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May 23, 2014

Dr. H. Christopher Frey
Chair, EPA Clean Air Scientific Advisory Committee
Distinguished University Professor
Department of Civil, Construction, and Environmental Engineering
North Carolina State University
Raleigh, NC 27695-7908

Dear Dr. Frey:

In January 2015, pursuant to a court imposed deadline, the Environmental Protection Agency (EPA) is expected to propose revisions to the current National Ambient Air Quality Standard (NAAQS) for ozone set in 2008. The agency's proposed revisions may well represent the most costly standards the agency has ever sought to impose on the U.S. economy. The Administrator's judgments about the adequacy of the standard and any such proposed revisions accordingly will be subject to close Congressional oversight and scrutiny. A critical question will concern whether the Administrator has fully and clearly evaluated the risk reduction estimates associated with the standard and proposed alternatives.

The Clean Air Scientific Advisory Committee's (CASAC) by statute serves to review the information supporting EPA's assessment of the existing NAAQS for ozone and to help assure that EPA conducts a full and objective evaluation of risks and risk tradeoffs in its proposals. In the context of this review, given the potential costs and impacts of any revision to the current standard, I believe it is critically important that such risks and risk tradeoffs are fully evaluated.

Presently, EPA appears to be moving forward without fully addressing important risk tradeoff questions regarding the impact of emissions reductions of nitrogen oxides (NOx), which CASAC has also been reviewing, on ozone concentrations. I write today to draw your attention to concerns that have been raised that EPA has not fully evaluated the risk reduction outcomes identified in the agency's risk assessments used for the upcoming proposed rule.

I understand that, due in part to recommendations by CASAC, EPA's new draft *Health Risk and Exposure Assessment for Ozone* (HREA) concludes that "mortality from short- and long-term [ozone] exposures and respiratory hospitalization risk is not greatly affected by meeting lower standards."¹ According to the HREA, this is due in part to the fact that further

¹ EPAdraft *Health Risk and Exposure Assessment for Ozone* (HREA) at 9-46.

reductions in nitrogen oxides (NOx) emissions will actually *increase* ozone levels on low concentration days in urban areas where at-risk populations live.

For instance, in modeling a 50 percent reduction in NOx emissions from existing levels, the HREA found that April-to-October ozone exposures actually increased for large percentages of exposed populations in several major urban areas where at-risk populations are likely to live, including New York, Detroit, Los Angeles, and Chicago.² In other words, even though reducing NOx emissions may yield direct benefits by reducing NOx related health effects, they may also lead to increased ozone levels – the issue under review by the CASAC Ozone Review Panel.

If EPA is correct to assume that all ozone exposures should be of concern, any increases in ozone exposure throughout the year are important to assess. However, testimony submitted to CASAC this past March³ notes that EPA's analysis likely underestimates the potential for increases in ozone exposures because the agency does not evaluate the effect of NOx emission reductions on ozone levels throughout the full year.⁴ Specifically, EPA's analysis of epidemiologically-based short-term mortality and morbidity risks fails to consider the likely increases in ozone levels during the cooler months of the year when NOx emissions are reduced. This March testimony reported that such a full year-round analysis of the impact of NOx emission reductions in urban Philadelphia resulted in increases in total ozone exposures.

The EPA's analysis itself notes that wintertime increases in ozone “were significant in 11 out of the 15 areas” evaluated⁵ when nationwide NOx emissions were cut “almost in half,”⁶ but fails to address how increases in wintertime ozone levels from further NOx reductions will affect the proposed health benefits of meeting a lower ozone standard. Potential changes in wintertime ozone levels also pose a problem for EPA's assessment of mortality risks from long-term exposure to ozone.⁷

In light of these shortcomings in analysis, we ask that you recommend that EPA conduct a full year-round analysis of the effect of further NOx emission reductions on the epidemiologically-based, short-term mortality and morbidity health benefits from meeting a lower ozone standard. This should be done in a manner that clearly distinguishes between exposure changes projected for urban, suburban, and rural portions of each of the Urban Study Areas. In addition, EPA should provide a discussion of the limitations of projecting future mortality risks from long-term exposure given that the epidemiological study used did not account for potential differences in wintertime ozone levels.

Finally, I understand that transcripts of your public proceedings may not always be preserved for future public access and review. If this is the case, I ask that you ensure that

² Ibid., at page 8-71.

³ Comments to CASAC on the 2nd Draft of Health REA, Welfare REA, and PA for Ozone, Nicole Downey, Ph.D., Earth Systems Sciences, LLC, March 13, 2014

⁴ Except Houston, Los Angeles and Sacramento, which monitor ozone from January to December.

⁵ HREA at page 8-55.

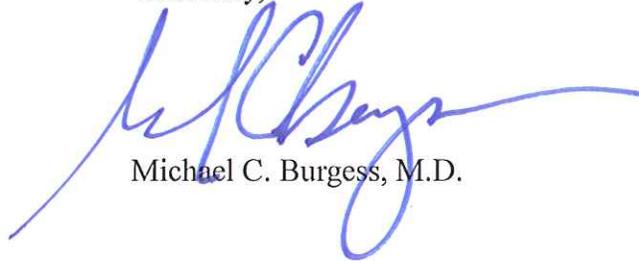
⁶ Ibid., at page 8-50.

⁷ In estimating the mortality risk from long-term ozone exposure, EPA appears to rely upon one study that correlates relative mortality risks (inherently year-round) with partial year, *i.e.* April to September, ozone levels.

CASAC preserve a full transcript or recording of the telephone conference and related public deliberations for future public access and review.

Thank you for your attention to this request.

Sincerely,

A handwritten signature in blue ink, appearing to read "M. C. Burgess", with a long horizontal flourish extending to the right.

Michael C. Burgess, M.D.