

1 **Preliminary Comments on the REA Planning Document from Dr. John Balmes**

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4 **Analytical Approach and Study Area Selection:**

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6 *1. The overall analytical approach for the Risk and Exposure Assessment (REA) and its*
7 *appropriateness for developing spatially and temporally varying 5-minute ambient SO₂*
8 *concentrations, simulating population-based 5-minute peak exposures, and estimating study area*
9 *health risk based on controlled human exposure study data. [Chapter 4].*

10
11 The plan to follow the same conceptual model as used for the 2009 REA seems appropriate.

12
13 *2. The criteria identified and approach used to select potential study areas to evaluate for this*
14 *REA. [Section 4.1.2]*

15
16 The planned approach seems reasonable.

17
18 **Exposure Analysis:**

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20 *1. The overall approach to be used for the exposure analysis, including the use of the APEX*
21 *model, given objectives of the analyses, which include development of 5-minute exposures for*
22 *input to the risk assessment, assessment of factors that contribute to the upper percentile*
23 *population-based 5-minute exposures. [Section 4.1]*

24
25 The planned approach to the exposure analysis seems reasonable.

26
27 *2. The selected study population groups of interest (adults with asthma, school-aged children*
28 *with asthma) for which SO₂ exposure estimates are to be developed. [Sections 3.2.1, 4.1.3]*

29
30 The target study population groups are appropriate based on the review of the literature
31 contained in the ISA.

32
33 **Health Risk Assessment:**

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35 *1. The general structure and overall approach that staff plans to use for the risk assessment.*
36 *[Section 4.2]*

37
38 The overall approach for the health risk assessment is appropriate given the review of the
39 literature contained in the ISA.

40
41 *2. The approaches for using findings from the controlled human exposure studies.*

42 *a. The health benchmarks identified for this REA. [Sections 3.2.2, 4.2.3]*

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1 *b. Plans for developing updated exposure-response functions, including the methodology, and*
2 *specific studies to be relied on, for estimating exposure-response relationships for lung function*
3 *decrements. [Sections 3.2.2, 4.2.4]*

4 *i. The focus on specific airway responsiveness (sRaw) for this quantitative risk*
5 *assessment of short-term exposure-related endpoints.*

6 *ii. The range of exposure concentrations appropriate to include in the dataset for*
7 *deriving the exposure-response function.*

8
9 Given that there are no new controlled human exposure study data, I think that it is reasonable to
10 include the Linn et al. (1983) and Horstman et al. (1986) data to improve the usefulness of the E-
11 R curves for lower level exposures. I also like the plan to explore the effects of different forms of
12 the E-R curve, such as using a curve with the 1000 ppb data removed. Finally, the plan to focus
13 only on SRaw response data is wise given the paucity of FEV1 data.

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