initial efforts of phase one as pilot projects, it is important to recognize that we also intend to use the pilot results as they are available to guide other ongoing analyses, where possible. Phase two begins with a characterization of techniques used in the scientific community to estimate uncertainty. Then the phase two effort utilizes results from the pilot projects of phase one to investigate components of uncertainty in-depth.

The integration of plans for ongoing regulatory analyses with our plans for the Second Prospective introduces some additional challenges. Our plan also must be responsive to several key overall considerations. For example, EPA/OAR's current regulatory analysis methodology relies on a damage function approach that emphasizes state-of-the-art tools for analysis within each of four major disciplines: emissions estimation (demanding engineering expertise); air quality modeling (demanding advanced modeling of complex atmospheric chemistry and meteorology over mesoscale geographic spans); concentration-response assessment (demanding knowledge of epidemiologic and toxicologic assessment for human health, and ecological processes for environmental endpoints); and economics (with both cost-side and benefit-side sub-specialties). Understanding uncertainties requires a balance between advancing the state of knowledge within these analytic sub-disciplines, and moving ahead in a manner that recognizes the need to eventually treat quantified uncertainties in an integrated manner for the purposes of propagating uncertainty through to the primary analytic target: an estimate of net monetized benefits. Traditionally, there has been a focus on the former, with less emphasis on the latter.

There is a continuing need to focus on individual sub-disciplines, however, to ensure that decision-makers have the most accurate information and that EPA's regulations can stand up to challenge, and meet the rigorous demands of EPA's recent Information Quality Guidelines. In addition, effective uncertainty analysis demands emphasis on developing integrated tools for the purposes of propagating uncertainty from the initial steps (emissions and AQM) into an overall assessment of uncertainty in key analytic outputs (emissions, monetized costs, physical effects benefits, and monetized benefits).

EPA's response to these considerations has been to follow a carefully planned process for quantifying uncertainties across the full range of the analysis, beginning in late 2002, shortly after the publication of the NAS report in September 2002. Most recently, in April of 2003, the Agency convened a planning workshop meeting of EPA staff to establish objectives for the uncertainty analysis for the second prospective and develop plans for pilot projects that are consistent with an integrative analysis. That planning process is ongoing, but we have initiated efforts to characterize the key components of a benefit-cost analysis that influence uncertainty and we plan to initiate or continue five pilot projects (the pilots on PM C-R and mortality valuation had already been initiated by OAQPS to support the Nonroad Diesel and other rulemaking analyses):

[continue on 9-6 – May 12 original]