

April 12, 2011

Lisa P. Jackson, Administrator  
U.S. Environmental Protection Agency  
Mail Code 6102 T  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460  
*Attention: Docket ID No. EPA-HQ-OAR-2008-0015*

*Re: National Ambient Air Quality Standards for Carbon Monoxide -- Proposed Rule*

Dear Administrator Jackson:

The Northeast States for Coordinated Air Use Management (NESCAUM) offer the following comments on the U.S. Environmental Protection Agency's (EPA's) Notice of Proposed Rulemaking (NPR), published on February 11, 2011 in the Federal Register, entitled *National Ambient Air Quality Standards for Carbon Monoxide* (76 FR 8158-8220). NESCAUM is the regional association of air pollution control agencies representing Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.

### **Level of the Standard**

EPA proposes to maintain the current primary National Ambient Air Quality Standards (NAAQS) for carbon monoxide (CO) of 9 parts per million (ppm) averaged over an eight-hour period and 35 ppm average over a one-hour period, maintaining the current form of the second highest annual value. NESCAUM concurs with EPA staff, through its Policy Assessment Document, and the Clean Air Scientific Advisory Committee (CASAC) that the CO NAAQS should be set at a level that is at least as protective as the current NAAQS.

We support the CASAC's statement that: "While measured concentrations infrequently reach the current NAAQS, evidence indicates that adverse health effects could occur at these levels. For that reason CASAC expresses its preference for a lower standard."<sup>1</sup> The NESCAUM states support the CASAC's preference for a lower CO NAAQS.

At this time, the available epidemiological studies do not clearly indicate a specific level for the one or eight-hour standard. Furthermore, the CASAC has expressed concern that the EPA may

---

<sup>1</sup> Letter from the Clean Air Scientific Advisory Committee to Lisa P. Jackson, U.S. Environmental Protection Agency, Subject: Review of the Policy Assessment for the Review of the Carbon Monoxide National Ambient Air Quality Standards (NAAQS): External Review Draft. EPA-CASAC-10-013, June 8, 2010, p.2 (*hereinafter* "CASAC CO NAAQS letter.").

have been overly dependent on a clinical study and may not have not fully considered the epidemiological studies in this review, indicating that:

The document continues to emphasize the use of %COHb [carboxyhemoglobin] as the optimal dose metric for assessing risk associated with CO exposure and its health consequences. However, the discussion of the epidemiological data should also consider non-hypoxia mechanisms. Increased COHb is important, but may not be the only mechanism for CO health effects.<sup>2</sup>

In this light, a lower standard perhaps based on alternative health endpoints, may be appropriate.

## Monitoring

EPA proposes establishing a near-road CO network at a subset of 77 NO<sub>2</sub> near-road sites, with a proposed siting threshold set at a Core-Based Statistical Area (CBSA) population of one million. The NESCAUM states have a number of comments on this proposal. It should be noted that, in the NESCAUM region, the 2009 eight-hour CO design values are no higher than 2.5 ppm, which is well below the current and proposed eight-hour NAAQS level of 9 ppm.<sup>3</sup> CO monitoring and emission inventory trends continue downward, even in the last few years, notwithstanding increases in vehicle miles traveled.<sup>4</sup>

Near-roadway network rationale: NESCAUM has concerns about EPA's rationale for the near-road CO and NO<sub>2</sub> networks. As currently designed (for NO<sub>2</sub>) and proposed (for CO), the network reflects a very limited segment of near-road exposures, given (1) the very rapid drop-off with distance from curb, especially for CO; and (2) the challenges of optimal site location. While we appreciate EPA's intent to gather sufficient data for states to assess potential elevated near-road exposures to CO, we question the appropriateness of the proposed threshold and approach.

Moreover, we agree with CASAC that a staged approach to deploying a near-road monitoring network is appropriate. The CASAC Ambient Air Monitoring and Methods Subcommittee (AAMMS) ranked CO third in its list of pollutants to be measured at near-road NO<sub>2</sub> sites, placing black carbon as a higher priority than CO.<sup>5</sup>

---

<sup>2</sup> CASAC CO NAAQS letter, p. 8.

<sup>3</sup> For 2009 CO design values, see: [http://www.epa.gov/airtrends/pdfs/CO\\_DesignValues\\_2009\\_FINAL.xls](http://www.epa.gov/airtrends/pdfs/CO_DesignValues_2009_FINAL.xls).

<sup>4</sup> For national CO trends from 1990-2009 at maintenance sites, see: [http://www.epa.gov/cgi-bin/broker?\\_service=data&\\_program=dataprog.aqplot\\_data\\_09.sas&parm=42101&stat=MAX2V&styear=1990&endyear=2009&pre=val&query=csv](http://www.epa.gov/cgi-bin/broker?_service=data&_program=dataprog.aqplot_data_09.sas&parm=42101&stat=MAX2V&styear=1990&endyear=2009&pre=val&query=csv)

<sup>5</sup> For the CASAC AAMMS letter, see: [http://yosemite.epa.gov/sab/sabproduct.nsf/ACD1BD26412312DC852577E500591B37/\\$File/EPA-CASAC-11-001-unsigned.pdf](http://yosemite.epa.gov/sab/sabproduct.nsf/ACD1BD26412312DC852577E500591B37/$File/EPA-CASAC-11-001-unsigned.pdf)

The CASAC AAMMS recommended:

The bulk of the sites could be more modestly equipped. For example, the modestly equipped sites would [also] include optical black carbon (as a surrogate for elemental carbon), carbon monoxide (CO), meteorology and ultra-fine particulate matter (PM) monitoring capabilities responsive to the needs for assessing attainment with the applicable standards and the extent of near-road pollution exposure, as well as for use in health studies.<sup>6</sup>

Given strained state and federal resources and higher public health priorities, NESCAUM urges EPA to consider reducing the size of the proposed near-road network.

National Core Monitoring Program (NCore) and CO Monitors: The NESCAUM states recommend that EPA locate near-road CO monitors near urban NCore CO sites. The most likely value of near-road CO measurements would be to allow estimates of the near-road pollutant concentration gradient over the first 100-200 meters from the highway. Pairing a near-road CO site with a relevant NCore CO site is therefore critical, as an urban background measurement would be needed to make these estimates.

Population Site Threshold: The NESCAUM states recommend that the population threshold be increased from one to 2.5 million. While this would lower the number of required monitors in the network by more than half, it would allow a more appropriate level of state resources to be targeted to this effort, while allowing for better understanding of potential health-relevant exposures to near-road CO.

Need for New Equipment: The older CO monitoring equipment from sites that are or could be shut down may not be appropriate for use at near-roadway sites. NESCAUM recommends that EPA explore the use of “True-Trace” instruments for deployment at near-roadway sites, and that older, non-trace, instruments be phased out of networks as soon as practical. This would also be consistent with EPA’s current NCore requirements.

Network Size: The NESCAUM states recommend that EPA act during this NAAQS review to appropriately downsize the CO network, which is presently composed of 345 sites nationally. The NCore and the proposed 77 near-roadway sites would comprise approximately 200 sites, of which a few are rural. Applying NESCAUM’s recommended population site threshold of 2.5 million, and recognizing the need for rural, urban and stationary source-oriented sites, would result in a national network of approximately 150 CO sites.

---

<sup>6</sup> CASAC AAMMS letter, p. iii.

Maintenance Sites: There are many CO sites currently required by maintenance plans that are no longer needed. These sites have consistently measured levels of CO well below the current NAAQS, and represent a resource drain in light of state budget constraints. The NESCAUM states urge EPA to develop a procedure that would allow states to shut down these sites earlier than the dates of existing agreements, as appropriate. This could be achieved using a simple approach, possibly based on existing design value data being below a chosen threshold. Given that the nature of the agreements varies widely from state to state and across EPA regions, it is desirable to have a consistent national approach to the expeditious closing these sites.

## Health Studies

The NESCAUM states support the appropriate use of monitoring data for health research studies. At this time, however, it is unclear how near-road CO data would be a useful tool in supporting this effort. In its proposal, EPA states:

Accordingly, we believe that proposing to require CO monitoring only in near-road NO<sub>2</sub> monitoring stations in CBSAs of 1,000,000 or more persons is a reasonable approach that results in a sufficient number of CO monitors near highly trafficked roads in urban areas to provide data for supporting the NAAQS, for use in health studies, for model validation, and to support multi-pollutant monitoring objectives.<sup>7</sup>

While these are important goals, it is uncertain how near-road CO data would be linked to surveillance data commonly relied upon for health studies (e.g., hospitals collect information about residence but not commuting history, and exposure estimates would be especially uncertain given the rapid change in CO levels over a short distance from the roadway). We request clarification on how the near-road CO data would be used to support health studies and whether there would be additional funding available to resolve some of the issues mentioned above. Further, we recommend that the EPA fund additional health studies, including epidemiological studies, to assist in identifying the most sensitive health endpoints and in establishing appropriate levels of the CO NAAQS in the next review.

In addition, the NESCAUM states request that EPA examine the current literature on in-cabin exposures to CO, and assess possible courses of action that would protect the health of vehicle drivers and occupants. EPA should work toward better understanding the broad range of CO exposures (including in-cabin) as well as whether and how the NAAQS addresses such a broad range of exposures. While we understand that this is not specifically part of the Clean Air Act, current research suggests that in-cabin CO may be significantly higher than ambient levels, and may be a main route of CO exposure. Further, additional research to investigate the types of on-road CO exposures (e.g., vehicle-specific, or location-dependent, traffic density-dependent, vehicle miles traveled-dependent), will assist in a comprehensive understanding of all sources of

---

<sup>7</sup> 76 FR 8193

CO exposures and health risk.

If you or your staff has any questions regarding the issues raised in these comments, please contact Leah Weiss of NESCAUM at 617-259-2094.

Sincerely,

A handwritten signature in cursive script, appearing to read "Arthur N. Marin".

Arthur N. Marin  
Executive Director

Cc: NESCAUM Directors  
Lydia Wegman, EPA OAQPS  
Deirdre Murphy, EPA OAQPS  
David Conroy, EPA Region 1  
William S. Baker, EPA Region 2