

**Summary Minutes of the
U.S. Environmental Protection Agency
Clean Air Scientific Advisory Committee (CASAC)
Public Teleconference
April 8, 2010 (10:00 am – 12:00 pm, Eastern Time)
April 9, 2010 (10:00am – 12:00pm, Eastern Time)**

CASAC Members: Dr. Jonathan Samet, Chair
Dr. Ted Russell (April 8 only)
Dr. Christopher Frey (not present)
Dr. Joe Brain
Dr. Donna Kenski (April 8 only)
Dr. Helen Suh
Dr. Kathleen Weathers (April 9 only)

CASAC Particulate
Review Panel Members: Dr. James Crapo
Mr. Ed Avol
Dr. Morton Lippmann
Dr. Phil Hopke
Dr. Joseph Helble
Dr. Kent Pinkerton
Dr. Wayne Cascio
Dr. David Grantz
Dr. Robert Phalen
Dr. Sverre Vedal
Dr. Frank Speizer
Mr. Tom Moore
Dr. Rogene Henderson
Dr. William Malm
Mr. Rich Poirot

Purpose: To review the *Policy Assessment for the Review of the Particulate Matter NAAQS* (First Draft, March 2010). The Panel also reviewed draft letters on *Quantitative Health Risk Assessment for Particulate Matter* (February 2010) and *Particulate Matter Urban-Focused Visibility Assessment* (January 2010).

Designated Federal Officer: Dr. Holly Stallworth, Designated Federal Officer

Other EPA Staff: Lydia Wegman, Karen Martin, Beth Hassett-Sipple, Pradeep Rajan, Scott Jenkins, Zach Pekar, Vicki Sandiford, Meredith Lassiter, Bryan Hubbell, Marc Pitchford (NOAA), Lillian Bradley, Alex MacPherson, Steve Silverman, Lindsay Stanek, Jen Richmond-Bryant, Mary Ross, Barbara Buckley, Erin Hines, Doug Johns, Tom Luben, Steve Dutton, Jason Sacks, Greg Miller

Public: Ted Steichen (American Petroleum Institute), John Jansen (Southern Company), Ashley Lion (National Cattleman's Beef Association), Jay Turim (American Chemistry Council), Julie Goodman (Gradient Corporation, on behalf of American Petroleum Institute), Dave Heinold (AECOM, on behalf of American Petroleum Institute), Denise Kennedy (National Cattleman's Beef Association), Deborah Shprentz (American Lung Association), Nick Moustakas (Health Effects Institute), Carol Salughter (Institute of Clean Air Companies), Larry Gephart (ExxonMobil Biomedical Sciences), Molly Davis* (Inside Washington Publishers), Lucinda Langworthy* (Hunton and Williams LLP), Sonja Sax* (Gradient Corporation), Kurt Blasé*(Blasé Group), Doug Austin* (Institute of Clean Air Companies), Scott DiBiase* (Pinal County Air Quality).

Meeting Materials and Meeting Webpage:

The materials listed below may be found on the meeting webpage at:

<http://yosemite.epa.gov/sab/sabproduct.nsf/bf498bd32a1c7fdf85257242006dd6cb/a9a9ed9bb9ce692f852576be0066a622!OpenDocument&Date=2010-04-08>

- Agenda
- Federal Register Notice
- Charge Memo on the Policy Assessment for the Review of the Particulate Matter National Ambient Air Quality Standards -- First External Review Draft (March 2010).
- Committee Members' Comments:
 - 4-7-10 Compendium of Preliminary Individual Comments on Particulate Matter Policy Assessment
- Draft CASAC letters:
 - 3-30-10 Deliberative Draft Letter on the Health Risk Assessment for Particulate Matter
 - CASAC Advice on Particulate Matter Urban-Focused Visibility Assessment – Second External Review Draft (January 2010) (March 24, 2010 Draft)

Meeting Summary

The discussion followed the plan presented in the meeting agenda.

THURSDAY, APRIL 8, 2010

Dr. Stallworth convened the meeting and explained that CASAC operates under the Federal Advisory Committee Act.

Dr. Samet and other CASAC members and panelists on the call approved both draft letters without changes. The following five public commenters were then each given 3 minutes to speak.

* These individual requested the call-in number but could not be heard announcing themselves on the call.

Mr. Jay Turim of the American Chemistry Council presented comments that were critical of EPA's conclusion that the current PM_{2.5} standard should be lowered based on inconsistencies between studies and other uncertainties. Dr. Julie Goodman presented comments on behalf of the American Petroleum Institute that also highlighted sources of uncertainty that weakened the presumed causal relationship between PM_{2.5} and health effects. Mr. Dave Heinold, also representing the American Petroleum Institute, said the *Policy Assessment* did not address sky discoloration, a factor that influences urban visibility, or the role of exposure and direction in determining the effects of reduced visibility on public welfare. Ms. Denise Kennedy, on behalf of the National Cattleman's Beef Association, voiced support for retaining the existing PM₁₀ standard. Deborah Shprentz, on behalf of the American Lung Association, cautioned against choosing an annual fine particle standard of 13 µg/m³ and a 24-hour standard of 35 µg/m³ as inadequate to protect public health, especially seasonal exposures to fine particles.

Panelists then turned their attention to discussion of the charge questions. Although panelists generally agreed that the *Policy Assessment* appropriately framed the policy questions, they expressed concerns that it was too long, too repetitive and very difficult to read. In addition, the Agency was encouraged to be more explicit about its underlying algorithm for making decisions in the face of the evidence available to address the sequence of questions posed in the *Policy Assessment*. Although panelists agreed with the *Policy Assessment's* conclusion that the evidence provided support for revising the standards, panelists asked EPA to provide a clear rationale for its decision to use the interquartile range to bound scenarios of particulate matter levels. In addition, some panelists cautioned against over-reliance on the Krewski (2009) study which estimated a lower dose-response coefficient for PM_{2.5} than some of the other studies.

Panelists talked about the need for broader thinking for the future in terms of research needs and how to gather scientific evidence on the whole gamut of particles, sizes and components. For example, more data was needed to determine the basis for an ultrafine standard as well as to refine a coarse standard. Panelists lauded the possibilities offered by GIS technologies and speciation data.

On spatial averaging of monitor data, panelists agreed that additional analyses may be helpful in informing the Administrator's decision, e.g., correlating socio-economic status with the location of highest monitors. On averaging times, panelists agreed the 24-hour and annual averaging times continued to be inappropriate. On levels, panelists suggested EPA needed to develop a rationale for how low to go in considering standards in the face of an assumed no threshold, linear dose-response curve. Broadly speaking, EPA's choice of alternate standard levels was considered appropriate while recognizing that benchmarks would be preferable to know what percent of the population was -exposed beyond the NAAQS for any given standard.

Panelists voiced support for a thoracic coarse standard, but discussed the problems of choosing PM₁₀ or PM_{10-2.5} as the indicator. There was strong agreement on the need to collect the data on PM_{10-2.5} concentrations and composition in order to make a better

assessment for a thoracic coarse standard for the next NAAQS review. Given the absence of information on differential toxicities, most panelists thought it was generally prudent to maintain the current PM₁₀ standard on the assumption that urban coarse is more harmful than non-urban. Panelists called for better speciation data to support a coarse thoracic standard. One panelist noted that there is a greater component of PM_{2.5} in urban coarse than in rural coarse particles. Panelists questioned whether the level of the current PM₁₀ standard was adequately protective against exposures to thoracic coarse particles.

Support was voiced for the annual and 24-hour averaging times for thoracic coarse particles as well. Panelists were supportive of using a percentile form for the standard as a more stable metric for determining compliance. However, with respect to using the 98th percentile for a revised 24-hour standard meant to protect against short-term exposures to thoracic coarse particles, one panelist expressed a need for clarification for what would be eliminated by a 98th percentile versus other percentiles, e.g., 90th percentile. Extreme dust storms, for example, might be eliminated by a 98th percentile but it would not be clear what would be eliminated by a lower percentile.

With respect to selecting the level for a PM₁₀ standard, panelists alluded to a “promissory note” from EPA to do the analyses to recommend a coarse standard. Panelists also voiced the need for parallel criteria to determine the “stopping point” in selecting a level for a thoracic coarse standard and for more clarification for selecting the interquartile range of particles for assessing risks and determining the standard.

As four hours had expired, Dr. Samet requested a resumption of the call on the following day, April 9, 2010, to cover the visibility issues in the *Policy Assessment*. Before the call concluded, Dr. Stallworth requested that lead discussants provide revised responses to charge questions by April 15, 2010.

FRIDAY, APRIL 9, 2010

Panelists resumed discussion of the charge questions on the *Policy Assessment*, beginning with the question on the indicator for a visibility standard. Panelists spoke about the advantages of a light extinction indicator, specifically that it directly measures a physical property of ambient aerosols and it directly measures the effect. One panelist said the initial secondary standard should use light extinction by PM_{2.5} particles alone given the significant problems of measuring light extinction from other particle sizes. Another panelist said another way to deal with this problem would be to utilize continuous PM₁₀ and PM_{2.5} mass and, taking the difference between the two, and applying a generic extinction efficiency factor. Another panelist talked about cycling between PM₁₀ inlet and PM_{2.5} inlet with a single instrument. Some panelists suggested that visibility impacts would be different under a light extinction standard as compared to a mass concentration standard.

One panelist mentioned the public education benefit of a light extinction indicator while another panelist suggested the PM_{2.5} standard would have to be much lower than the PM

level that would be implied by the light extinction standard. Panelists discussed the need to see how sources would change between a mass concentration and a light extinction indicator along with different percentiles and harkened back to a call for such analyses in the previous CASAC letter on the first draft Urban-Focused Visibility Assessment.

One panelist said that if the goal is to allow people to see better, then EPA should directly measure what people see (light scattering). Support was voiced for a one-hour averaging time. Some concern was raised with respect to the upper bound concentration levels considered in the *Policy Assessment* ($50 \mu\text{g}/\text{m}^3 - 60 \mu\text{g}/\text{m}^3$) as too high. Panelists discussed the advantages and disadvantages of using the single worst hour of the day or using a certain percentile of all the daylight hours, while expressing the need for additional data to determine the mix of aerosols and sources associated with each approach.

With respect to the proposed levels and forms for different indicators (light extinction and PM_{2.5} mass-based indicators), one panelist said the proposed range of levels is too large and that an alternative standard should be lower than the primary standard if it is to have any effect.

Dr. Martin said that OAQPS would revisit the schedule for a second draft Policy Assessment given that the original plan was looking unduly optimistic. Before the call concluded, Dr. Stallworth requested revised comments from lead discussants by April 16, 2010. She also indicated the Panel would teleconference again in early May to review the draft letter on the *Policy Assessment*.

On Behalf of the Committee,
Respectfully Submitted,

Holly Stallworth, Ph.D. /s/
Designated Federal Officer

Certified as True:

Jonathan Samet, M.D. /s/
Chair, Clean Air Scientific Advisory Committee
Sulfur Oxides Primary NAAQS Review Panel

NOTE AND DISCLAIMER: The minutes of this public meeting reflect diverse ideas and suggestions offered by committee members during the course of deliberations within the meeting. Such ideas, suggestions, and deliberations do not necessarily reflect definitive consensus advice from the panel members. The reader is cautioned to not rely on the minutes represent final, approved, consensus advice and recommendations offered to the Agency. Such advice and recommendations may be found in the final advisories, commentaries, letters, or reports prepared and transmitted to the EPA Administrator following the public meetings.