Comments from the

Northeast States For Coordinated Air Use Management (NESCAUM)

Regarding

EPA's Notice of Proposed Rulemaking (NPRM)

"Control of Emissions from Spark-Ignition Marine Vessels and Highway Motorcycles"

Docket No. A-2000-02

January 2, 2003

The Northeast States for Coordinated Air Use Management (NESCAUM) is providing comments in response to EPA's Notice of Proposed Rulemaking (NPRM) entitled "Control of Emissions from Spark-Ignition Marine Vessels and Highway Motorcycles". NESCAUM is the association comprised of the six New England states, as well as New York and New Jersey, and was formed in 1967 in response to a need by these states to coordinate and cooperate on air policy issues. The NESCAUM states have significant air quality issues and we have been pleased to work with EPA in the past on efforts to reduce vehicle emissions from all market sectors. Towards this end, we support EPA's efforts at promulgating regulation to reduce emissions from highway motorcycles and spark-ignition (SI) marine vessels.

OVERVIEW

EPA's proposes to regulate exhaust emissions from all classes of highway motorcycles and evaporative emissions from SI marine vessels as part of an effort not only to reduce emissions from these types of vehicles, but also to harmonize with regulations already in place in California. NESCAUM strongly encourages efforts to achieve technologically feasible maximum emissions reductions. In many instances, California regulation, promulgated by the Air Resources Board (ARB), represents the most stringent regulation, and as such, harmonization with California is one recommended approach. However, EPA's proposal falls short of harmonization with ARB, both for motorcycles and SI marine vessels, as the two charts below illustrate:

Motorcycle

Agency	Exhaust Emissions	Evap. Emissions
ARB	YES ▪ Regulated, greater than 50 cc, Class I, II III, two Tiers ▪ Class III redefined to include ≥ 280 cc (was ≥700 cc)	YES ▪ Regulated, greater than 50 cc, Class I, II III

EPA	PROPOSED
	▪ Harmonized standards w/ARB in two Tiers
	▪ EPA includes less than 50 cc; ARB does not
	▪ 2 year lag in implementation
	  ▪ Tier 1: ARB is 2004; EPA is 2006
	  ▪ Tier 2: ARB is 2008; EPA is 2010
		NO

Marine

Agency	Exhaust Emissions	Evap. Emissions
ARB	YES ▪ PWC/outboard ▪ Stern drive/inboard	NO
EPA	NO ▪ Possible proposal later, pending ARB & industry "technology development program" ▪ (current standards for PWC/outboard were promulgated in 1996 but are less stringent than current California)	PROPOSED ▪ Implementation in 2008. ▪ Both types (PWC/outboard and stern drive/inboard)

Regarding motorcycles, NESCAUM applauds EPA's decision to regulate exhaust emissions from motorcycles of less than 50 cubic centimeter (cc) displacement, a class not currently regulated in California. However, two striking deviations from ARB's regulation are of significant concern – exhaust emission implementation dates lag behind California by two years, and motorcycle evaporative emission requirements have not been proposed at all.

Regarding SI marine, NESCAUM supports EPA for taking the significant step to propose regulation of evaporative emissions from these vessels, something yet to be considered by ARB. However, EPA has elected not to propose exhaust emission requirements in the NPRM, instead deferring action pending the results of an ongoing ARB/industry technology feasibility program.

While NESCAUM applauds and supports EPA's leadership in proposing emission regulations for less than 50 cc motorcycles and for proposing evaporative emission requirements for SI marine vessels, we are nevertheless disappointed that EPA did not avail itself of the opportunity to develop comprehensive exhaust and evaporative requirements for both motorcycle and SI marine, or to harmonize with ARB on key aspects of these programs – motorcycle exhaust emission implementation dates, motorcycle evaporative emission requirements, and SI marine exhaust emission standards. These issues are further explained, below.

MOTORCYCLE

EPA has indicated an intent to harmonize Federal on-highway motorcycle standards with those of California, and NESCAUM strongly endorses this approach. While California is often regarded as a focal point for motorcycle riding as well as other outdoor pursuits because of its temperate climate, the Northeast States' outdoor attractions also encourage considerable on-highway motorcycle use. To ensure that air quality is not compromised, regulation is essential to ensure cleaner air, yet be technologically feasible for manufacturers. In reviewing the NPRM, NESCAUM is providing comments on a number of provisions, including implementation dates for Class III motorcycles, emission standards for Class I and II (50 - 280 cc displacement) motorcycles, evaporative emission standards, emission standards for less than 50 cc

displacement motorcycles, extension of useful life, production line testing, credit trading and the stringency of the FEL HC cap.

Class III Implementation Dates

For Class III motorcycles, the largest segment of on-highway motorcycles, EPA has harmonized with ARB's emissions standards, but delays implementation by two years for both Tier 1 and Tier 2:

Class III Exhaust Emission Standards and Implementation Dates – EPA and ARB

Tier	Engine Size (cc)	Implementation EPA	Implementation ARB	HC+NOx (gm/km)	CO (g/km)
1	> 280	2006	2004	1.4	12
2	> 280	2010	2008	0.8	12

ARB finalized these standards and implementation dates in early 1999[1], allowing manufacturers approximately five years' lead-time for compliance which seemed appropriate since regulations this stringent were being applied to this industry for the first time. However, 2004 is fast approaching, and exhaust emission strategies have not only been developed, but at this late date have had to have been evaluated for compliance requirements. Furthermore, the motorcycle industry has a large market in California as the climate is conducive to year-round riding. Economies of scale, already applied to the California market, would be enhanced for the remaining 49 states by applying the same emission standards in the same timeframe. In light of these considerations, NESCAUM sees no economic or technical reason to delay implementation of standards that the industry has known about for some four years, and urges EPA to fully harmonize with ARB, aligning not only exhaust emissions standards, but implementation dates, as well.

Classes I and II Emission Standards

For Class I and II motorcycles, EPA has elected to promulgate standards, that while aligned with those of California, do little to promote improved air quality, since the California standards for these two classes have a) been in place since 1982 and b) have been shown to not be technologically challenging, as EPA acknowledges in the NPRM:

Classes I and II Exhaust Emission Standards and Implementation Dates – EPA and ARB

Class	Engine Size (cc) EPA	Engine Size (cc) ARB	Implementation EPA	Implementation ARB	HC (g/km)	CO (g/km)
I	< 180	------	2006	------	1.0	12.0
II	180-279	50-279	2006	1982	1.0	12.0

Clearly, there in no economic or technical justification for delaying implementation of emissions standards that have been in effect, and are being met by manufacturers, for some 20

[1] ARB Executive Order No. 99-073

years. More critical than simply this unnecessary delay however, is the need to promulgate *new* exhaust emission standards for motorcycles of less than 280 cc displacement. NESCAUM urges EPA to work with ARB to develop new standards for these smaller-displacement motorcycles, that, among other provisions, includes NOx requirements. Furthermore, because many of these types of machines are marketed globally, EPA and ARB ought to work with the European Union to not only develop a harmonized set of emission standards with aligned implementation dates, but a common test procedure, as well.

Evaporative Emission Standards

In striving to harmonize with California, EPA has chosen not to propose regulation of evaporative emissions from any class of on-highway motorcycles. ARB has had evaporative emission standards in effect since 1983 for Class I and II motorcycles and since 1984 for Class III motorcycles. NESCAUM believes that evaporative emissions contribute significantly to hydrocarbon emissions in the atmosphere, and should be regulated. ARB has not changed these evaporative emissions requirements for Tier 1 and Tier 2, making these requirements nearly 20 years old. Manufacturers who sell product in California – a prime market – have long developed and implemented evaporative emissions strategies to meet these requirements, so at the very least, EPA ought to complete the harmonization process with California and adopt these 1983/1984 standards.

More critically, however, a need exists to revisit evaporative emissions approaches, not only for motorcycles, but for all types of smaller SI-engined vehicles, to ensure that maximum benefits result. In the NPRM, EPA justifiably expresses concern regarding permeation emissions from fuel tanks used in these types of vehicles and has responded by proposing evaporative emissions standards for SI marine vessels (fuel tank and fuel line permeation and diurnal standards). For motorcycles, the NPRM cites potential HC emission inventory reduction estimates resulting from potential control of permeation that are significant – nearly 25,000 tons by 2030. However, permeation may only be part of the evaporative problem. There is evidence, for example, of HC evaporative emissions from the couplings and pumps that comprise SI fuel systems, and a comprehensive evaporative emissions strategy ought to take this source into account. In short, to ensure maximum evaporative emission reductions, NESCAUM urges EPA, ARB and other stakeholders to work together to develop a strategy that applies to the complete fuel system as a whole, for all similar types of SI fueled vehicles including motorcycles, marine vessels, ATV's, etc.

Exhaust Emission Standards For Engines of Less Than 50 cc Displacement

NESCAUM applauds EPA's decision to propose exhaust emissions standards covering all displacement classes of motorcycles, by extending Class I to include engines of less than 50 cc displacement. While the proportion of these types of motorcycles is small in the United States marketplace, they nevertheless do exist, and if left unregulated, represent a significant exhaust (and evaporative) emissions source especially on a per vehicle basis. The standards proposed reflect those in place in California since 1982 for the 50 – 279 cc displacement class; proposing these values for less than 50 cc motorcycles – especially with the additional lead time of the 2006 implementation date, should pose little difficulty for manufacturers to achieve.

Extension of Useful Life

EPA is proposing to extend the "useful life"[2], for Class III motorcycles, from 30,000 to 40,000 km. This approach follows a general trend toward greater reliability for all vehicle sectors, most notably passenger cars and heavy trucks. Indeed, EPA has extended the "useful life" for passenger cars to 10 years or 100,000 miles and for heavy-duty trucks to 435,000 miles. EPA's decision to extend the useful life of Class III motorcycles by 10,000 km is consistent with increased reliability, and increased useful life requirements for all vehicle types and NESCAUM endorses this useful life extension.

Production Line Testing

EPA has elected not to propose production line testing, instead opting to "spot check" motorcycles via specific request to the manufacturer. NESCAUM believes this is an incorrect approach and should be revisited by The Agency, prior to final rulemaking. In fact, in seeking comment in the NPRM, EPA provides compelling arguments in support of production line testing, and the argument can be made that production line testing serves as an "early warning system" against emission control system failures and subsequent enforcement action. EPA finalized production line testing for nonroad engines and vehicles and should do so for motorcycles, as well.

Credit Trading Program

EPA is proposing a "credit trading" program structured to be similar to, and complementary with, the program in place in California. NESCAUM supports this type of program in principal, but cautions EPA to not include any provisions that might jeopardize the effectiveness of the overall emissions control regulation. For example, EPA is following ARB's approach of only allowing early banking prior to the beginning of implementation of the regulation, and not allowing any trading. EPA is also proposing a form of "cross-trading" between motorcycle classes by incorporating Class I and II motorcycles into a Class III averaging program to provide additional flexibility for manufacturers. While NESCAUM has no specific objection to this approach in principal, we caution that a credit program with this feature needs to be carefully crafted to ensure there are no "windfall credits", given the lack of stringency of the proposed standards for Class I and Class II motorcycles, when compared to Class III motorcycles. The three proposals proffered in the NPRM seem to have merit, since sales weighting would diminish Class I and II windfall credits due to their comparatively low volumes when compared to Class III. Nevertheless, NESCAUM would like to see EPA also consider discounted credits to account for the disparity in the stringency of the standards.

FEL HC Cap

EPA is following ARB's lead by proposing a cap on the Family Emission Limit as part of the credit trading program. ARB has imposed a limit of 2.5 g/km, consistent with the prevailing

[2] Defined by EPA as the period of time the manufacturer must demonstrate the effectiveness of the emission control system.

HC standard for California at the onset of their emissions trading program. However, EPA is proposing a cap of double the ARB value, at 5.0 g/km HC. EPA's rationale, that their 5.0 cap reflects the current EPA HC standard, much like the ARB 2.5 cap reflected their prevailing standard, is valid from a regulatory perspective, but not from a technical one. ARB has consistently ratcheted down the HC standard to 1.4 and even 1.0 g/km (depending on Class) when the 2.5 standard ended in 1985. In fact, ARB has not had a 5.0 g/km HC standard since 1981, and it seems unlikely that a value this lenient would be very effective as a federal FEL cap. NESCAUM urges EPA to review the technical arguments behind the 5.0 cap, and consider a more restrictive value at or near 2.5 g/km.

SI MARINE

EPA is proposing new emission standards for vessels (primarily pleasure craft boats) powered by spark-ignition (SI) engines. This regulation is of significant interest to the Northeast States, who continue to grapple with significant air pollution issues and whose citizens and visitors enjoy outdoor activities using vessels powered by these engines. States other than California are preempted from any independent regulatory activity of this type and rely on Federal regulation to ensure air quality. Against this backdrop, NESCAUM is pleased, yet at the same time concerned over the proposal put forth by EPA in the NPRM. We are pleased that EPA has shown leadership in identifying a significant source of HC emissions from SI marine vessel fuel systems and has responded with an evaporative emissions proposal. We are concerned that EPA has elected not to propose exhaust emission regulations, resulting in one type of vessel (PWC[3]/outboards) with a comparatively lenient set of standards from a prior rulemaking (1996), and the other type (stern drive/inboard) completely unregulated. NESCAUM has additional concerns regarding the stringency, methodology and implementation dates for the evaporative emissions standards, and with the average, banking and trading (ABT) program that is proposed.

Evaporative Emission Standards

NESCAUM applauds EPA's step of proposing evaporative emissions standards for both types of SI marine vessels[4], in advance of activity by ARB. EPA provides compelling arguments that HC emissions due to diurnal and permeation evaporation constitute the majority of evaporative fuel loss, with hot soak and refueling emissions having considerably less of an impact. Towards this end, EPA proposes distinct evaporative emissions standards for diurnal venting (from the fuel tank), for fuel tank permeation, and for fuel line permeation. NESCAUM supports the scope of the proposal on two fronts – it addresses the two significant types of evaporative emissions, and it applies to both types of marine vessels.

While EPA's initiative to propose evaporative emission standards is an important first step in regulating these types of emissions from SI marine vessels, NESCAUM believes that the evaporative emissions program should be restructured in three ways. First, the standards themselves can be made more stringent. For example, as the NPRM notes, the 1 psi tank pressure by which the standard is based is essentially the "low end" of pressurization capability

[3] PWC = "Personal watercraft" such as jet skis
[4] PWC/outboards and stern drives/inboards

which translates into a less stringent standard. The Coast Guard requires 3 psi, and EPA had considered 2 psi as a "middle ground." As the NPRM notes, this so-called "middle ground" would yield at least 55 percent reduction, or double the value from a 1 psi-design-based standard. Additionally, 2 psi tanks are common for on-highway applications and could readily be applied for the SI marine market. NESCAUM encourages EPA promulgate a 2 psi-based evaporative emissions standard and to subsequently explore with fuel tank manufacturers, methods to ensure this requirement will not infringe upon vessel design or cause undue tank deformation.

The second way the evaporative emissions program ought to be restructured is in the approach to the vessel's fuel system itself. The program, as is currently proposed, contains evaporative requirements for *components* of the system, namely the fuel tank and fuel lines. While these are certainly key contributors, the issue of whether the fuel system, as a *complete system*, is performing properly in terms of minimal evaporative losses, cannot be determined. As noted earlier in our comments regarding evaporative emissions from motorcycles, a systems approach that will take into account potential losses from system connections ought to be investigated.

The third and final evaporative emissions issue involves implementation date. If the current component-based requirement is maintained, then a 2006 implementation date is far more reasonable, from an environmental perspective, than the proposed 2008 date. For example, since the technology exists for a 2 psi-based tank standard for on-highway applications, then a 1 psi-based standard – a less stringent standard – does not need over five years' lead time. NESCAUM urges EPA to move back the implementation date to 2006.

Exhaust Emissions

ARB has been active in promulgating exhaust emissions standards for both types of SI marine vessels, in 1998 for PWC/outboard marine engines, and in 2001 for stern drive/inboard marine engines. While EPA has exhaust emission standards for PWC/outboards, they are significantly less stringent than those of ARB. EPA is not proposing exhaust emissions standards for stern drive/inboards, claiming that in the past, these engines were comparatively "clean" and in the near term, may be inappropriate an application for catalyst technology.

ARB and industry have embarked on a technology development program for marine application, and NESCAUM is encouraged, not only by that program, but by EPA's active participation in the program. However, ARB believes that the program will be successful, and has promulgated regulation for 2007 that will be catalyst-forcing. In the interim, ARB has promulgated a non-catalyst stern drive/inboard standard starting in 2003. NESCAUM strongly supports the ARB approach of regulating a target exhaust standard or standards, and then working with industry to try and achieve that standard. We strongly encourage EPA to adopt a similar approach, and propose exhaust emissions standards for stern drive/inboards that are harmonious with those of California.

ABT (Evaporative Emissions)

Averaging, banking and trading (ABT) programs can, in certain circumstances, be mutually beneficial to industry and the environment, encouraging "pull ahead" technology that can result in earlier emissions reductions. These programs tend to be most effective when novel technologies need to be developed to meet stringent exhaust emissions requirements – such as those in the forthcoming 2007 heavy-duty on-highway truck regulation. In the case of evaporative emissions for the SI marine industry, NESCAUM is opposed to any ABT program for two reasons. First, the evaporative standards as they are currently proposed, are hardly technology-forcing; an ABT program engenders the possibility of windfall credits and discourages technology pull-ahead. Add to that the 2008 implementation date giving five years' lead time, and it seems unlikely that ABT as an industry relief device is needed. Second, credit tracking is an issue, especially with fuel system manufacturers oftentimes not knowing which company, or for what application, they are providing product. NESCAUM urges EPA to reconsider implementing any ABT program for evaporative emissions for SI marine applications.

Labeling Program

ARB has instituted a labeling program for both PWC/outboards, and sterndrive/inboards, providing potential owners, as well as enforcement personnel, with information regarding the relative cleanliness of the product. ARB only regulates exhaust emissions for these types of vessels, and the labeling *requirement* (it is not voluntary) applies to exhaust emissions.

As shown below, the labels are easy to read, provide owners with a sense of the cleanliness of their product, and serve to show that regulatory agencies are striving for the cleanest air possible from all vehicle market sectors.

NESCAUM supports labeling programs of this type, and not only encourages EPA to adopt labeling programs, but to work with ARB, and perhaps other state entities such as NESCAUM, to develop a common program, with common formats, for all emissions and vehicle types. For example, ARB's program applies to *exhaust* emissions from SI marine vessels, since this is the only emissions type California currently regulates. A Federal labeling program for *evaporative* emissions – the only emissions EPA is proposing to regulate – must somehow be complementary with ARB's program to avoid confusion.

NESCAUM urges EPA to work with ARB, as part of its harmonization efforts, and develop and implement common labeling programs for evaporative and exhaust emissions and for all SI vehicle types.

BLUE SKY PROGRAMS

To the extent that manufacturers of any type of engine or vehicle – motorcycle, SI marine nonroad compression ignition, etc. – would be motivated to develop cleanser-technology products, NESCAUM supports Blue Sky programs for motorcycle and SI marine applications, if the incentive for manufacturers is significant enough to make these programs a reality. In the NPRM, EPA proposes a Blue Sky program for evaporative emissions, but not for motorcycle exhaust emissions, nor does EPA offer any potential incentive options for the marine evap program. NESCAUM suggests that as a staring point, EPA maintain consistency and offer Blue Sky Programs for *all* appropriate vehicle/engine types. Secondly, EPA should consider holding a separate "Blue Sky Workshop" allowing all stakeholders – environmental groups, regulators, and industry alike – to sit together and fully examine Blue Sky. The two primary goals of the meeting would be a determination if Blue Sky is desirable, and if it is, how to best implement the program and determine appropriate incentives. Similarly, conflicts with ABT programs, either in place or proposed, would need to be resolved.

NESCAUM thanks EPA for the opportunity to comment on the provisions in this NPRM. Overall, it represents an important step in the regulation of motorcycles and SI marine vessels. NESCAUM hopes EPA will consider the suggestions in these comments and we offer our support and assistance in making this forthcoming regulation effective.

Sincerely,

Michael Block
NESCAUM