

**Summary Minutes of the Clean Air Scientific Advisory Committee (CASAC)
NO_x and SO_x Secondary NAAQS Review Panel
Public Meeting on July 22-23, 2009
Marriott at Research Triangle Park, NC**

Panel Members:

Dr. Armistead (Ted) Russell, Chair
Dr. Praveen Amar
Dr. Andrzej Bytnerowicz
Ms. Lauraine Chestnut (by phone)
Dr. Ellis B. Cowling
Dr. Charles T. Driscoll, Jr.
Dr. Paul J. Hanson
Dr. Rudolf Husar (by phone Wednesday only)
Dr. Dale Johnson
Dr. Donna Kenski
Dr. Naresh Kumar
Dr. Myron Mitchell
Mr. Richard L. Poirot
Dr. Kathleen Weathers

Unable to Attend:

Dr. H. Christopher Frey
Mr. David J. Shaw

SAB Staff:

Ms. Kyndall Barry
Dr. Anthony Maciorowski
Dr. Holly Stallworth

EPA Staff:

Jeffrey Arnold, Tara Greaver Brooke Gray, Dave Guinnup, James Hemby, Jeffrey Herrick, Bryan Hubbell, Amy Lamson, Meredith Lassiter, Lingli Liu, Jason Lynch, Karen Martin, Sarah Mazur, Connie Meacham, Kristopher Novak, Norm Possiel, Elyse Procopio, Anne Rea, Adam Reff, Mary Ross, Steve Silverman, Ginger Tennant, Randy Waite, Lydia Wegman

Public Participants:

Jamie Cajka, RTI; William Cooter, RTI; Michele Cutrofello, RTI; Marion Deerhake, RTI; John Jamson, Southern Company; Cindy Langworthy, Hunton & Williams; Ona Papageorgiou, NYSDEC; Jennifer Phelan, RTI ; Chris Shaver, NPS ; Emily Simone, RTI

Purpose:

To conduct a peer review the *Risk and Exposure Assessment (REA) for Review of the Secondary NAAQS for NO_x & SO_x: Second Draft (EPA-452/P-08-005a)*

Attachments:

The meeting agenda, charge questions, presentations, public comments and preliminary review comments from the panel members may be found on the meeting website:

<http://yosemite.epa.gov/sab/sabproduct.nsf/MeetingCal/431C50DAFEAC39F18525757D00655674?OpenDocument>.

Meeting Summary

The discussion followed the issues and general timing as presented in the agenda posted at the above-stated URL.

Wednesday, July 22, 2009

Ms. Kyndall Barry convened the meeting and explained that the CASAC NO_x & SO_x Secondary Review Panel will operate under the Federal Advisory Committee Act (FACA). She also announced that there would be a conference call on August 20, 2009, for the CASAC to review and approve the Panel's letter to the EPA Administrator concerning the REA peer review. Dr. Anthony Maciorowski thanked the Panel for their hard work. He also thanked EPA staff and members of the public for attending the meeting. Dr. Armistead (Ted) Russell thanked the EPA staff for preparing the second draft REA. The Panel was introduced, and Dr. Russell then reviewed the agenda.

Ms. Lydia Wegman of EPA's Office of Air and Radiation (OAR) introduced OAR team and thanked the CASAC Panel for their service to the Agency. In her presentation entitled, "Update on the NO_x/SO_x Secondary NAAQS Review," Ms. Wegman walked the panelists through the timeline for the current review and noted that the Agency's request for more time to complete the review was rejected by the Court. In the absence of additional time to complete the analyses necessary to support an ecologically relevant standard, Ms. Wegman went on to explain the policy-making options currently being considered by EPA:

1. Retain the current secondary standards,
2. Revise the current standards by making secondary standards identical to primary standards (retain current secondary standards for SO₂), or
3. Revoke current secondary standards.

It was also noted that OAR was considering an option to complete the current review per court order and accelerate the next review of the secondary NAAQS to capitalize on the momentum and work that had been done. The CAA states that the review of criteria pollutants will take place every five years, with no language that would preclude the Agency from initiating a review cycle in less than five years (e.g., an accelerated track). The Panel engaged EPA in discussions to better understand the settlement negotiation process, the evidence that the Agency feels critical to support the proposal of an ecologically relevant standard, and the true import of the proposed policy options. When asked how much additional time was needed to conclude the secondary review process, the Agency attorney pointed out that the specific information was confidential under settlement negotiation. As an aside, Ms. Wegman stated that in her opinion one year should be sufficient to complete the analyses needed to support new policy recommendations. In Panel discussions of the three options, some members felt the revocation of the secondary standards to be the best option to highlight the gravity of the need for ecologically-relevant welfare standards.

In the presentation entitled, "Update on the 2nd draft NO_x/SO_x Secondary NAAQS Risk and Exposure Assessment," Dr. Anne Rea discussed out the major revisions between the first and second drafts, and asked for the Panel's specific recommendations for improving the quantitative analyses and tee up the policy relevant questions. Highlights from the presentation include the increased focus on the impact of reduced nitrogen on sensitive ecosystems; additional maps on emissions, concentrations and deposition (oxidized and chemically reduced); increased description of CMAQ application and performance; enhanced discussion of ecosystem services; and selected case studies that the Agency completed. Dr. Rea then summarized results of each of the four case studies in the assessment (that is, aquatic acidification, terrestrial acidification, aquatic nutrient enrichment, and terrestrial nutrient enrichment) and ranked the Agency's confidence in the model outputs. The Panel sought clarification on the scope of the proposed

welfare standard, one that would be protective of sensitive ecosystems, which are often local or regional, versus a true national standard. EPA staff used the analogy of health standards use of asthmatics, children and the elderly for case study analyses because they represent the most sensitive populations in many cases. Staff also noted that with all NAAQS, the level of the standard is a decision made by the Administrator.

In the public comment period, Ms. Cindy Langworthy presented comments on behalf of the Utility Air Regulatory Group (UARG). UARG challenges the Agency's authority under the CAA to use an ecological indicator rather than an ambient air concentration as the form. UARG further questions the states' ability to implement a standard that is based on deposition rather than ambient-air concentrations and the states' ability to monitor and manage compliance programs based on the proposed indicators.

Discussions then turned to the Panel's review of the REA. Before launching the Panel discussions of the REA charge questions, Dr. Russell outlined the process for drafting the Panel's consensus report. The following issues recurred in Panel discussions: better linkages between the atmospheric and watershed models; the need for an evaluation or overview of the various models used in the assessments, both limitations and performance; and the critical need for more discussion of spatial and temporal scaling.

Panelists appreciated the inclusion of an Executive Summary, but offered suggestions for improvement in finalizing the REA. Specifically, there was strong agreement that more information was needed on the extent of the problem in the U.S. under current conditions; the selection criteria for the case studies; and better explanation of staff-derived terminology like "maximum depositional load." There was agreement that the air quality analyses were much improved from the first draft, inclusion of ratio maps (like deposition to emissions and measured to modeled wet deposition) and a more quantitative depiction of uncertainty were recommendations to improve Chapter 3. In reviewing the four case study analyses, the Panel called for quantitative information as it relates to uncertainty and urged the Agency to consider (and discuss) the cumulative effect of uncertainty in the respective model estimates of aquatic and terrestrial emissions and deposition. While the Panel found the addition of a synthesis chapter beneficial, there was agreement that it could be of better utility by improved discussion of the scope of the problem in the U.S., identifying the information and data gaps for current and future NAAQS reviews and the potential use of sustainability within an ecosystem as a metric for determining adversity.

Following the afternoon break, Dr. Russell laid out the process by which the Panel's consensus report would be developed and the format of the report. The Chair and the Panel discussed the major points for inclusion in the cover letter, including the three policy issues currently under consideration. Other points raised by the Panel included the location of the answers to the policy-relevant questions, more discussion on the selection of the case studies, parity for reduced nitrogen and ammonia in the REA, more maps, more quantitative model performance analyses, more quantitative information on uncertainty, acknowledgement of some beneficial effects of nitrogen deposition.

Following the Panel's discussion, Dr. Bryan Hubbell from OAR presented "Update on the NO_x/SO_x Secondary NAAQS Policy Assessment." The presentation covered the Agency's goal to develop key concepts for the design of secondary standards that incorporate multiple pollutants (NO_x and SO_x), are statutorily appropriate, and provide protection against adverse welfare effects due to NO_x and SO_x air emissions. In linking concentrations of NO_x and SO_x to deposition, the Agency is most confident in the aquatic acidification case study as it relates to the effects reduced nitrogen, NO_x and SO_x on deposition and ANC. The Panel engaged Agency staff on the form of an ecologically relevant standard for NO_x and SO_x and the statutory authority to regulate ecologically relevant but unlisted pollutants like total reactive nitrogen, reduced nitrogen, and ammonia. Dr. Karen Martin talked about the construct of a standard to protect against the effect of interest in terms of a two-step function: 1) an environmental effect that is related to deposition or a depositional load and 2) deposition/depositional load related to some measure of

pollutants in the ambient air. She used an example of an environmental effect the Agency is considering to protect against in the PM NAAQS review: the concept of light extinction and a PM visibility standard. Light extinction is a property related to the amount of PM in the ambient air, not a discrete concentration measurement.

Thursday, July 23, 2009

Ms. Barry reconvened the meeting of the CASAC NO_x and SO_x Secondary NAAQS Review Panel. The Panel began the second day of meetings with a discussion of Policy Assessment information presented by EPA. The Panelists' opinions diverged on preference and the impact of the policy options presented by the EPA: retain, revise or revoke. Some members felt revoke to be the most appropriate option in that it acknowledged that the practice of "rubberstamping the primary standard" in administrations was no longer acceptable and acknowledged that the primary standard was not protective of ecosystems. Others felt that revoking the secondary standards sent a bad message to the public, specifically that EPA didn't care about welfare effects, only health effects. Dr. Martin pointed out that it could be viewed that revising the secondary standards to be equal to the primary provides *some* actual protection of ecosystems in the event that the standards are lowered. She also noted that the Agency's justification in setting all standards are provided in the notice of proposed rulemaking. On the topic of implementation, Ms. Lydia Wegman pointed out that there is no attainment date for secondary standards because the language says "expeditiously as practicable" and state implementation plans (SIPs) are due three years after a rule becomes final.

The Panel then moved into discussions of its draft letter on the second draft REA. There was a brief break before the public comment period. The DFO noted a modification to the public comment period: Ms. Ona Papageorgiou from New York State Department of Environmental Conservation would follow Ms. Chris Shaver. In her address to the Panel, Ms. Shaver congratulated the Agency on its progress in the current review and case study selection, noted the importance of ecologically relevant standards to the National Park Service, and reiterated that the current standards are not protective as there are currently serious effects from deposition in national parks. She further offered an endorsement to revoke the standards for transparency of the process and to reflect the inherit gravity of the situation. Ms. Papageorgiou commended EPA on the greatly-improved REA and thanked CASAC for their significant role in providing thoughtful advice as reflected in the second draft. She reiterated the need to identify data gaps and offered the following suggestions for further improvement: including the Catskills as a case study, use of more direct indicators for critical loads analysis, and the need to update and expand the models used in the current assessment. In conclusion, Ms. Papageorgiou stated that NYSDEC did not view any of the three proposed policy options to be protective of public welfare and emphasized the importance of proceeding with the necessary analyses even after the court-ordered deadline.

Following the public comment period, the Panel discussed the draft letter on the second draft REA. The Chair and the DFO compiled the language submitted from the workgroups into a single letter. The letter was projected onto the screen and discussed by the Panel. By the end of the session, the Panel reached consensus on the major points as required by FACA and approved the intent of the letter. Editorial changes to the letter would be handled by the Chair and the workgroup leads. The DFO noted that draft letter with final review comments will be posted on the meeting website prior to the final review and approval by the statutory CASAC on August 20th.

Respectfully Submitted:

/s/

Ms. Kyndall Barry
Designated Federal Officer

Certified as True:

/s/

Dr. Ted Russell, Chair
CASAC NO_x & SO_x Secondary
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 to 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.