implementation of EPA's proposal would aid significantly in preventing ozone-related illnesses, work absences, and deaths.

Recent scientific information also demonstrates the harmful effects of ozone on plants and ecosystems. According to the EPA, ozone impairs crops, native vegetation, and ecosystems "more than any other air pollutant." Indeed, in examining forest productivity and ecosystem diversity, ozone may be the pollutant with the "greatest potential for regional-scale forest impacts." Exposure to ozone weakens plants, making them more susceptible to disease, insects and climatic changes. Changes in the biodiversity of plants and trees can affect entire ecosystems given the central role vegetation and forests play in providing food and habitat for many species of fish, birds and mammals.

B. Particulate matter

Spark-ignition marine and small engines are also significant producers of particulate matter. PM is a mixture of soot, smoke, and tiny particles due to direct PM as well as PM formed in the atmosphere from precursors such as sulfur dioxide, nitrogen oxides, ammonia and other pollutants. Scientific studies have shown a statistically significant relationship between short term exposure to PM from mobile source emissions and mortality. Results from a recent study on the contribution from mobile source emissions of PM in 14 U.S. cities indicates that mobile sources, such as the small and marine nonroad engines affected by this proposal, have a greater effect on the toxicity of ambient air than other sources.

Approximately 88 million people across the country are exposed to unhealthy levels of PM. Another 27 million are likely to live in areas with unhealthy levels of PM if steps are not taken to reduce PM emissions. Exposure to particulate matter can cause acute respiratory symptoms, decreased lung function and increased hospital and emergency room visits. Exposure to PM has also been linked to death from cardiopulmonary disease, premature death, lung cancer and infant mortality. People with heart or lung disease, the elderly, and children are most at risk. The proposed standards, if implemented, would prevent 460 premature deaths, 52,000 days of missed work, 500 hospital admissions, and 310,000 restricted-activity days. They would also greatly assist states and local governments in attaining or maintaining air pollution concentrations below the health-based NAAQS.

Particulate matter also causes a host of adverse environmental effects. PM impairs visibility, both by contributing to local and regional haze. The brown clouds that hang over many urban areas and haze surrounding our national parks and wilderness areas are caused by particulate matter. Reducing the PM emitted from small and marine engines will improve human welfare by helping to reduce these forms of visibility impairment. The SO2 and NOx that can transform in the atmosphere to PM also causes atmospheric deposition and acid rain. Acid rain is primarily responsible for elevated levels of acid in the many fresh-water bodies that dot the U.S. upper- Midwest and Northeast. High acidity in lakes and streams alters the chemical composition of the waters, leading to changes in vegetation, species loss and contamination. Atmospheric deposition occurs when SO2 and NOx deposit into streams, lakes and forest beds. The deposition alters water quality and vegetation and can lead to toxic algae and plankton blooms which can threaten human health and welfare. Immediate implementation of these standards will go a long way in improving human health and welfare and protecting our streams, lakes, forests and their inhabitants.

C. Carbon monoxide

In 1994 EPA determined that the lawn and garden equipment subject to these proposed rules contribute significantly to unhealthy CO concentrations. EPA currently is proposing to make a similar determination with respect to CO emissions from SI marine boats. EPA estimates that approximately 15 million people live in areas with unhealthy levels of CO.

Like exposure to ozone and particulate matter, exposure to CO causes a number of serious health effects. CO reduces the delivery of oxygen to the body's organs and is associated with impairment of visual perception, work capacity, manual dexterity, learning ability and performance of complex tasks. The health threat posed by CO is particularly acute for individuals suffering from cardiovascular disease. CO emissions also contribute to the formation of ground-level ozone. Exposure to acute levels of CO can result in fatal and non-fatal CO poisoning. Between 1984 and 2004 there were 113 reported deaths and 458 non-fatal poisonings caused by exposure to CO. Recreational boaters, inhabitants of house boats, and people swimming around docks are primarily at risk of accidental fatal and non-fatal CO poisoning. A number of federal agencies have issued health advisories to warn recreational boaters of the serious threats posed by exposure to CO. Immediate finalization of the proposed rules will reduce the number of

CO-related deaths and illnesses and help to ensure that people living, working, or recreating around SI marine boats and vessels can do so safely.

D. Toxic Air Pollutants

Gaseous air toxics, such as benzene, 1, 3 butadiene, formaldehyde, acetaldehyde and napthalene, comprise another major category of air pollutants emitted by these small engines. Exposure to the vaporous air toxics emitted from these engines causes carcinogenic and non-carcinogenic health effects. According to EPA's 1999 National-Scale Air Toxics Assessment, all of the air toxics emitted by these small engines, with the sole exception of acetaldehyde, comprise a significant portion of the total inhalation cancer risk from mobile sources. Air toxics also cause a number of other serious noncancer health problems involving the neurological, cardiovascular, liver, kidney, respiratory, immune and reproductive systems.

One of the air toxics emitted by these small engines, benzene, poses a particularly serious threat to human health. Benzene is one of the most significant contributors to cancer risk of all air toxics in the ambient air. Assuming continuous exposure to 1999 levels of all outdoor air toxics, the nationwide lifetime population cancer risk was 42 per million. According to EPA, benzene was responsible for 24% of this cancer risk, and was responsible for 42% of the total inhalation cancer risk from mobile source air toxics. EPA's proposal to require more stringent measures to control the toxic evaporative emissions from these engines is essential in reducing the cancer, and non-carcinogenic, inhalation risk from mobile sources.

Letters:

Commenter	Document #
South Coast AQMD	0704
NJ DEP	0710
NY DEC	0659
Houston-Galveston Area Council	0633
Environmental Defense	0648
NACAA	0651
Pennsylvania DEP	0676

Our Response:

We agree that emissions from small SI and marine SI engines are significant and often occur during the ozone season. The final rule estimates that these engines emit over 2 million tons of volatile organic compounds (VOCs) and almost 170,000 tons of NOx annually, and contribute to adverse health and welfare effects associated with ozone, PM, NOx, VOCs including toxic compounds, and carbon monoxide (CO). Without this rule, emissions from Small SI and Marine SI engines, equipment and vessels would continue to grow and would become a larger percentage of total mobile source emissions. By 2030 this final rule will reduce VOCs by 604,000 tons and NOx by 132,200 tons annually.

This rule will help states to reduce air toxics and meet the health and welfare based National Ambient Air Quality Standards (NAAQS) for ozone, PM and CO. As of March 12, 2008 there are approximately 140 million people living in 72 areas designated as nonattainment with the 1997 8-hour ozone NAAQS. In addition, approximately 88 million people live in areas that are designated as nonattainment for the 1997 $PM_{2.5}$ NAAQS and 850,000 people live in areas that are designated as nonattainment for the CO NAAQS. Both the ozone and $PM_{2.5}$ NAAQS have been amended in the last few years and are now more stringent. States with nonattainment areas are required to take action to bring those areas into compliance in the future. We expect many of the ozone and $PM_{2.5}$ nonattainment areas will need to adopt additional emissions reduction programs to attain and maintain the NAAQS. The emission standards being finalized in this action will become effective between 2009 and 2013 and will be useful to states in both attaining and maintaining the NAAQS. For discussion on the timing of the standards, see Sections 3.2.2, 3.3.2 and 3.4.2

According to air quality modeling performed in conjunction with this rule, the emissions reductions will result in nationwide improvements in ambient ozone concentrations as well as decreases in $PM_{2.5}$ concentrations. By 2030 these reductions will annually prevent 230 PM-related premature deaths (based on the ACS cohort study), between 77 and 350 ozone-related premature deaths (assuming a causal relationship between ozone and mortality), 1,700 hospital admissions and emergency room visits, 23,000 work days lost, and approximately 590,000 minor restricted-activity days.

1.15 Other issues

What Commenters Said:

OPEI noted that substantial evaporative benefits and exhaust emissions benefits will be achieved through the investment of OPEI members to produce Phase 3 compliant products. However, OPEI shares the concerns of state organizations and environmental groups, like the American Lung Associations and Clean Air Watch, that these air quality benefits and related investments could be undermined if EPA approves any new waiver for fuels containing greater that 10% ethanol. OPEI commented that EPA must fulfill its statutory obligations under section 211(f)(4) of the Clean Air Act to carefully review and respond to any waiver for mid-level ethanol fuel blends. The 250 million Americans that own and operate over 400 million lawnmowers, chainsaws, boats, motorcycles, snowmobiles and automobiles are relying on EPA to make sure that neither their products, nor the environment, are damaged through the approval of fuels containing greater that 10% ethanol. OPEI also submitted a technical report to EPA to highlight the expected adverse impacts of mid-level ethanol blends (see docket item EPA-HQ-OAR-2004-0008-0746).

Letters:

Commenter	Document #
OPEI	0675

Our Response:

Although there has been interest expressed by some areas for a mid-level ethanol fuel blend (i.e., containing more than the current 10 percent ethanol blend), EPA has not received an application for a waiver request at this time. Should EPA receive such a request, EPA would fulfill its statutory requirements under the Clean Air Act in responding to the waiver request. It can be noted that the recent Energy Independence and Security Act of 2007, revised section 211(f)(4) of the Clean Air Act. While the basic criteria for analyzing a waiver request stayed the same, the revised language states that EPA must also analyze the impact on nonroad engines and vehicles. In addition, EPA "must take final action to grant or deny an application submitted under this paragraph, after public notice and comment, within 270 days of the receipt of such an application." Prior to the recent change, section 211(f)(4) said the waiver would be treated as being granted if EPA did not act within 180 days.