

August 25, 1999

Ms. Carol M. Browner
Administrator
United States Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

Dear Administrator Browner:

Enclosed for your consideration is the Report of the Small Business Advocacy Review Panel (SBAR Panel or Panel) convened for EPA's rulemaking on proposed Emissions Standards for New Compression-ignition and Spark-ignition Recreational Marine Engines that is currently being developed by the Environmental Protection Agency (EPA).

Section 213(a) of the Clean Air Act (CAA) directs EPA to: (1) conduct a study of emissions from nonroad engines and vehicles; (2) determine whether emissions of carbon monoxide (CO), oxides of nitrogen (NOX), and volatile organic compounds (VOCs, including hydrocarbons (HC)) from nonroad engines and vehicles are significant contributors to ozone or CO in more than one area which has failed to attain the national ambient air quality standards (NAAQS) for ozone or CO; and (3) if nonroad emissions are determined to be significant, set appropriate emissions standards for those categories or classes of new nonroad engines and vehicles determined to cause or contribute to such air pollution.

The Nonroad Engine and Vehicle Emission Study required by section 213(a)(1) was completed in November 1991. The determination of the significance of emissions from nonroad engines and vehicles in more than one NAAQS nonattainment area was published on June 17, 1994. At the same time, the first set of regulations for new land-based nonroad compression-ignition (CI) engines at or above 37 kW was promulgated. These are often referred to as the nonroad Tier 1 standards for large CI engines. EPA has also issued proposed or final rules for other categories of nonroad engines, including spark-ignition¹ (SI) engines less than 19 kW, spark-ignition marine engines (outboards and personal watercraft), land based and marine compression-ignition engines less than 37kW, and locomotives.

¹ Spark-ignition (SI) engines, also known as Otto-cycle engines, use a spark plug to initiate combustion. The vast majority of marine SI engines are gasoline fueled. Compression-ignition (CI) engines, also known as Diesel-cycle engines, use the heat generated from compression of the air in the cylinder to ignite the fuel. The vast majority of marine CI engines are diesel fueled.

On June 7, 1999, EPA's Small Business Advocacy Chairperson (Thomas E. Kelly) convened this Panel under section 609(b) of the Regulatory Flexibility Act (RFA) as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA). In addition to its chairperson, the Panel consists of the Director of the Engine Programs and Compliance Division within EPA's Office of Mobile Sources, the Administrator of the Office of Information and Regulatory Affairs within the Office of Management and Budget (OMB), and the Chief Counsel for Advocacy of the Small Business Administration (SBA).

It is important to note that the Panel's findings and discussion are based on the information available at the time this report was drafted. EPA is continuing to conduct analyses relevant to the proposed rule, and additional information may be developed or obtained during the remainder of the rule development process as well as from public comment on the proposed rule. Any options the Panel identifies for reducing the rule's regulatory impact on small entities may require further analysis and/or data collection to ensure that the options are practicable, enforceable, protective of public health, environmentally sound and consistent with the Clean Air Act.

SMALL ENTITY OUTREACH

A new program establishing standards for recreational marine engines would primarily affect marine engine manufacturers and marinizers. For recreational marine diesel engines, nearly half of manufacturers identified meet the small business definition provided in the SBA regulations (13 CFR Part 121). For gasoline sterndrive/inboard marine engines, almost all of the manufacturers are small businesses under the SBA definition. There are many small boat builders that use these engines; however, it is uncertain at this time whether or not they would be directly regulated under the new program. Because the Agency is still developing the proposal, it was deemed appropriate to consider boat builder flexibilities at this time.

EPA, alone and in conjunction with SBA and OMB, has had several meetings and conversations with small entity representatives (SERs) to discuss the potential engine regulations. About a year before the Panel was convened, EPA held a conference call meeting with a large number of the small engine marinizers and boat builders to discuss small business issues. Four months prior to the convening of the Panel, EPA staff attended an industry trade show where they presented EPA's intent for this proposed rule and met with representatives from each of the attending marinizers. On May 11, 1999, the Panel was invited to a briefing EPA held for the SERs to discuss the Panel process and to learn more about the emissions control program being considered by the Agency. Once the Panel was officially convened, two additional meetings were held on June 29 and July 6, 1999. Summaries of the May 11th, June 29th, and July 6th meetings are contained in the appendices to the Panel Report.

The Panel also had the opportunity to visit Indmar Marine Engines in Memphis, Tennessee at

the company's invitation during the Panel process. The Panel notes that this was a unique opportunity to gain a first-hand perspective on the workings of a small marinizer and on the potential impact of the anticipated rulemaking on a small business.

PANEL FINDINGS AND DISCUSSION

Under the RFA, the Panel is to consider four regulatory flexibility issues related to the potential impact of the rule on small entities (i.e., small businesses and non-profit organizations):

1. The type and number of small entities to which the rule will apply.
2. Record keeping, reporting and other compliance requirements applicable to small entities.
3. The rule's interaction with other Federal rules.
4. Regulatory alternatives that would minimize the impact on small entities consistent with the stated objectives of the statute authorizing the rule.

The Panel's most significant findings and discussion with respect to each of these issues are summarized below. To read the full discussion of the Panel findings and recommendations, see Section 8 of the report.

1. Number of Small Entities

A complete description and estimate of the small entities to which the proposed rule will likely apply is contained in Section 4 of the Final Report. About 21 small marine engine manufacturers will be directly regulated under this proposal. It is unclear at this time whether or not the more than 150 small boat builders will be directly regulated under this program. **For this reason, the Panel recommends that flexibility concepts aimed at both engine marinizers and boat builders be considered.**

2. Potential Reporting, Record Keeping, and Compliance Requirements

For any emission control program, EPA must have assurances that the regulated engines will meet the standards. Historically, EPA programs have included provisions placing manufacturers responsible for providing these assurances. The program that EPA is considering for marinizers would likely include testing, reporting, and record keeping requirements. Testing requirements for marinizers would likely include certification, production line, and deterioration testing. Reporting requirements would likely include test data and technical data on the engines including defect reporting. Manufacturers would have to keep records of this information.

3. Relevance of Other Federal Rules

The Panel is not aware of any other Federal rules that may duplicate, overlap, or conflict with the proposed rule.

4. Regulatory Alternatives

The Panel considered a wide range of options and regulatory alternatives for reducing the burden on small business in complying with potential recreational marine engine emission standards. As part of the process, the Panel requested and received comment on several ideas for compliance flexibility that were suggested by SERs and Panel members. **Taking into consideration the comments received on these ideas as well as additional economic and technical information gathered about the affected small entities, the Panel will recommend that EPA propose and/or solicit comment on several of them.** The Panel took considerable time in addressing the concerns of the small entities who indicated their belief that their businesses may have to close if relief is not considered for their industry. Taken together, the Panel believes that these options would provide meaningful relief to small businesses in each of the industry sectors potentially affected by a recreational marine engine emission control program while still protecting the program's environmental goals.

Burden Reduction Approaches Designed for Small Marinizers

1) *Broaden engine families*: This approach would allow small marinizers to put all of their models into one engine family (or more) for certification purposes. Marinizers would then certify their engines using the "worst case" configuration. SERs expressed concern for this approach because they might face liability for choosing the "wrong" engine. The Panel believes that this approach has historically reduced the burden in other regulated industries, but agrees that it might not be as useful in the marine industry due to the cost that would be incurred for testing even one engine and the potential liability faced by manufacturers. The Panel appreciates the concerns of the SERs that this approach provides limited value for this industry. However, EPA believes that this approach could help small marinizers that were not involved in this process. **The Panel recommends that EPA request comment on this approach to allow for more widespread public comment.**

2) *Minimize compliance requirements*: This approach would waive deterioration testing during certification and production line testing for small marinizers. Deterioration testing could be replaced with either engineering judgment or an assigned deterioration factor by EPA. One SER comment expressed support for this approach. Two SER comments received on this issue expressed opposition to this approach. One of these SERs commented that that eliminating some of the steps in the compliance process may reduce or eliminate cost, but may also increase the risk of being out of compliance. The other SER that did not support this approach commented that minimizing compliance requirements for small businesses would put

them at a competitive disadvantage. At the same time, reducing these testing requirements should reduce cost to the manufacturer. **The Panel recommends EPA propose reduced compliance testing requirements for small manufacturers.**

3) *Expand engine dresser flexibility*: The engine dresser approach allows marinized versions of certified nonroad engines to be considered “dressed” engines and does not require further certification provided that the marinization process does not include changes expected to increase emissions. This concept would expand the definition of engine dressing used in the commercial marine NPRM to include other marinization changes, such as water-cooled turbocharging, provided that the goal is to match the original engine performance. Two written SER comments were received on this issue. One SER expressed support for the additional allowance of adding turbocharging. This commenter also expressed interest in discussing additional engine changes that could be made without requiring certification. The other SER commented that expanding engine dresser flexibilities based on small business status would put them at a competitive disadvantage. **The Panel recommends that this approach be proposed by the Agency with the approach expanded to include water-cooled turbochargers because, while we believe there is a risk of increased emissions, the benefit of this approach for small business outweighs this risk. The Panel also recommends that the Agency consider other recommendations that it may receive to expand this approach as appropriate during the rulemaking process.**

4) *Design-based certification*: This approach would allow small marinizers to certify to a performance standard by demonstrating that their engines meet design criteria rather than by emission testing. SERs expressed general support for this approach noting that it would address a primary concern of small businesses that would otherwise have to conduct costly certification and deterioration testing programs. However, written comments also stated that a design based certification requirement requiring catalyst technology concerns SERs because of the lack of data of catalyst durability and performance in the marine environment. **The Panel recommends that EPA work with engine and catalyst manufacturers and small gas engine marinizers to define these specifications and include them in the proposal for comment. The Panel also recommends that EPA work with small diesel engine marinizers to try to develop meaningful design criteria for diesel engines and include them in the proposal, if possible.**

5) *Small volume exemptions*: This exemption would allow any small manufacturer to exempt 250 SD/I engines per year of its choice from having to comply with this rule for a period of up to 10 years. The Panel recognizes the difficulty the smallest manufacturers may have in redesigning their engines to meet these standards. Further, this delay in standards implementation will allow them additional time to redesign engines for niche market applications. The Panel points out that the total number of engines exempted via this provision would be less than an estimated 5% of gasoline recreational engines. **The Panel recommends that EPA**

request comment on the need for a 10 year exemption for a portion of the product line produced by small manufacturers of recreational marine engines considering that the approach discussed below (6) may also be an option. Similarly, for small manufacturers of CI marine engines, the Panel recommends this exemption would be for 50 engines. However, the Panel recommends that these small volume exemptions would only be permitted if consistent with the requirements of section 213(a) to achieve the maximum emissions reductions consistent with costs and other relevant factors.

6) *Delay standards for small businesses for five years:* This approach would exempt small marinizers from complying with the standards for a significant period of time (e.g. five years beyond the initial compliance date.) After this time period, the standards would apply. Two SERs expressed support for this approach because they would be able to delay development expenditures and spread this work out over a longer period of time. These two SERs specialize in high performance engines and there is currently little competition in this segment of the marine market. Several other SERs, from other segments of the market, expressed concern that this approach would place them at a competitive disadvantage. These SERs also have indicated that the potential cost increases required to meet stringent emission standards would also hurt sales. **Given the difference in opinion regarding this approach, and the uncertainty surrounding the sales impact, the Panel recommends that EPA propose this approach in order to benefit from additional comments that may be submitted by the entire marine industry, including additional small businesses that were not directly involved in the SBAR Panel process.**

7) *Hardship provisions:* There are two parts to this approach. The first part of this approach would allow small marinizers to petition EPA for additional time to comply with the standards. The second part of this approach would allow small marinizers to apply for hardship relief if circumstances outside their control cause the failure to comply (i.e. supply contract broken by parts supplier) and if failure to sell the subject engines would have a major impact on the company's solvency. **The Panel recommends that the Agency propose this approach.**

8) *Averaging, banking and trading of emission credits:* This approach would allow the use of credits by some engines to be offset by the generation of credits by other engines in the same regulatory program. The one written SER comment received on this approach was not in support of ABT. The commenter expressed concern that large businesses would be able to average or trade credits among engines, possibly without having to make any improvements to a family of engines. According to this SER, for small businesses, the amount of engine testing that would be required to account effectively for credits would be cost prohibitive, particularly for diesel engine manufacturers, but less so for gasoline engine manufacturers. **The Panel recommends EPA propose a limited ABT program for small manufacturers taking advantage of the potential design based certification requirement.** The Panel also

discussed the question of whether recreational marine marinizers should be able to purchase credits from other sectors such as land based nonroad engines. One panel member argued that they should. Another Panel member argued that, under this limited ABT program, the participating manufacturer should only be able to buy credits offered for sale by recreational marine engine manufacturers. That panel member is concerned among other reasons that cross trading would be inappropriate outside of SI marine because it could prevent emission reductions from being achieved in areas where boats are primarily operated. **In light of the points raised on both sides of this issue, the Panel also recommends that EPA take comment on this approach in the proposal.**

9) *Level of the standard for small diesel engines for small marinizers:* SERs are concerned that the level of the standard currently under consideration would have inappropriately high cost impacts on small marinizers in light of the emissions reductions. In order to be responsive to these comments, EPA agreed to consider less stringent requirements for these marinizers (37 to 225kW) if appropriate and if meeting the requirements of the CAA. **The Panel recommends that EPA continue to evaluate the emissions control technologies potentially feasible for these engines and their cost impacts for small marinizers in this engine grouping.**

10) *Adoption of EU or other international standards for small marinizers:* Although this option was not presented to SERs for discussion, SERs stated that they would prefer that EPA adopt EU standards than something more stringent because that would place small US firms at a competitive disadvantage with foreign firms in foreign markets. They were also concerned that if unregulated foreign boats were less expensive, they would be sold illegally in the U.S., which would also result in a competitive disadvantage. One Panel member recommends that, if upon further analysis, EPA finds that the baseline emissions for either diesel or gasoline engines are higher than the current data suggests, EPA should consider the appropriateness of other international standards as an option, as long as it is consistent with the requirements of CAA section 213(a). **The Panel recommends that EPA consider any further data that it receives germane to this issue.**

11) *No standard for small marinizers:* This option was not presented to SERs for discussion. However, SERs commented that the fraction of the pollution in the U.S. is small from their engines so they should not be regulated. Some SERs were concerned that this would put them at a competitive disadvantage with large manufacturers who could market their engines as cleaner than the engines that are not designed for emission standards. One Panel member recommends that, if upon further analysis, EPA finds that no additional emissions reductions can reasonably be required from recreational marine engines, or makes a new finding that these engines do not “cause or contribute” to air pollution, then EPA should consider the appropriateness of no standards as an option, as long as it is consistent with the requirements of CAA section 213(a). **The Panel recommends that EPA consider new**

information that becomes available which is relevant to these issues.

Burden Approaches Designed for Small Boat Builders

EPA outlined a series of potential flexibilities for small boat builders. It is EPA's intent that these regulations will not affect boat design in ways that could add significant cost or impact the performance of the boat. However, the EPA is still in the process of developing its proposal and believes it is appropriate to consider small business flexibilities for boat builders at this time. These concepts would allow engine marinizers to sell small boat builders a limited number of uncertified engines for 5-7 years if boat builders determine that no satisfactory, complying engine is available (more detail on these flexibilities can be found in Appendix B). Discussion of the flexibilities for small boat builders was conducted at a meeting held for the SERs on July 6, 1999. SERs were given the opportunity to comment on the potential boat builder flexibilities presented to them. There was no SER opposition to the flexibilities, although several SERs reiterated their concern that any regulations promulgated by EPA should be transparent to boat builders. **The Panel recommends EPA propose approaches for an engine manufacturer to continue producing uncertified engines if a small boat builder provides information to EPA demonstrating that no complying engine is available which reasonably satisfies the needs of a boat builder. One Panel member further recommends that EPA develop a proposal with full transparency to boat builders.**

5. Additional Recommendations

Safety, Durability and Performance

The engineering challenges that may be encountered in the development of a design for a safe, effective, and durable catalyst in a marine engine has been a point of discussion throughout the Panel process. SERs raised design concerns, suggesting that EPA conduct testing in a marine environment before moving forward with a catalyst-based emission standard. A Panel member agrees with this recommendation. EPA intends to carefully consider the impacts of its regulations on the safety, durability, and performance of marine engines during the development of this rulemaking. This will include but not be limited to evaluation of salt on emission performance and durability. **The Panel recommends that EPA have sufficient consultation with the Coast Guard regarding safety issues such that these issues can be properly identified and addressed in the preamble to the proposed regulations.**

6. Other Issues Discussed

Cost

The Panel provided SERs with preliminary estimates of the cost of implementing various emissions reduction technologies, and SERs commented that these estimates underestimated the

expected costs of applying the technologies to their engines. In addition, SERs expressed concern that the emission reductions likely to be achieved by the rule would be small.

Because SERs had raised the issue of cost, the Panel felt motivated to consider this issue carefully in its deliberations. The Panel recognizes that cost is an important factor for EPA to consider in setting standards under section 213(a), and carefully considered all of the information presented to it on the question of cost. Further discussion on cost and related issues can be found throughout the Panel report, specifically in Section 2.4 of the Panel report.

Particular concern was raised within the Panel with respect to small diesel engine marinizers in the lowest power grouping (37 to 225 kW). The Panel agrees that in evaluating issues relevant to setting a standard for this rule, it is important that EPA consider, for each engine grouping, whether small marinizers would be subject to inappropriately high cost impacts.

The Panel believes EPA should carefully consider all comments received during this outreach process on these and other issues of concern to small entities. A full discussion of the comments received from SERs and Panel recommendations is included in the report.

Sincerely,

/S/

Thomas E. Kelly
Chair
Small Business Advocacy
U.S. Environmental Protection Agency

/S/

Donald R. Arbuckle
Acting Administrator and Deputy Administrator
Office of Information and Regulatory Affairs
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