Clarifying Comment
May 28, 2014 Teleconference
EPA Clean Air Scientific Advisory Committee, Ozone Review Panel

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While listening in to the May 28th CASAC teleconference it seemed there was some apparent confusion about how ozone responds to different types of emission reductions (i.e., NOx-only or NOx+VOC) and how the EPA models predict alternate scenarios. Since it was a teleconference I had trouble distinguishing individual speakers, but one member of the Ozone Panel raised a point that the EPA's modeled NOx-only reductions result in minimum mortality impacts relative to other potential scenarios because of a balance between increasing low ozone concentrations and decreasing high ozone concentrations. The implication is that other scenarios involving VOC reductions would lead to larger mortality benefits, because the low end wouldn't come up as much. In contrast with what I thought I heard, namely that a reduction scenario should be found that would bring down peaks without raising the low end, such a scenario is not realistic based on what we know about ozone chemistry. I know that members of the Panel and EPA staff could have provided some clarification but they did not. I believe that Dr. Russell did correctly state that VOC reductions can also increase ozone.

Since risks are calculated based on the modeled scenarios, I think it is important to understand what might actually happen with an alternative ozone standard. Therefore, I would like to build on my prior public comment on this subject to clarify any confusion.

While there are some differences in how ozone concentrations may change depending on the emission reduction scenario, there is no realistic scenario that precludes NOx reductions, and thus there is no scenario that would bring down the peaks without raising the low end of the distribution toward the middle range. In any well modeled case there will be an increase in mid-range exposures, and that is what we have seen consistently from EPA's and our modeling results as well as monitored concentrations as areas have reduced ozone concentrations.

I intend to provide additional plots and examples from our HDDM modeling of 2006 to help clarify this issue by the June 4th teleconference, which I will submit as an addendum to this comment. I will provide information to demonstrate how hourly ozone frequency distributions evolve between NOx-only, VOC-only, and VOC+NOx emission reductions in the 4 cities (Los Angeles, Sacramento, St. Louis, and Philadelphia) that we have extensively analyzed, and associated emission reductions needed to reach a low NAAQS target such as 60 ppb.

Thank you for your consideration of my further comments prior to your June 4th teleconference.