

Oral Statement to CASAC Review Panel on the CASAC's Draft Panel Report on the EPA's Draft Risk and Exposure Assessment for Sulfur Dioxide

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Good morning, my name is Lindsey Jones. I am a toxicologist with the Texas Commission on Environmental Quality (TCEQ). Thank you for the opportunity to speak to you about the CASAC's draft comments on the EPA's draft Risk and Exposure Assessment (REA) for Sulfur Dioxide (SO₂).

CASAC's draft comments highlight several important strengths and weaknesses of the EPA's current draft REA. We particularly concur with the CASAC's recommendation for the inclusion of model performance criteria, discussion of representativeness of the modeled populations (particularly Fall River), and updating of AERMOD modeling with the more recent 2014 NEI and 2013-2015 ambient SO₂ data.

Before I provide more detailed comments, I want to first reiterate the goal of the national ambient air quality standards (NAAQS) and, by extension, these assessment documents. The NAAQS are supposed to protect public health from adverse effects that occur at ambient pollutant concentrations. This point is important because it focuses monitoring and modeling efforts.

However, there are statements within the panel's report that do not seem to be in line with this focus. For example, on pages 3 and 8, statements are made suggesting that monitoring and modeling data are somehow inappropriate because they do not represent peak or extreme concentrations. The more relevant question is whether the monitor or model does a good job of representing public ambient exposures, not highest possible concentrations. For the sake of time, I will incorporate our thoughts on this point by referencing our previous comments to this committee and the EPA.

The CASAC draft report further recommends that the EPA should require monitoring organizations to report all 5-minute SO₂ concentrations recorded at ambient stations. Although the desire to use more refined data is respectable, the true need for this data is unclear. The EPA's current model predicts very few modeled exposures would reach relevant benchmarks (less than 0.1 to 0.2 percent of the simulated at-risk population would be exposed to 200 ppb for only one day per year and only one study area had more than 0.2% of the simulated at-risk population experience one or more days at or above 100 ppb). SO₂ monitors, particularly those that were placed in compliance with the most recent Data Requirements Rule, are sited to measure the area's higher concentrations, so it's not clear that modeled population exposure would increase with more data. Given the small percentage of 5-minute values that are above either the 100 or 200 ppb benchmarks and the limited evidence for health effects below 200 ppb, it's

not clear that the additional data is warranted. I also encourage the CASAC to discuss this recommendation with monitoring organizations to understand the immense impact of this requirement. Using 2017 monitor counts as an example, increasing reporting frequency to 5 minutes would mean the addition of well over 27 million data points per year for SO₂ alone. Collecting and storing this amount of data would be challenging, but there would also be technical difficulties in loading that much data into the EPA's already taxed system, the solutions to which could be costly to both EPA and the states. Instead, if the EPA wants to conduct a sensitivity analysis they could request 5-minute data from study areas or use study areas that already provide 5-minute data, which could guide the decision about whether this nationwide effort would be worthwhile.

Finally, the last paragraph of the draft panel letter states that the EPA's characterization and representation of variability is appropriate and clear. I would further encourage CASAC to recommend that EPA include the use of confidence intervals in all presentations of risk estimates. Without this information, it is impossible to judge the variability of the data and strengths or validity of conclusions. As stated in your comments on the draft Policy Assessment, the EPA should also attempt to describe the magnitude and potential impact of uncertainties they identify.

Thank you for the opportunity to speak to you this morning.

References:

- Texas Commission on Environmental Quality (TCEQ). Mar 2017. Oral statement to CASAC on the EPA's draft Risk and Exposure Planning Document. Public Teleconference of the Chartered Clean Air Scientific Advisory Committee (CASAC) Sulfur Oxides Panel.
- TCEQ. Apr 2017. Comments by the Texas Commission on Environmental Quality Regarding the Risk and Exposure Assessment Planning Document for the Review of the Primary National Ambient Air Quality Standards for Sulfur Oxides. EPA Docket EPA-HQ-OAR-2013-0566.
- TCEQ. Sep 2017. Oral statement to CASAC on the EPA's draft Risk and Exposure Assessment. Public Teleconference of the Chartered CASAC Sulfur Oxides Panel.
- TCEQ. Sep 2017. Oral statement to CASAC on the EPA's draft Policy Assessment. Public Teleconference of the Chartered CASAC Sulfur Oxides Panel.
- TCEQ. Oct 2017. Comments by the Texas Commission on Environmental Quality Regarding the Risk and Exposure Assessment and Policy Assessment for the Review of the Primary National Ambient Air Quality Standards for Sulfur Oxides. EPA Docket EPA-HQ-OAR-2013-0566.