July 3, 2008

Ms. Vivian Turner (DFO)
EPA Science Advisory Board (1400F)
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

RE: Written Comments for the SAB Asbestos Committee

Dear Ms. Turner:

After reading the committee charge questions and the main body of the report I was concerned about the exposure monitoring data to be relied upon for the mesothelioma risk consideration. However, after reviewing Appendix A to the document I feel comfortable that someone within EPA has considered the short-comings of the exposure data and recognized that gaps will need to be filled in with supplemental studies, data from other plants, reliance on simulations, and extrapolations from limited sampling, particularly to earlier points in time. There are a few brief comments I would like to add for the committee to consider.

1. The committee should determine to the extent possible the dust/fiber dimensions included and reported in the samples when results are expressed as millions of particles per cubic foot (mppcf). As an example, the Fleisher-Drinker study of insulators' exposures reported results in mppcf as total dust and mppcf as asbestos dust. I am familiar with other data sets from the 1950s and 1960s that have reported results in mppcf where instead of counting all particles of a certain diameter, only fibrous particles were counted; or in some instances the final total dust count was reduced using the percentage of asbestos in a bulk sample or settled dust samples.[1] Looking at the membership of the SAB Asbestos Committee this has likely already been considered.

2. Using Fleisher-Drinker as an example again, all of there dust counts were done with a Konimeter and not with the impinger. Does the Committee intend to use the same conversion factor (mppcf to f/cc) regardless of the sampling and analytical method used during the original sample collection?

3. One area not addressed in the report or the appendices is how to handle certain data points outside the range of the method. There have been many articles about

[1] Fleischer, W.E., et al., "A Health Survey of Pipe Covering Operations in Constructing Naval Vessels," *The .J Ind. Hyg. And Tox.*, Vol. 28, No. 1, pp. 9-16 (1946).

how to handle very low values, or none detected samples. Little is said about the samples collected where the analytical finding is "overloaded." My experience is those samples are simply voided. In a group of ten samples collected to characterize an area, if three are overloaded and voided, the mean derived from the remaining seven samples would be depressed. If the voided samples were collected in the same atmosphere it would be more appropriate to report the values as greater than the highest value measured concurrently. My only recommendation is the committee consider censored data at both ends of the spectrum.

4. As an industrial hygienist I am focused on the exposure data being considered and not the medical side of the equation. In determining the average dose for a worker, are all workers presumed to work the same length of time each day, each week, overtime, etc.? In my own work the frequency and duration of the exposure is usually more difficult than the exposure range itself. My recommendation is whatever assumptions are made (i.e., all workers were assumed to work 2200 hours per year of service in the average exposure concentration X) should be clearly stated.

5. The project plan seems to assume that all exposures occur in the occupational setting. The resulting lifetime dose calculations assume zero exposure except for the small percentage of time actually spent at the plant.[2] I certainly recognize for each epidemiology study it is not practical to investigate what exposures may occur from fibers carried home on a workers clothing. However, it should be noted that it is assumed that any exposures outside of work for any particular cohort is the same.

6. I ask the committee to consider how their work might be applied to lung cancer and mesothelioma resulting from take-home exposures and familiar clusters. Assuming there is agreement that historically the spouses and children of asbestos workers are an at risk group, could this group also help characterize the long tail that appears to comprise low-dose exposure?

Lastly, I thank the individual committee members for taking time from their families and jobs to contribute their expertise to this important work.

Sincerely,

William M. Ewing, CIH
Technical Director

[2] Note: A 40-hour workweek represents about 14% of the entire week.