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July 19, 2013

Chet Wayland, Director
Air Quality Assessment Division
Office of Air Quality Planning and Standards
U.S. Environmental Protection Agency
109 T.W. Alexander Drive, Mail Drop C304-02
Research Triangle Park, NC 27711
Sent via email to James Thurman Thurman.james@epa.gov

Re: SO_2 Modeling Technical Assistance Document

Dear Mr. Wayland:

The American Lung Association appreciates the opportunity to comment on the Sulfur Dioxide (SO_2) National Ambient Air Quality Standards Designations Modeling Technical Assistance Document.

First, the Lung Association applauds EPA's recognition that the current SO_2 ambient monitoring network is inadequate to identify the areas across the nation where people are exposed to the recognized health risks from short-term levels of SO_2. The Lung Association has long called for the protection of public health from the recognized harm from these short, dangerous bursts of SO_2, including in legal action that culminated in our successful case, *American Lung Association v Browner,* in 1998. EPA's adoption of the 1-hour standard in 2010 finally moved that court decision into action.

As EPA has recognized, SO_2 is a threat to human health. As noted in the 2008 *Integrated Science Assessment*, over 50 epidemiological studies found that hourly and daily concentrations of SO_2 were associated with serious harm to health, including emergency department visits and hospital admissions for respiratory causes. These associations were observed after controlling for other pollutants and when daily SO_2 levels were well below the standards. These studies pointed to more serious effects of SO_2 exposure occurring at real world concentrations not protected by the then-current standards. Furthermore, EPA's review of the scientific record concluded that the evidence suggested a causal relationship between short-term exposure to SO_2 and mortality, a conclusion supported by the Clean Air Scientific Advisory Committee. (EPA, 2008)

EPA wisely acknowledges that the monitoring network has serious limitations. The 400+ monitors are too few to capture emissions from the over 300 coal-fired electric-generating plants and the over 13,500 boiler and process heaters. (EIA, 2013; EPA, 2010) EPA has recognized that even those monitors cannot adequately capture emissions as an estimated two-thirds of the monitors are not located where they could receive the maximum concentrations from sources.

Modeling the emissions can bridge those gaps, allowing the states and EPA to identify areas that have SO_2 levels that exceed the standard. Modeling is well-established as a tool to characterize air quality. Models have been improved by using historical data to assess accuracy and predictability.

For that reason, the assumption for the emissions is critical. Unlike monitoring, which has a continuing source of data, modeling uses data inputs chosen at the time the model is performed. If the emissions increase, the previous modeling will not automatically capture those changes. The modeling must be redone if the information changes. For example, an area with a power plant that is emitting below allowable levels may be modeled to show that the area attains the standard if modeling is based on existing, but limited, emissions data. However, that conclusion could be incorrect if the emissions increase to the higher allowable levels. To determine that would require a new round of modeling.

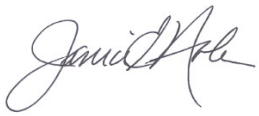
EPA recognizes the challenges, but offers too much flexibility. While the continuous emissions monitoring system (CMES) data will be available for many sources, CMES data will not be available for all sources. Variability in emissions over a short duration, even those that still fall within the allowable levels, will create exposures that are hard to track. This leaves a wide opening for regular bursts that create the unhealthy 1-hour exposures. EPA optimistically "anticipates developing guidance for periodic review to judge whether emissions have increased to levels that might be causing NAAQS violations." This is too weak.

The Lung Association urges EPA to require modeling based on the allowable emissions to conservatively represent the likely real-world exposures. EPA has had a hard enough time getting this guidance developed. Millions of Americans have been exposed to short-term bursts of SO2 exposure during the 15 years since the Lung Association secured the court decision that recognized that people with asthma and children needed protecting from those bursts. The Lung Association urges EPA to adopt the more conservative modeling assumptions in all cases to better protect human health.

Finally, the Lung Association applauds the opportunity for states or other parties to speed up these long-overdue protections by offering credible modeling information in these reviews. The Lung Association urges EPA to take advantage of the modeling currently offered by the Sierra Club to evaluate the potential violations of the NAAQS in its review of potential nonattainment areas.

If you have questions about any of comments in this letter, please contact me at Janice.Nolen@Lung.org.

Sincerely,



Janice E. Nolen, MS
Assistant Vice President, National Policy

CC: James Thurman, Air Quality Assessment Division

U.S. Department of Energy, Energy Information Administration. (EIA 2013). *Electric Power Annual 2011*. Table 4.1. Count of Electric Power Industry Power Plants, by Sector, by Predominant Energy Sources within Plant, 2002 through 2011. Accessed at http://www.eia.gov/electricity/annual/html/epa_04_01.html on July 17, 2013.

U.S. EPA. (EPA 2008). *Integrated Science Assessment for Sulfur Oxides - Health Criteria*. EPA/600/R-08/047F, September 2008, pp. 5-10.

U.S. EPA. (EPA 2010). *National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters*. 75 FR 32006. June 4, 2010.