

Written Testimony Presented to the
Committee on Oversight and Government Reform
at a hearing on the process of the EPA
in setting the new ozone national ambient air quality standards

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Thank you for asking me to testify before your committee. I am Dr. Rogene Henderson, a Senior Scientist Emeritus at the Lovelace Respiratory Research Institute, an independent, not-for-profit research organization in Albuquerque, NM. I am a National Associate of the National Academies of Science.

I am testifying today as the current Chair of the United States Environmental Protection Agency's Clean Air Scientific Advisory Committee (CASAC), a congressionally-mandated committee that advises and makes recommendations to the EPA Administrator concerning the need and scientific basis for setting national ambient air quality standards (NAAQS) for six criteria air pollutant categories: particulate matter (PM_{2.5} and PM₁₀), ozone and other photochemical oxidants, lead, NO_x, SO_x and CO. There are seven chartered members of the CASAC, appointed by the Administrator of the EPA. The CASAC is supplemented for consideration of each pollutant by a panel of approximately 15 additional experts in the field to provide the broad scientific expertise needed. The panel members are appointed by the Director of the Science Advisory Board staff. All members of the CASAC and the supplementary panels are thoroughly vetted for their scientific qualifications and for any potential conflicts of interest. A list of members of the ozone panel, including chartered CASAC members, is provided as Attachment A. All future references to the ozone panel in this document include both the chartered members and the members of the supplementary panel.

The question addressed by the ozone panel was the same as for any criteria pollutant: First, in light of newly available information, does the current primary standard protect public health with an adequate margin of safety? If not, what revisions are appropriate in terms of indicators, averaging times, levels and forms? Second, in light of newly available information, does the current secondary standard protect public welfare (including vegetation and ecosystems) from any known or anticipated adverse effects?

The process for the review of the ozone standards began in May, 2005 with a face to face meeting of the panel to review the criteria document developed by the National Center for Environmental Assessment (NCEA) that contained all the information known about the atmospheric physics and air quality of ozone as well as its human health effects and environmental/welfare effects. A second draft of this document was reviewed in December, 2005, and final advice was provided in May, 2006.

Meanwhile, the panel provided advice to the air office staff (OAQPS) via consultations on their draft ozone health assessment plan (May, 2005) and on their draft ozone environmental assessment plan (October, 2005). The first draft of the Staff Paper was reviewed by the panel in December 2005 and subsequent drafts were reviewed in August, 2006 and March, 2007.

I give you these details so that you may know that a great amount of time and effort on the part of Agency staff and CASAC goes into the periodic review of each NAAQS, including ozone. All of the above meetings were conducted in public with available time set aside for public comment. Highly productive discussions were held between EPA staff, the public, and CASAC.

A major product of these extended discussions was the unanimous recommendation from the ozone panel that, in light of newly available information, the current primary standard was NOT protective of public health with a margin of safety and should be lowered from a level of 0.08 ppm to a level of between 0.060 to 0.070 ppm or 60-70 ppb. CASAC also recommended changing the reporting of the standard to include the third decimal place when the level was given in ppm, because newer monitoring techniques allow more accurate measurements of ozone. Note that the recommendation of CASAC was in terms of a range. There is enough uncertainty at this low a concentration of ozone that CASAC can only recommend a range of values they consider to be protective of public health with a margin of safety. It is a policy decision for the Administrator to determine where within that range to set the standard.

The scientific advice offered to the Administrator was not fully accepted. The primary standard was lowered but only to 75 ppb, outside the recommended 60-70 ppb range. Members of the CASAC ozone review panel were pleased that the administrator lowered the current standard, but do not endorse the new standard as being sufficiently protective of public health with a margin of safety as explicitly required by the Clean Air Act.

The setting of the secondary standard, which is to protect the public welfare, including vegetation and ecosystems, has been problematic in the past because of lack of appropriate scientific information. Although separate secondary standards to protect welfare have been used in the past (see 1971 standards for PM and SO₂), lack of data has usually resulted in the default option of setting the secondary standard to be the same as the primary standard. In the recent review of the ozone secondary standard, the panel was in unanimous agreement that we now have enough new information to be able to set a cumulative, seasonal secondary standard rather than to default to using the primary standard. It is both common sense and fully justified scientifically to set a secondary standard separate from the primary standard, since, unlike humans, vegetation is affected by ozone only during the growing season and during daylight hours. The cumulative level recommended by CASAC was between 7 and 15 ppm-hours. The level recommended by the EPA staff and the Administrator was higher, 21 ppm-hr.

At the time of the proposed ruling in July 2007, CASAC, the ozone panel, the EPA staff and the Administrator, were all in agreement that current knowledge was sufficient to scientifically justify consideration of the option to use a different form and averaging time for the secondary standard.

Nevertheless, on March 6, 2008, a week before the deadline for the Administrator to announce the Final Rule for the ozone standards, Ms Dudley of the OMB sent a note to Administrator Johnson saying the form of the secondary standard should not be changed .for two major reasons: The suggested change was too narrowly focused on the effect of ozone on vegetation and forests and the secondary standard would not be more protective than the primary standard.

The memo from Ms Dudley showed an apparent lack of familiarity with the Clean Air Act and each of her points was clearly refuted in a knowledgeable, well-written memo in defense of the change in the form of the secondary standard in a memo sent to Ms Dudley on March 7, 2008 by Deputy Administrator Marcus Peacock. Finally, Ms Dudley stated in a memo dated March 13 that President Bush had decided against

having a secondary standard that was different from the primary standard. In defense of this decision White House spokesman Tony Fratto said the decision was based on following the law. There is no law against using a different form for setting the secondary standard, as evidenced by a reading of the Clean Air Act and by the precedents set in 1971 when separate secondary standards were set for both PM and SO_x (copies of the Dudley and Peacock memos are in Attachment B).

The apparent last minute scramble to prevent enactment of the new form for the secondary standard is perplexing. The level of the standard recommended by the Administrator (21 ppm-hr) was well outside the range of the CASAC recommendation (7-15 ppm-hr) and thus was weak enough that, if enacted, would not have resulted in any new non-attainment areas. Thus OMB ignored the policy issue of what the level of the standard should be and chose to object to the form of the standard, which is a scientific issue best addressed by CASAC. CASAC has often been accused of wandering from scientific issues into policy. In this case, policy makers wandered into scientific issues and they did not do it well. **Willful ignorance triumphed over sound science.**

This is not the first time the Administrator has not accepted the scientific advice of his own advisory committee. In October, 2006, the level of the PM_{2.5} standard was set outside the range recommended by the CASAC and its PM panel. The Administrator is the one who decides where to set the standard and CASAC's role is only advisory in nature. However, if the Administrator sets the standard outside the range recommended by CASAC, a strong reason for doing so should be given. In the case of the PM standard he said he based his judgment on the "best scientific advice available" and because of a degree of uncertainty on the PM panel and in the data. For the ozone standards, for which there was unanimous agreement on advice from CASAC, he emphasized that he used his own judgment to go outside the range recommended by CASAC.

Congress may wish to ask, on whose advice is the Administrator making his judgments? The Clean Air Act mandates that one source be CASAC. The work of CASAC is done in public by vetted members of the group. The basis of their advice is transparent. However, advice that appears to be trumping that of the CASAC is not transparent. The CASAC knows that the process for standard setting involves an interagency review at several points toward the end of the process (see attached diagram of the review process). One agency's review, that of the OMB, became apparent in the recent setting of the secondary ozone standard. In essence the OMB and the White House set the standard, even though theoretically it was set by the EPA Administrator. Thus, all the work that went into the recommendation of

standards by the scientific experts on the CASAC ozone panel and by the EPA staff, and even by the EPA Administrator, was for naught. The standard was set by others, who evidently did not fully understand the Clean Air Act nor its precedents.

As Dr. Gilman, former Assistant Administrator for Research and Science Advisor for the EPA, stated before a recent hearing of the Senate Committee on Environment and Public Works, “Our best insurance that the science, the scientific judgment and policy-making are as good as they can be is that the process is transparent, participatory, peer reviewed and followed with informed oversight.” Setting the standards by fiat behind close doors is not in our best interests.

Even more alarming is **the removal of science** in the implementation of the new NAAQS Review Process (see Attachment C). The initial part of the revised process is responsive to suggestions made by CASAC. The process begins with a workshop to discuss new, policy-relevant scientific information pertinent to decisions concerning the health and welfare protectiveness of the current NAAQS. This is followed by development of an integrated plan for the review process and an integrated science assessment describing the potential health or welfare effects of the low levels of the pollutants based on the workshop findings. There is also an exposure/risk assessment document that describes the degree of exposure that can be expected and the associated risks. All of these documents are thoroughly reviewed by the CASAC panels and the EPA staff has been responsive to the advice given by CASAC on these documents.

But the final parts of the new NAAQS review process have not proved to be acceptable. One of the most critical documents to be reviewed by CASAC is the Staff Paper. In this document the Agency staff summarizes the air quality information, the policy-relevant assessment of health and welfare effects, the information on exposures to the pollutant and the characterization of health (or welfare) risks. Then a list of staff conclusions and recommendations for options that might be considered in setting a new NAAQS or maintaining the current NAAQS is given. The scientific justification for each option is fully described. In the new review process this critical document is replaced with a Policy Assessment document, to be published as an ANPR. The Policy Assessment document is described in a memo from Deputy Administrator Peacock on April 17, 2007, as containing essentially the same information as the Staff Paper, but with management concerns added. In the recent NAAQS review for lead, the CASAC saw its first Policy Assessment document in the form of an ANPR. The members of CASAC were shocked and dismayed that the ANPR contained none of the information in a Staff Paper. Instead of the carefully thought-out and scientifically justified list of options seen in the Staff Paper, the ANPR was a light weight announcement of

proposed rulemaking as its name implies (Advanced Notice of Proposed Rulemaking). It was the type of document that one would publish at the beginning, not the end of a rule-making review process. The CASAC felt deceived by the contrast between the ANPR and the Policy Assessment document described in Deputy Administrator Peacock's memo. A strong letter expressing the total inadequacy of the document was sent to the Administrator on January 23, 2008, but no response has been given. A phone call from Mr. Peacock indicated that we should hear something by the end of April or May, but we have not.

It is essential that the Staff Paper or its equivalent be restored to the NAAQS review process. The scientific analysis of the data performed by the Agency staff must not be hidden from the CASAC. Obscuring science from the science advisory group cripples the ability of the CASAC to perform its congressionally mandated duties.

Finally, in looking to the future, there is a need to address the extremely difficult problem of considering air quality on a multi-pollutant basis, rather than one pollutant at a time. No one breathes one pollutant at a time. We all inhale mixtures of pollutants which interact in a complex manner, both in the atmosphere and in our bodies. I would recommend that a blue-ribbon committee be appointed by the National Academies of Science to recommend a means of assessing and managing the risk of air pollutants on a multi-pollutant basis. When we have adequate information on how we might achieve such a goal, we will need to revise the Clean Air Act to emphasize a multi-pollutant approach.