



September 28, 2007

**MEMORANDUM**

**SUBJECT:** CASAC Review of Integrated Science Assessment for Sulfur Oxides – Health Criteria: First External Review Draft

**FROM:** Mary Ross, Ph.D  
Branch Chief, Environmental Media Assessment Group  
National Center for Environmental Assessment –  
Research Triangle Park Division (B243-01)

**TO:** Angela Nugent, Ph.D  
Designated Federal Officer  
Clean Air Scientific Advisory Committee  
EPA Science Advisory Board Staff Office (1400F)

Attached is the draft *Integrated Science Assessment for Sulfur Oxides – Health Criteria: First External Review Draft (ISA)* prepared by the Environmental Protection Agency's (EPA) National Center for Environmental Assessment – Research Triangle Park Division (NCEA – RTP) as part of EPA's ongoing review of the national ambient air quality standards (NAAQS) for sulfur dioxide (SO<sub>2</sub>). The draft ISA will be reviewed by the Clean Air Scientific Advisory Committee (CASAC) NO<sub>x</sub> and SO<sub>x</sub> Primary NAAQS Review Panel (the CASAC NO<sub>x</sub> and SO<sub>x</sub> Primary Panel) at a public meeting to be held in Research Triangle Park on December 5-6, 2007. I am requesting that you forward the draft ISA to the CASAC NO<sub>x</sub> and SO<sub>x</sub> Primary Panel to prepare for that review.

The purpose of the draft ISA is to identify, evaluate, and summarize scientific information on the health effects associated with gaseous sulfur oxides. The ISA is intended to “accurately reflect the latest scientific knowledge useful in indicating the kind and extent of identifiable effects on public health which may be expected from the presence of [a] pollutant in ambient air” (Clean Air Act, Section 108 (42 U.S.C. 7408)). This first external review draft ISA integrates the evidence on health effects of gaseous sulfur oxides, and provides draft findings, conclusions and judgments on the strength, coherence and plausibility of the evidence. The draft ISA is supported by a series of Annexes that provide more comprehensive and detailed information on the relevant evidence available from the disciplines of atmospheric science, human exposure, toxicology and epidemiology. These Annexes are provided with the ISA for the Panel's information. The CASAC NO<sub>x</sub> and SO<sub>x</sub> Primary Panel is being asked to review the draft ISA. NCEA-RTP will also address comments received on supporting material in the Annexes, to the extent that Panel members wish to review and provide comments on the Annexes.

Following the review of the draft ISA, NCEA-RTP staff will produce a second draft ISA, which will be released for CASAC and public review in the spring of 2008. Subsequent steps in the NAAQS review process include risk and exposure assessments, and a draft plan for these assessments will be sent to the CASAC in the next month.

### **Charge to the CASAC NO<sub>x</sub> and SO<sub>x</sub> Primary Panel**

We ask the Panel to focus on the following questions in their review:

1. To what extent are the atmospheric chemistry and air quality characterizations clearly communicated, appropriately characterized, and relevant to the review of the primary SO<sub>2</sub> NAAQS?
2. Are the properties of ambient sulfur oxides appropriately characterized, including policy-relevant background, spatial and temporal patterns, and relationships between ambient sulfur oxides and human exposure?
3. Is the information provided on atmospheric sciences and exposure sufficient for the evaluation of human health effects of sulfur oxides in the ISA?
4. To what extent are the discussion and integration of evidence on the health effects of sulfur oxides from the animal toxicological, human clinical, and epidemiological studies, technically sound, appropriately balanced, and clearly communicated?
5. To what extent does the integration of health evidence focus on the most policy-relevant studies or health findings?
6. What are the views of the Panel on the conclusions drawn in the draft ISA regarding the strength, consistency, coherence and plausibility of health effects of sulfur oxides?
7. What are the views of the Panel on the appropriateness of public health impact and the characterization of groups likely to be susceptible or vulnerable to sulfur oxides?
8. What are the Panel's views on the adequacy of this first external review draft ISA to provide support for future risk, exposure and policy assessments?

We look forward to discussing these issues with the CASAC NO<sub>x</sub> and SO<sub>x</sub> Primary Panel at our upcoming meeting. Should you have any questions regarding the draft ISA, please feel free to contact me (919-541-5170, email [ross.mary@epa.gov](mailto:ross.mary@epa.gov)) or Dr. Jee Young Kim (919-541-4157, email [kim.jee-young@epa.gov](mailto:kim.jee-young@epa.gov)).

Attachments

cc: Vanessa Vu, SAB, OA  
Peter Preuss, ORD/NCEA  
John Vandenberg, ORD/NCEA

Ila Cote, ORD/NCEA  
Mary Ross, ORD/NCEA  
Jee Young Kim, ORD/NCEA  
Joseph Pinto, ORD/NCEA  
Karen Martin, OAR/OAQPS  
Lydia Wegman, OAR/OAQPS