

**Statement of the  
Northeast States for Coordinated Air Use Management  
on the U.S. Environmental Protection Agency's March 2007 Proposed Rule  
Control of Emissions of Air Pollution from Locomotive Engines and Marine  
Compression Ignition less than 30 Liters per Cylinder**

**May 10, 2007  
Chicago, Illinois**

Good morning. My name is Eric Skelton and I am here today, representing the Northeast States for Coordinated Air Use Management (NESCAUM). NESCAUM is an association of state air pollution control agencies in Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont. NESCAUM appreciates the opportunity to give testimony on EPA's proposal relating to control of air pollution from locomotive and marine diesel engines. The NESCAUM states commend EPA and strongly support this effort. We have a few changes to suggest, which we believe will improve on the emissions benefits achievable through this rulemaking. The proposed rule, once implemented, will be a cornerstone of the Agency's efforts to reduce mobile source emissions along with the nonroad, highway diesel, and Tier 2 regulations.

The need to reduce locomotive and marine diesel engine emissions is indisputable. Locomotive engines and marine engines are significant contributors to elevated levels of ozone, fine particulate matter (PM<sub>2.5</sub>), and the primary emissions of several toxic air pollutants of concern in the NESCAUM region. According to 2002 emissions inventories, these source categories are responsible for around 10 percent of mobile

source nitrogen oxide (NOx) emissions and 10 percent of mobile source PM<sub>2.5</sub>. EPA estimates that PM<sub>2.5</sub> emissions from locomotive engines and Category 1 and 2 marine diesel engines will comprise 20 percent of mobile source fine particulate pollution in 2030.

Attaining the National Ambient Air Quality Standard (NAAQS) for ozone and fine particulate matter is a high priority for the states in the Northeast. Over the past several years, states have expended considerable time and resources developing State Implementation Plans (SIPs), which are due to EPA over the next year. The SIPs will include a host of control measures, designed to achieve the required emissions reductions. States are also developing plans and programs to address regional haze, due later this year. Emission reductions of NOx and PM<sub>2.5</sub> are needed as soon as possible to enable states to attain the NAAQS by the statutory deadlines, as well as maintain the standards into the future. Moreover, EPA has recently promulgated a new, more stringent PM<sub>2.5</sub> NAAQS, and will be concluding a review of the ozone NAAQS by March 2008. In January 2007, EPA staff reviewing the ozone NAAQS stated that scientific evidence "calls into question the adequacy of the current standard" and "provides strong support for consideration" of a tighter standard to protect sensitive populations. Thus, the NESCAUM states believe it is essential to have additional timely and aggressive programs in place to reduce NOx and PM<sub>2.5</sub>, such as the programs to be implemented through the proposed rule, if we are to meet these future challenges. Further, diesel exhaust has been classified as a probable carcinogen.

Reducing emissions to attain federal standards is first and foremost a matter of public health. Epidemiological studies show there are adverse human health effects from exposure to ozone concentrations as low as 80 ppb during moderate exercise.<sup>1</sup> Between 2004 and 2006, ozone exceedances were measured at 117 monitors in the NESCAUM region. Additional ozone precursor emission reductions are needed now to address this public health concern. Reductions in emissions from locomotives and marine engines will benefit those northeast residents who are routinely exposed to harmful concentrations of ozone.

Particulate matter, like ozone, has been linked to a range of serious respiratory health problems. Between 2004 and 2006, exceedances of the daily PM<sub>2.5</sub> air quality standard were measured at 98 monitors in the NESCAUM region. Ambient monitoring conducted by the Clean Air Task Force showed mean ultrafine particle concentrations inside commuter rail trains ranged from 3 to 20 times the concentration found in the outdoor air. As part of the same study, high levels of polyaromatic hydrocarbons and fine particles were measured in commuter ferry cabins in Boston. Considering commuter rail and passenger ferries carry large volumes of people, reducing emissions from the engines powering these vehicles is extremely important to reducing public exposure to air pollution.

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<sup>m</sup> U.S. EPA's Air Quality Criteria Document for Ozone and Photochemical Oxidants (July 1996a)

EPA's proposal for regulating locomotive and marine diesel engines is a critical step in improving human health by providing much needed NO<sub>x</sub>, PM, and toxics reductions. This rule will substantially reduce emissions from these sectors when fully implemented. NESCAUM believes, however, that the rule can be strengthened to provide even greater emission reductions on an accelerated schedule. We offer the following recommendations in that regard, recognizing as discussion of the proposal continues over the coming weeks, that other approaches may be offered to accelerate implementation deadlines and make other refinements. NESCAUM remains willing to analyze alternatives and ultimately support those that will achieve similar or expanded benefits. Now, I will summarize the NESCAUM states' comments on the EPA proposal. We will submit detailed comments in writing separately.

### **Proposed Locomotive Emission Standards**

The NESCAUM states support the proposed 0.10 gram per brake horsepower hour (g/bhp-hr) PM standard proposed for Tier 3 engines. However, we strongly encourage EPA to implement the Tier 3 standard by no later than the end of 2010, rather than the 2012 date as proposed by EPA.

We support Tier 4 emissions levels that are at least as stringent as the proposed 1.3 g/bhp-hr for NO<sub>x</sub> and 0.03 g/bhp-hr for PM. However, we strongly encourage EPA to require Tier 4 emissions levels for both NO<sub>x</sub> and PM by no later than the end of 2013, rather than the respective 2017 and 2015 dates proposed by EPA .

### **Proposed Locomotive Rebuild Requirements**

Given the extremely long operational life of locomotive engines, rebuild requirements are essential in order to achieve emission reductions from the existing fleet of locomotives. NESCAUM supports the Tier 0 and Tier 1 rebuild standards as proposed, but we strongly encourage EPA to accelerate the Tier 2 rebuild requirements to no later than the end of 2010, rather than the 2013 date proposed by EPA.

According to a railroad emissions inventory for the six New England States, Class I freight railroads are responsible for only 26 percent of the NOx emissions. In contrast, regional/local freight railroads and commuter/intercity railroads are responsible for 31 percent and 42 percent of the NOx emissions respectively. Therefore, it is very important to the Northeast States that rebuild requirements apply to regional freight railroads. We will provide more detailed information on this aspect of the proposal in our written comments.

### **Proposed New Marine Engine Emission Standards**

The NESCAUM states support the proposed Tier 3 and Tier 4 standards for Category 1 and 2 marine engines. However, we are concerned that the Tier 4 standards as proposed apply only to engines greater than 800 hp (600 kW). While the present concerns regarding space constraints and catalyst performance pertaining to aftertreatment devices on smaller marine engines may be legitimate, we expect these engineering challenges can be overcome, given sufficient lead time. Therefore, we ask EPA to regulate commercial marine diesel engines between 25 and 800 horsepower, since this sector represents a significant source of emissions. For example, of 41

harbor craft vessels evaluated for a recent Boston Harbor emissions inventory, 30 were powered by engines less than 800 horsepower. We also ask EPA to consider accelerating the Tier 4 emission standard implementation dates to the 2013 to 2015 timeframe, depending on the engine power rating. Finally, we encourage EPA to consider accelerating the Tier 3 implementation dates accordingly.

### **Proposed Marine Engine Remanufacture Standards**

The NESCAUM states strongly encourage EPA to incorporate Alternative 5 from the Regulatory Impact Analysis, to include remanufacture standards for Category 2 engines. Further, we encourage EPA to accelerate the remanufacture standards so that they become effective no later than 2009. Finally, we encourage EPA to consider incorporating a similar remanufacture program for Category 1 marine engines. While standards for ocean-going vessels (C3 engines) are not the subject of this rulemaking, we encourage EPA to continue to work through the International Maritime Organization or federal regulation to press for more stringent standards for these very large engines.

### **Summary**

In summary, the NESCAUM states commend EPA for undertaking this initiative to reduce locomotive and marine engine emissions. The current proposal when fully implemented will reduce 765,000 tons of NO<sub>x</sub> and 28,000 tons of PM annually. If the changes suggested by the northeast states are incorporated, the rule will result in more significant, and much needed, reductions in an expedited timeframe.

Finally, NESCAUM supports the position of the National Association of Clean Air Agencies (NACAA). I have attached NACAA's statement to my testimony to be included in the record of this hearing. The states are preempted from regulating locomotive and new marine engine emissions, yet there is the need to reduce their emissions in order for states to achieve and maintain air quality standards and reduce public exposure to ozone, particulates, and toxics. Therefore, we strongly urge EPA to finalize the emission standards by the end of calendar year 2007. We look forward to working with the EPA in this process, including evaluating alternate approaches that may achieve similar or greater air quality benefits. Thank you for this opportunity to testify.

**Testimony of  
Dennis J. McLerran  
on behalf of the  
National Association of Clean Air Agencies  
on the  
U.S. Environmental Protection Agency's  
Proposed Rule on the  
Control of Emissions of Air Pollution from Locomotive Engines and  
Marine Compression-Ignition Engines Less than 30 Liters per Cylinder  
72 *Federal Register* 15938**

**May 8, 2007**

Good morning. I am Dennis McLerran, Executive Director of the Puget Sound Clean Air Agency in Seattle, Washington. I appear here today on behalf of NACAA – the National Association of Clean Air Agencies – which represents air pollution control agencies in 54 states and territories and over 165 metropolitan areas across the country. As Co-Chair of NACAA's Mobile Sources and Fuels Committee, I am pleased to provide our association's preliminary perspectives on the U.S. Environmental Protection Agency's (EPA's) proposed rule on the *Control of Emissions of Air Pollution from Locomotive Engines and Marine Compression-Ignition Engines Less than 30 Liters per Cylinder*, as published in the *Federal Register* on April 3, 2007 (72 FR 15938).

Diesel-fueled locomotives and marine engines are among the largest and most dangerous under-regulated sources of pollution in the U.S. Last year, NACAA published a study in which we estimated that emissions from locomotives and marine diesel engines are responsible for more than 4,000 premature deaths each year, as well as a host of other serious public health and welfare consequences (*Danger in Motion: It's Time to Clean Up Trains and Boats*, February 2006). At that time, we called upon EPA to take immediate action to address these sources in a meaningful and expeditious way. NACAA commends the agency for its leadership in issuing this proposal and we



offer our firm support for swift action. We urge EPA to promulgate a final rule no later than the end of 2007.

The proposal currently before us represents a good step forward in addressing emissions from locomotive and marine diesel engines. We are pleased that EPA is pursuing more stringent emission standards for new and remanufactured engines and is seeking to eliminate emissions from unnecessary locomotive idling. We believe, however, that given the significant contribution of locomotives and marine diesels to serious air quality problems across the nation, and the substantial public health and welfare benefits that can result from comprehensive and timely controls, the rule can and should be strengthened in several important ways.

#### There Is a Compelling Need to Control Emissions from Diesel Locomotives and Marine Engines

The substantial levels of emissions from locomotive and marine diesel engines contribute to unhealthful concentrations of fine particles and ozone. These translate into startling health impacts, including premature deaths, as well as heart disease, aggravated asthma and other respiratory conditions. Also, because diesel exhaust is a likely human carcinogen, increased risk of lung cancer occurs from emissions from these engines. In addition, these emissions lead to a host of environmental harms, such as visibility impairment, crop damage and acid rain.

EPA's proposal to cut emissions from locomotive and marine diesel engines comes at a time when states and localities across the U.S. face the daunting challenge of developing strategies to achieve and maintain health-based National Ambient Air Quality Standards for ozone and PM<sub>2.5</sub>. Air quality in approximately 120 areas of the nation currently violates the 8-hour ozone and/or fine particulate matter (PM<sub>2.5</sub>) standards, exposing well over 150 million people to unhealthful levels of air pollution. It is clear that considerable efforts by EPA and state and local agencies will be needed to reduce the health and environmental impacts of sources of pollution contributing to these widespread problems. In addition, EPA has already taken action to tighten the

PM<sub>2.5</sub> ambient air quality standard and is considering similar action for the ozone standard, thus increasing the potential challenges facing states and localities. Further, many additional areas of the country are adversely affected by unacceptably high levels of toxic air pollution, much of which is caused or exacerbated by diesel engine emissions.

As EPA appropriately acknowledges in its proposal, diesel locomotive and marine engines are significant contributors to air pollution in many areas of the country. The agency has estimated that emissions from these engines currently represent about 20 percent of all mobile source oxides of nitrogen (NO<sub>x</sub>) and 25 percent of all mobile source diesel fine particulate matter. In addition, because these engine categories are subject only to minimal controls, unless they are subject to more stringent regulation, their relative contribution to emission inventories is anticipated to increase by 2030 to more than one-third of mobile source NO<sub>x</sub> emissions and two-thirds of diesel PM emissions.

#### Emission Control Requirements for Locomotive and Marine Diesel Engines Should Achieve the Greatest Reductions Feasible As Soon As Possible

Congress, through Section 101(a)(3) of the Clean Air Act, has vested state and local clean air agencies with “primary responsibility” for the control of air pollution. This is a responsibility we take very seriously. As we seek to achieve and sustain clean, healthful air throughout the country, we must consider the full measure of emission reductions feasible from every source of pollution as quickly as possible. With respect to locomotive and new marine diesel engine emissions, however, states and localities are preempted from taking regulatory action. Therefore, we urge EPA to consider the following recommendations for achieving greater emission reductions from locomotive and marine diesel engines.

With respect to locomotives, we recommend that the implementation dates for new engine and remanufacture standards be accelerated. Technical experts within our association, including from the California Air Resources Board and the South Coast Air

Quality Management District, believe that Tier 4 NO<sub>x</sub> and PM standards for new engines at least as stringent as those proposed by EPA are technologically feasible by the end of 2013 and that the Tier 3 PM standard for new locomotives can be implemented no later than the end of 2010. They have further advised us that the Tier 2 remanufacture standard for PM can be implemented by the end of 2010. We recommend that EPA advance the rule's implementation dates accordingly.

We also recommend that EPA include in the final rule remanufacture standards for locomotives used for Class II and Class III railroads. In addition, to further augment the regulation of locomotive emissions, we encourage EPA to consider establishing a process for certifying NO<sub>x</sub> and PM aftertreatment devices for Tier 0, 1, 2 and 3 engines and requiring the use of the most effective certified system deemed to be cost-effective for remanufacturing as the devices become available, but not later than 2014.

For marine diesel engines, we support applying emissions standards not only to new engines, but to rebuilt/remanufactured engines as well, and encourage EPA to include such standards in the final rule for all Category 1 (C1) and Category 2 (C2) engines. For new marine diesels, we recommend that EPA expand the coverage of Tier 4 standards to include all new C1 and C2 engines greater than 25 horsepower and accelerate implementation to occur from 2013 to 2015 (depending on the engine's kW rating); Tier 3 implementation dates should also be accelerated, accordingly.

As discussion of EPA's proposal unfolds in the coming weeks, other approaches may be offered to accelerate implementation deadlines and otherwise refine this rule. NACAA will be pleased to analyze any such alternatives and is prepared to support those for which our analysis demonstrates similar or expanded public health and welfare benefits. Our top priority is to affect the greatest emission reductions feasible as soon as possible, and we are open to considering whatever approach best achieves this goal.

Finally, although this proposal does not address Category 3 marine engines, NACAA has long advocated for aggressive and swift regulation for these engines. Therefore, we reiterate our concern over this issue and urge EPA to ensure that such controls be implemented expeditiously, either through international protocol with the International Maritime Organization (IMO) or through U.S. regulation. We are encouraged by the U.S. proposal recently presented to the IMO.

### Conclusion

In conclusion, NACAA believes that EPA's proposal to control emissions from locomotives and marine diesel engines of less than 30 liters per cylinder signifies an important step toward instituting a meaningful program for reducing emissions from these engine categories, which contribute significantly to air quality problems throughout the country. We appreciate this opportunity to express our support for the proposal's general framework and to offer some key recommendations that we believe will appropriately strengthen the rule's public health and environmental benefits. Moreover, we urge timely action to publish a final rule by no later than the end of 2007. Toward that end, we look forward to continuing to work in partnership with EPA and other stakeholders as the agency moves ahead with this important program. Thank you for this opportunity to testify.