

Dr. Donna Kenski Preliminary Review Comments for AAMMS Coarse Particle Consultation

The questions on $PM_{10-2.5}$ speciation measurement and on $PM_{10-2.5}$ species or components are outside my areas of expertise and I respectfully defer to the distinguished panel members' opinions on these subjects. With regard to network design, I've answered the charge questions below, but I feel compelled to note that, given the current lack of consensus on how best to sample for both $PM_{10-2.5}$ mass and its speciated components, it seems much too premature to consider rolling out a network of 75 monitors by 2011, just 2 years from now. This is potentially a huge commitment of dollars and state resources that, once launched, will be very difficult to steer in a different direction if future developments warrant. The purpose of this pilot network is for research into coarse particle concentration distributions, sources, and health effects, which is commendable. But we need to allow enough time for the pilot results to be analyzed and filtered through the scientific community before launching a long-term network. A reasonable pilot network would be more like 5 or 10 sites where intensive sampling can take place (maybe even every day instead of every third day at some sites), characteristics of multiple monitors can be intercompared, and options for speciation of those multiple monitors can be explored and vetted until the research community has more collective confidence in the best way to move forward.

If the purpose of speciation is to perform source apportionment, I agree with several panel members who have noted that the bulk components (OC, EC, ions, metals) will not be sufficient to separate some important sources of $PM_{10-2.5}$. It is possible that organic carbon speciation would help resolve some of these sources. While this is unlikely to be feasible as part of the routine network, it should have a place in the pilot network since it would shed some light on whether source apportionment with the bulk species is able to resolve carbon sources satisfactorily. This should include source sampling for the $PM_{10-2.5}$ fraction as well, although that's not necessarily a network function. Continuous sampling for $PM_{10-2.5}$ mass and components (at least EC/OC) would certainly be helpful as well.

With respect to the network design charge questions:

1. *Are sites with high PM_{10} and low $PM_{2.5}$ good candidate sites for $PM_{10-2.5}$ speciation? Given that there will be some urban and rural NCore monitoring sites with $PM_{10-2.5}$ speciation, what other factors should be considered in selecting the pilot monitoring and long-term sites or locations?*

One should aim for a selection of sites that represent varying ratios of $PM_{10}:PM_{2.5}$, as well as varying geographic distribution because the composition of both particle size fractions will vary geographically as well. It will be important to include both coastal and inland sites, urban and rural (not just pristine wilderness areas but agricultural areas also), and various meteorological regimes. It seems like most of the NCore sites as currently proposed are generally population-oriented $PM_{2.5}$ sites. Sites that reflect maximum and representative $PM_{10-2.5}$ exposures will not necessarily coincide with those $PM_{2.5}$ sites, so the pilot program should have the flexibility to monitor at locations outside the NCore network. Based on data collected in the next few years, informed decisions could then be made about long-term sites.

2. *If there is an opportunity to modify the NCore $PM_{10-2.5}$ speciation monitoring requirements during a future rulemaking, should changes to the network design be considered? For example, changing the total number of required monitors and/or the required locations?*

Of course changes to the network should be continually under consideration; hopefully that's an important objective of a pilot network. Learn what works and what doesn't and adjust accordingly. As noted above, it seems much too soon to contemplate 75 speciation sites. I strongly encourage EPA to move ahead slowly and evaluate the pilot study data thoroughly before expanding the network beyond a

handful of research sites. The resources spent on monitor and method intercomparisons will be a much better investment of our scarce monitoring dollars than a hasty move to monitor at all 75 NCore sites. Let the research community evaluate these results, come to agreement on speciation sampling and analysis protocols, then move forward with a broader network that's truly science-based.