

**BOARD OF DIRECTORS**

**Co-Presidents**

Shelley Kaderly  
Nebraska

Ursula Kramer  
Tucson, AZ

**Co-Vice Presidents**

Andrew Ginsburg  
Oregon

Christine Robinson  
Clark County, NV

**Co-Treasurers**

Arturo J. Blanco  
Houston, TX

Colleen Cripps  
Nevada

**Past Co-Presidents**

John Paul  
Dayton, OH

Eddie Terrill  
Oklahoma

**Directors**

Joyce E. Epps  
Pennsylvania

Larry Greene  
Sacramento, CA

G. Vinson Hellwig  
Michigan

James Hodina  
Cedar Rapids, IA

Lynne A. Liddington  
Knoxville, TN

Keith Overcash  
North Carolina

Nancy L. Seidman  
Massachusetts

David J. Shaw  
New York

Don Vidrine  
Montana

**Executive Director**

S. William Becker

August 24, 2007

U. S. Environmental Protection Agency  
EPA Docket Center  
1200 Pennsylvania Avenue, NW  
Mail Code: 6102T  
Washington, DC 20460  
Re: Docket ID No. EPA-HQ-OAR-2007-0011

To Whom It May Concern:

On behalf of the National Association of Clean Air Agencies (NACAA), thank you for the opportunity to comment on the proposed rule titled "Standards of Performance for Petroleum Refineries" (*72 Federal Register 27178*). NACAA is the national association of air pollution control agencies in 54 states and territories and over 165 major metropolitan areas throughout the United States.

Currently, 145 petroleum refineries are operating in 33 states.<sup>1</sup> These refineries account for significant releases of pollution into the environment, including volatile organic compounds (VOCs); sulfur dioxide (SO<sub>2</sub>); nitrogen dioxide (NO<sub>x</sub>), particulate matter; carbon monoxide (CO), and toxic air pollutants. Reductions of emissions from existing sources are being successfully achieved by EPA's Refinery Initiative. Eighty-nine refineries in 26 states are now subject to pollution reduction agreements in consent decrees; negotiations are ongoing with additional refiners.<sup>2</sup> A strong New Source Performance Standard should build on and be informed by the experience of these refinery consent decrees, which have been joined by many state and local agencies, and which are being overseen and implemented by our refinery experts.

Section 111(b) of the Clean Air Act requires EPA to establish, and, as new technology is developed, revise the NSPS for categories of sources that cause, or contribute significantly to, air pollution that may reasonably be anticipated to endanger public health or welfare. The NSPS for the petroleum refinery sector were revised in 1984, when SO<sub>2</sub> limits were promulgated for fluid catalytic cracking units and fuel gas combustion devices. Standards for particulate

<sup>1</sup> Report of the EPA Office of Inspector General No. 2004-P-00021, "EPA Needs to Improve Tracking of National Petroleum Refinery Compliance Program Progress and Impacts," (June 22, 2004)

<sup>2</sup> [www.epa.gov/compliance/resources/cases/civil/caa/oil/index.html](http://www.epa.gov/compliance/resources/cases/civil/caa/oil/index.html)

matter, opacity, and CO were set in 1974. Considerable technological progress has occurred in the last decades and it is appropriate that EPA revise and supplement these standards. NACAA supports the revision of these NSPS standards and the addition of the new Subpart Ja standards for petroleum refineries.

As EPA points out, Section 111 requires that NSPS reflect the application of the best system of emission reductions that the Administrator determines has been adequately demonstrated, or Best Demonstrated Technology (BDT) (72 *Federal Register* 27179). The D.C. Circuit Court of Appeals has interpreted the standard with regard to cement plants: “[A]dequately demonstrated’ does not require that any cement plant now in existence be able to meet the proposed standards. Section 111 looks toward what may be fairly projected for the regulated future, rather than the state of the art at present, since it is addressed to standards for new plants...” *Portland Cement I*, 486 F. 2d 375 at 384 (D.C. Cir. 1973). The statute and judicial interpretation thus require EPA to look toward “the regulated future” in determining what emissions reductions have been adequately demonstrated.

NACAA supports some of the proposed revisions. Others, however, should be revised and strengthened to reflect emissions reductions that have been successfully demonstrated by refineries operating under consent decrees. The association encourages EPA to revise the proposed NSPS standards in accord with the following points so that the NSPS truly reflect what has been demonstrated to be the best emissions-reducing technology of the regulated future.

#### NO<sub>x</sub> Emissions from Fluid Catalytic Cracking Units (FCCUs) and Fluid Coking Units (FCUs)

FCCUs and FCUs typically are very large NO<sub>x</sub>-emitting sources that, if not subject to an adequate NSPS standard, will not be addressed by any other rule. One permitting authority has concluded that most FCCUs and FCUs have uncontrolled NO<sub>x</sub> emissions ranging from 120 to 160 ppmv.

EPA has proposed NO<sub>x</sub> emission limits for new, modified and reconstructed FCCUs and FCUs of 80 parts per million by volume (ppmv) on a seven-day rolling average basis, and has co-proposed no new NO<sub>x</sub> emission standard for FCUs and for modified and reconstructed FCCUs (72 *Federal Register* 27191-27192). NACAA believes that 80 ppmv for new units is too weak, and opposes the co-proposals of no NO<sub>x</sub> standard for FCUs and for modified and reconstructed FCCU units.

The 80 ppmv emission limitation flies in the face of the experience of the consent decrees, which have successfully required and achieved far lower NO<sub>x</sub> emissions reductions. Review of the consent decrees indicates that 30 out of 90 refinery FCCUs have either committed to NO<sub>x</sub> emission limits of 20 ppmv for the 365-day average and 40 ppmv for the seven-day average (“20/40” limits), or will install technology that will operate below the 20/40 ppmv limits. Moreover, in the experience of state and local agency refinery experts, those refineries that have installed appropriate control equipment not only meet, but frequently exceed, the 20/40 limits on a regular basis.

NACAA urges EPA to adopt a 20/40 NSPS for FCCU and FCU units. Permitting authorities have found that these limits are achievable by new units without additional controls. For modified or reconstructed units, the consent decree experience speaks for itself. We disagree with the analysis of feasibility and costs of retrofits in the proposed rule (*72 Federal Register 27191*). The fact that a third of the petroleum refinery sector that has entered into consent agreements with EPA, states, and localities are achieving these—and often lower—emissions with appropriate control technology is evidence that these levels are demonstrated and achievable, and should be promulgated as Best Demonstrated Technology (BDT). A BDT of 80 (or nothing at all) does not “look toward the regulated future” as required by *Portland Cement I* and other cases. A 20/40 NSPS represents an appropriate, achievable BDT.

#### Carbon Monoxide for FCCUs

EPA recommends maintaining the existing Subpart J standard of 500 ppmv over a one-hour average. However, the consent decrees are successfully requiring far lower CO emissions. NACAA recommends that this NSPS be 300 ppmv over a one-hour average. Our refinery specialists consider this to be a demonstrated and achievable level.

#### NO<sub>x</sub> Standards for New Process Heaters

EPA has proposed an NSPS standard for new process heaters of 80 ppmv for all heaters greater than 20 MMBtu (*72 Federal Register 27194*). NACAA believes that this standard should be revised to 30 ppmv. The state and local refinery experts believe that, based on their experience with refineries operating under federal and state consent decrees, 30 ppmv has been demonstrated to be an achievable level, and should be BDT. Ample technology exists that will enable new process heaters to achieve NACAA’s recommended level, including low NO<sub>x</sub> burners, ultra low NO<sub>x</sub> burners, and Selective Catalytic Reduction (SCR). Although the 30-ppmv standard should be the presumptive limitation, air agency personnel experienced with refineries may utilize existing regulatory tools to arrive at variations of this limit in cases posing unusual retrofit difficulties.

#### Flare Gas Recovery/Reduced Flaring

EPA proposes that elimination of routine flaring by use of fuel gas recovery, in-process fuel use, or system-wide flare gas recovery is determined to be BDT (*72 Federal Register 27195*). NACAA finds flare gas recovery to be effective and agrees that it will provide flexibility in achieving compliance. However, this approach should not preclude EPA from requiring monitoring, recording, record-keeping, and reporting for flare events. The association recommends that the work-practice NSPS include, in the words of the Preamble, “a simple requirement to monitor gas flow and composition of gases” that can be expected to reduce the use of flares (*72 Federal Register 27195*). As EPA points out in the proposed rule, such a requirement “led [in the South Coast jurisdiction] to reduced flaring as refinery operators, armed with the monitoring results, identified cost-effective flare gas minimization or recovery projects.” We oppose EPA’s suggestion of an exemption from a monitoring requirement when flare gas recovery systems are used. The NSPS should require both flare gas recovery and monitoring (of the sulfur rate and flow rate), record-keeping, and reporting.

EPA has requested comment on the need to monitor flares that have flare gas recovery systems to ensure that the flare gas recovery system is properly sized and that no routine flaring is occurring. NACAA supports this, but urges EPA to require the following as well: Flare Monitoring and Recording Plans to be submitted to the applicable permitting authorities for approval; Operation Monitoring and Recording Requirements (including type of flare, operating parameters, and specific measurement and recording of the sulfur rate and flow rate); and Testing and Monitoring Methods. EPA's proposal refers with approval to the Bay Area Air Quality District rule requiring flare monitoring in 2003, and the rule adopted to minimize flaring in 2006. EPA also references the 1998 South Coast Air Quality Management District rule requiring refineries to measure the flow rate and hydrocarbon content of the gases sent to a flare, and the 2005 amendment of the rule to require flare gas minimization. NACAA encourages EPA to use these rules and the Model Rule Developed for Petroleum Flares by the Mid-Atlantic Regional Air Management Association (MARAMA) as templates for the refinery flaring NSPS requirements.

#### Startup, Shutdown and Malfunction (SSM) Plans

NACAA has previously expressed serious concern about emissions from SSM episodes. The association stated that SSM events have the following impacts: They release toxic and carcinogenic chemicals; they are open and notorious; they are usually "off-the-books" and, therefore, hidden for compliance and emissions inventory purposes; they could exceed the total annual emissions for a facility; and they are largely avoidable.<sup>3</sup> EPA's Office of Enforcement and Compliance Assurance (OECA) agrees that SSM emissions are grossly under-reported, and has also stated that data about malfunction events are not easily accessible to the public. It has also been noted by OECA that the magnitude of refinery excess emissions is often two to three times the routine emissions reported.

In light of our continuing concerns about SSM emissions, NACAA supports EPA's proposal that BDT for petroleum refineries include a requirement for SSM plans that specifically address the minimization of fuel gas combustion of high sulfur-containing fuel gases during malfunctions of an amine treatment system, sulfur recovery plant (72 *Federal Register* 27196). The plan requirement should not be limited to malfunction of amine treatment systems, but should encompass any malfunction episode.

We oppose the co-proposal of no SSM plan requirement. EPA states:

*Flaring and direct venting of certain gas streams have been routinely used during planned start-up and shutdown of process units to quickly bring a process unit online or offline. These flaring and venting episodes have traditionally been exempt from any emission limitations. Nonetheless, some refineries have chosen to evaluate their start-up and shutdown procedures so as to reduce or eliminate direct venting or flaring during planned start-up and shutdown events.* (72 *Federal Register* 27196; emphasis added)

<sup>3</sup> NACAA comments dated September 12, 2005 on the SSM provisions in the reconsideration of the National Emission Standards for Hazardous Air Pollutants (NESHAP) (70 *Federal Register* 43991).

Those refineries that have chosen to reduce or eliminate emissions from startup and shutdown have demonstrated the best technology for the regulated future. Their actions represent BDT and should be adopted by EPA as the NSPS for all refineries.

With regard to malfunctions, NACAA believes that it is the rare malfunction event that could not have been prevented by vigilant maintenance of equipment and attention to operating procedures. Malfunctions should be included in the SSM plan requirements, as EPA has suggested, and root-cause analyses should be performed as a means to minimize them, as also proposed by EPA (72 *Federal Register* 27197). NACAA agrees that it is good air pollution practice to investigate the causes of upsets or malfunctions to determine how they can be prevented from recurring. State and local refinery specialists support root-cause analysis in the event of flaring and other venting releases of SO<sub>2</sub> in excess of 500 pounds in 24 hours. They also support root-cause analysis of flaring and other venting releases of VOCs greater than 500,000 cubic feet per day. Finally, although planning and analysis may reduce malfunction emissions, these steps should not preclude appropriate enforcement actions.

#### Proposed Limits for Sulfur in Fuel Gas

EPA has proposed an alternative concentration limit of 160 ppmv or less of hydrogen sulfide (H<sub>2</sub>S) or total reduced sulfur (TRS) in the fuel gas on a three-hour rolling average basis (as in the existing NSPS) and 60 ppmv or less H<sub>2</sub>S or TRS in the fuel gas on a 365-day rolling average basis. NACAA supports the addition of the long-term standard, but believes that an achievable BDT for this limit should be 100 ppmv for the three-hour average, and 40 for the 365-day average.

#### Greenhouse Gas Mitigation

Since the April 2, 2007 decision of the United States Supreme Court in *Massachusetts vs. EPA*, EPA is being held responsible for exercising its authority to regulate greenhouse gas emissions (“GHG emissions”). The Court found that EPA is not licensed to “shirk its environmental responsibilities” to regulate carbon dioxide and other GHG emissions, which pollutants “without a doubt” fit the statutory definition of “air pollutant” in the Clean Air Act. In light of this decision, NACAA believes that the NSPS for petroleum refineries should not ignore greenhouse gases, and that the agency should commit in this rulemaking to the timely proposal of a subsequent rulemaking requiring regulatory measures for the ultimate reduction of GHG emissions.

Two approaches that could be considered are 1) a requirement that petroleum refineries develop and implement on-site GHG Mitigation Plans and/or 2) specific requirements for GHG emissions reductions. One agency that is working on GHG reductions for two major refinery expansion projects has suggested that sources should be required to develop mitigation plans that include strategies for reductions of carbon dioxide at the refinery coupled with offsets for remaining project impacts in the surrounding county. Alternatively, specific mitigation measures could be required, such as retrofitting or replacing old process heaters; adding and improving heat exchangers; replacing existing cogeneration with higher-efficiency units and/or co-generation units; carbon sequestration (capture and export); replacement of other drivers

with high efficiency electric motors; implementation of other process efficiencies (e.g., control fouling in crude unit preheater train); and auditing of electricity and natural gas use by energy efficiency engineers to identify potential energy savings and energy efficiency improvements.

NACAA appreciates the opportunity to provide these comments on EPA's proposed rulemaking revising the NSPS for petroleum refineries. If you have any questions about these comments, or desire further information, please do not hesitate to contact one of us or Mary Stewart Douglas of NACAA.

Sincerely,



Bob Hodanbosi  
Co-Chair (Ohio)  
NACAA Permitting Committee



Ursula Kramer,  
Co-Chair (Tucson, AZ)  
NACAA Permitting Committee