

**U.S. Environmental Protection Agency
Clean Air Scientific Advisory Committee (CASAC)
CASAC Particulate Matter (PM) Review Panel**

**Summary Meeting Minutes of the CASAC PM Review Panel
Public Advisory Teleconference**

Thursday, August 11, 2005 – 1:00 to 5:00 p.m. Eastern Time

EPA Science Advisory Board (SAB) Staff Office, Washington DC

**CASAC Particulate Matter (PM) Review Panel Teleconference to
Review the Review the EPA Staff Recommendations Concerning a Potential
Thoracic Coarse PM Standard in the Final PM Staff Paper**

Panel Members: See CASAC PM Review Panel Roster – Appendix A

Agenda: See Meeting Agenda – Appendix B

Purpose: The purpose of this public teleconference meeting was for the CASAC Particulate Matter (PM) Review Panel to review the Agency staff recommendations concerning a potential thoracic coarse PM standard in the Final PM Staff Paper.

Attendees: Chair: Dr. Rogene Henderson

CASAC Members: Dr. Ellis Cowling
Dr. James Crapo
Dr. Frederick Miller
Mr. Richard Poirot
Dr. Frank Speizer
Dr. Barbara Zielinska

Panel Members: Dr. Philip Hopke
Dr. Allan Legge
Dr. Paul Lioy
Dr. Morton Lippmann
Dr. Joe Mauderly
Dr. Roger McClellan
Dr. Gunter Oberdorster
Dr. Robert Rowe
Dr. Jonathan Samet
Dr. Sverre Vedal
Mr. Ronald White
Dr. Warren White
Dr. George Wolff

EPA SAB Staff: Mr. Fred Butterfield, CASAC Designated Federal Officer (DFO)

Other EPA Staff: Tim Benner, ORD, OSP
 John Chamberlin, OA, OPEI
 Libby Faulk, EPA Region 8
 Gerald Gleason, OGC, ARLO
 John Hannon, OGC, ARLO
 John Langstaff, OAR, OAQPS
 Karen Martin, OAR, OAQPS
 Linda Miller, EPA Region 3
 Harvey Richmond, OAR, OAQPS
 LaKeshia Robertson, EPA Region 3
 Mary Ross, OAR, OAQPS
 Steve Silverman, OGC, SWERLO
 Lydia Wegman, OAR, OAQPS

Meeting Summary

The discussion followed the issues and general timing as presented in the meeting agenda (Appendix B).

Convene Meeting, Call Attendance, Introduction and Administration

Mr. Fred Butterfield, Designated Federal Officer (DFO) for the CASAC, opened the meeting and the teleconference line, called attendance, and welcomed all attendees. He noted that the CASAC is a Federal advisory committee chartered under the Federal Advisory Committee Act (FACA) to provide advice and recommendations to the EPA Administrator. Consistent with FACA regulations, its deliberations are held as public meetings and teleconferences for which advance notice is given in the *Federal Register*. The DFO is present at all such meetings to assure compliance with FACA requirements. He mentioned that there were seven (7) individuals who had signed-up in advance to provide an oral public statement today. Mr. Butterfield said a transcript of this teleconference is not being taken; however, summary minutes were taken (by the DFO) for this teleconference meeting. The minutes will be certified by the CASAC (and PM Review Panel) Chair and made available on the SAB Web site (<http://www.epa.gov/sab>). All Panelists have earlier submitted documentation with respect to possible financial conflicts-of-interest, which was reviewed by a SAB staff member prior to the meeting and found to be satisfactory.

Purpose of Meeting and Welcome

Dr. Rogene Henderson, CASAC and PM Review Panel Chair, welcomed Panel members and briefly stated the purpose of the meeting (see above).

Public Comment Period

Mr. Butterfield, CASAC DFO, facilitated the formal public comment period. (See Appendix C for a summary listing of all public speakers; copies of public commenters' oral statements are located in the FACA file for this meeting.) PM Panel members were permitted to ask follow-up questions after each public speaker had finished delivering his or her oral public statement.

Summary of the CASAC PM Review Panel's Discussion Regarding its Review of EPA Staff Recommendations Concerning a Potential Thoracic Coarse Particulate Matter Standard in the Final PM Staff Paper

The PM Panel focused its review of Agency staff recommendations concerning a potential thoracic coarse (PM_{10-2.5}) standard in the Final PM Staff Paper by asking whether, overall, EPA has been responsive to the previous advice and recommendations of the CASAC; and, more specifically, whether Panel members have any additional recommendations on the conclusions of the Final PM Staff Paper with respect to:

- a. Replacing the current primary PM₁₀ standards with an *indicator* of urban thoracic coarse particles (*i.e.*, UPM_{10-2.5})?
- b. Retaining a *24-hour averaging time* for a UPM_{10-2.5} standard to protect against health effects associated with short-term exposure periods, with consideration given to the use of either a 98th or 99th percentile *statistical form*; and, furthermore, to Staff's choosing not to retain an annual averaging time for protection against such health effects?
- c. Setting a 24-hour UPM_{10-2.5} standard with a *level* in the range of approximately 50 to 70 $\mu\text{g}/\text{m}^3$, 98th percentile form, or approximately 60 to 85 $\mu\text{g}/\text{m}^3$, 99th percentile form?

Major points from PM Panel members' deliberations with respect to this review include the following:

- With regard to the question of whether to replace the current primary PM₁₀ NAAQS with an indicator of urban thoracic coarse particles, there was general agreement among the members of the PM Panel that there was a need for a specific primary standard to address particles in the size range of 2.5 to 10 microns, as the Agency staff recommended in the Final PM Staff Paper. While Panel members agreed with the summary of the scientific data regarding the potential adverse health effects from exposures to thoracic coarse particles in the Final PM Staff Paper, they noted that the body of evidence on health effects associated with exposure to thoracic coarse particles that is relevant to PM_{10-2.5} is quite limited.
- In addition, although there are several studies that do provide convincing data of an association between short-term exposure to PM_{10-2.5} and adverse health effects, these are associated with exposure to thoracic coarse PM in urban environments — noting that PM_{10-2.5} concentrations in urban and industrial areas not only differ in composition from those in rural areas but also may be commonly enriched by a number of contaminants not commonly found in crustal material. On the other hand, little is known about the potential toxicity of rural dusts, although two recent studies from Coachella Valley, CA showed significant adverse health effects primarily involving exposures to coarse PM arising from crustal sources.
- Most PM Panel members concurred that the current scarcity of information on the toxicity of rural dusts makes it necessary for the Agency to base its regulations on the known toxicity of urban-derived coarse particles, and that an urban coarse particle indicator should be specified as UPM_{10-2.5}. Other Panel members recommended specifying a na-

tional PM_{10-2.5} standard accompanied by monitoring and exceptional-events guidance that emphasized urban influences. Some members also expressed concerns whether EPA would be able to specify a clear definition of what constitutes an “urban” area (for example, a local population greater than 100,000) to determine in advance the specific conditions in which the NAAQS would (and would not) apply, noting that this would likely be difficult to “operationalize” in practice.

- Panel members discussed the need for a thoracic coarse particle monitoring network that would measure both the amount and the composition of the PM_{10-2.5}, recognizing that UPM_{10-2.5} serves as a surrogate indicator for thoracic coarse particles that are contaminated by surface coatings of pollutants of anthropogenic origin. Monitoring for thoracic coarse particles is especially important in rural areas, since compliance monitoring is already adequately deployed around higher-population (*i.e.*, urban or suburban) population centers. It was noted that it is critical to be able to correlate particle composition with adverse health effects, and PM Panel members anticipated that future coarse- and fine-mode particulate standards will need to give greater weight to particulate composition as a critical element in defining the risk of these adverse human health effects.
- As to the questions relating to averaging time and statistical form for a prospective thoracic coarse particle standard, PM Panel members found that the basis for the Agency’s proposed retention of a 24-hour averaging time and high-percentile (98th or 99th) statistical form, and the elimination of the annual averaging time for coarse particles, to be well-described in the Final PM Staff Paper. Specifically, Panelists expressed support for the use of a 24-hour averaging time, and also strongly recommended using the 98th percentile, which is judged to be more statistically-robust than the 99th percentile, together with the use of a three-year average of this statistic.
- Regard the question concerning the level for a thoracic coarse particle NAAQS, there was general agreement among PM Panel members that EPA had presented a reasonable justification for the ranges of levels proposed. In addition, overall, Panelists expressed that Agency staff have been responsive to the previous advice and recommendations of the CASAC. However, one member thought the lower bound, as proposed, would leave a substantial portion of the population (particularly in the northeastern U.S.) at continued significant risk, while several members supported the lower ends of the proposed ranges. It was noted that, by use of an indicator for urban thoracic coarse particles (UPM_{10-2.5}), the Agency is moving toward including composition as well as size in its regulations of PM in ambient air — a step that the PM Panel generally welcomes as progressive, in that it can only lead to an increase in the level of scientific knowledge concerning the potential toxicity of rural PM_{10-2.5} particles.

Summary and Next Steps

Dr. Henderson thanked the members of the PM Panel for their participation in today’s teleconference to review Agency staff recommendations concerning a potential thoracic coarse PM standard in the final PM Staff Paper. In addition, she requested that Panel members provide their inputs on the draft letter to the EPA Administrator concerning this review to the respective lead discussants for the various aspects of the Panel’s discussion as soon as practicable (with a copy to the Chair and to Mr. Butterfield, the DFO). The DFO will circulate an initial draft of the

CASAC's letter/report for PM Panel members' review and comments as soon as possible thereafter, with a goal of having this out to Panelists by Tuesday, August 23. Furthermore, Dr. Henderson requested that PM Panelists furnish both her and the DFO with their initial or revised individual review comments for inclusion in the appendix of this letter.

Mr. Butterfield also thanked all participants on today's public advisory conference call. Additionally, he requested that all public speakers provide him with an electronic copy of their oral public comments as soon as possible. The DFO adjourned the meeting at approximately 4:30 p.m. on August 11, 2005.

Respectfully Submitted:

Certified as True:

/s/

/s/

Fred A. Butterfield, III

Rogene F. Henderson, Ph.D.

Fred A. Butterfield, III
CASAC DFO

Rogene F. Henderson, Ph.D.
CASAC Chair

Appendix A – Roster of the CASAC Lead Review Panel

**U.S. Environmental Protection Agency
EPA Science Advisory Board (SAB) Staff Office
Clean Air Scientific Advisory Committee (CASAC)
CASAC Particulate Matter (PM) Review Panel***

CHAIR

Dr. Rogene Henderson, Scientist Emeritus, Lovelace Respiratory Research Institute, Albuquerque, NM

MEMBERS

Dr. Ellis Cowling*, University Distinguished Professor-at-Large, North Carolina State University, Colleges of Natural Resources and Agriculture and Life Sciences, North Carolina State University, Raleigh, NC

Dr. James D. Crapo*, Professor, Department of Medicine, Biomedical Research and Patient Care, National Jewish Medical and Research Center, Denver, CO

Dr. Philip Hopke**, (Immediate Past CASAC Chair), Bayard D. Clarkson Distinguished Professor, Department of Chemical Engineering, Clarkson University, Potsdam, NY

Dr. Jane Q. Koenig, Professor, Department of Environmental Health, School of Public Health and Community Medicine, University of Washington, Seattle, WA

Dr. Petros Koutrakis, Professor of Environmental Science, Environmental Health, School of Public Health, Harvard University (HSPH), Boston, MA

Dr. Allan Legge, President, Biosphere Solutions, Calgary, Alberta

Dr. Paul J. Lioy, Associate Director and Professor, Environmental and Occupational Health Sciences Institute, UMDNJ - Robert Wood Johnson Medical School, NJ

Dr. Morton Lippmann, Professor, Nelson Institute of Environmental Medicine, New York University School of Medicine, Tuxedo, NY

Dr. Joe Mauderly, Vice President, Senior Scientist, and Director, National Environmental Respiratory Center, Lovelace Respiratory Research Institute, Albuquerque, NM

Dr. Roger O. McClellan, Consultant, Albuquerque, NM

Dr. Frederick J. Miller*, Consultant, Cary, NC

Dr. Günter Oberdörster, Professor of Toxicology, Department of Environmental Medicine, School of Medicine and Dentistry,

Mr. Richard L. Poirot*, Environmental Analyst, Air Pollution Control Division, Department of Environmental Conservation, Vermont Agency of Natural Resources, Waterbury, VT

Dr. Robert D. Rowe, President, Stratus Consulting, Inc., Boulder, CO

Dr. Jonathan M. Samet, Professor and Chair, Department of Epidemiology, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD

Dr. Frank Speizer*, Edward Kass Professor of Medicine, Channing Laboratory, Harvard Medical School, Boston, MA

Dr. Sverre Vedal, Professor of Medicine, National Jewish Medical and Research Center, Denver, CO

Mr. Ronald H. White, Research Scientist, Epidemiology, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD

Dr. Warren H. White, Visiting Professor, Crocker Nuclear Laboratory, University of California - Davis, Davis, CA

Dr. George T. Wolff, Principal Scientist, General Motors Corporation, Detroit, MI

Dr. Barbara Zielinska*, Research Professor, Division of Atmospheric Science, Desert Research Institute, Reno, NV

SCIENCE ADVISORY BOARD STAFF

Mr. Fred Butterfield, CASAC Designated Federal Officer, 1200 Pennsylvania Avenue, N.W., Washington, DC, 20460, Phone: 202-343-9994, Fax: 202-233-0643 (butterfield.fred@epa.gov) [Physical/Courier/FedEx Address: Fred A. Butterfield, III, EPA Science Advisory Board Staff Office (Mail Code 1400F), Woodies Building, 1025 F Street, N.W., Room 3604, Washington, DC 20004, Telephone: 202-343-9994]

* Members of the statutory Clean Air Scientific Advisory Committee (CASAC) appointed by the EPA Administrator

** Immediate past CASAC Chair

Appendix B – Meeting Agenda

**U.S. Environmental Protection Agency
Clean Air Scientific Advisory Committee (CASAC)
CASAC Particulate Matter (PM) Review Panel**

**Public Teleconference
Thursday, August 11, 2005 – 1:00 to 5:00 p.m. Eastern Time**

**EPA Science Advisory Board (SAB) Staff Office
1025 F. Street, N.W., Washington, DC 20004**

Purpose of Teleconference: To Review the EPA Staff Recommendations Concerning a Potential Thoracic Coarse PM Standard in the Final PM Staff Paper

Meeting Agenda

Thursday, August 11, 2005

1:00 p.m.	Convene Teleconference; Call Attendance; Introductions and Administration	Mr. Fred Butterfield, CASAC DFO
1:10 p.m.	Purpose of Meeting	Dr. Rogene Henderson, Chair
1:15 p.m.	Highlights of EPA Staff Recommendations on “Thoracic Coarse Particle Standards” (Section 5.4 of EPA’s Final PM Staff Paper)	Dr. Karen Martin, Office of Air Quality Planning and Standards (OAQPS)
1:30 p.m.	Public Comment Period	Mr. Butterfield (Facilitator)
2:00 p.m.	Members’ Discussion and Deliberation	CASAC PM Review Panel Members
4:50 p.m.	Summary and Next Steps	Dr. Henderson
5:00 p.m.	Adjourn Meeting	Mr. Butterfield

Appendix C –List of Public Speakers

**U.S. Environmental Protection Agency
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Public Teleconference Meeting ❖ August 11, 2005

**EPA Science Advisory Board (SAB) Staff Office
 1025 F. Street, N.W., Washington, DC 20004**

#	Speaker's Name	Organizational Affiliation(s)	Organization(s) Represented (i.e., comments offered on behalf of)
1	Ms. Deborah Shprentz	Consultant	American Lung Association (ALA)
2	Mr. Jon Heuss	Air Improvement Resource, Inc. (AIR)	Alliance of Automobile Manufacturers (AAM)
3	Dr. Jana Milford	Environmental Defense (ED)	same
4	Mr. Todd Johnston	National Mining Association (NMA)	Coalition for Coarse Particle Regulation
5	Mr. Robert Connery	Holland & Hart LLP	National Cattlemen's Beef Association (NCBA)
6	Dr. Peter Valberg or Dr. Christopher Long	Gradient Corporation	Engine Manufacturers Association (EMA)
7	Mr. Duane Ono	Great Basin [California] Unified Air Pollution Control District	same