sary to count all the particles makes this procedure impractical.

In understanding control techniques and their efficiencies, it is important not to confuse efficiencies quoted on a weight basis with those based on a particle count.

Considering efficiency based on a weight basis, it is relatively easy to get a very high efficiency with particles whose size is in excess of 5 microns with a variety of control devices. However, the efficiency does drop off considerably with decrease of particle size.

Dr. Harwood, in his study, considers what a collection efficiency as high as 99.999% (the percentage of the total weight of the particulate matter which will be collected by the filter) actually means in terms of the number of fibers collected. (Ex. 20 , p. 47). He concludes that 10^7 fibers actually will pass through the collecting filter for every 1 gram of material impinging upon it.

This is a situation not frequently brought out, but is very significant when exposure levels are monitored in terms of fibers per cubic centimeter. Thus, quoting of efficiency in terms of mass efficiency is a statement that tends to be deceptive. It bears no obvious relation to the number of fibers being emitted.

However, based on tests which actually measure the number of fibers being emitted, it would seem that both fabric filters and high efficiency wet scrubbers are capable of reducing the fiber counts to acceptable levels. British experience is that 0.2 f/cc is routine and Johns Manville finds that 1 f/cc is an acceptable value when the results are averaged over a time period.

We adopt the two fibers per cubic centimeter and the over five micron standards because of the facility of both abatement and measurement utilizing these numbers and because they furnish a sound indication of asbestos content in the air. However, recognition that particles of smaller size may have adverse health consequences of equal or greater magnitude will require the Board to review this subject periodically in consideration of the available measurement technology. See Ex. 6, Lynch, Ayer and Johnson, "The Interrelationships of Selected Asbestos Exposure Indices,"American Industrial Hygiene Association Journal, September-October, 1970, p. 598. (The direct index of asbestos fiber exposure proved to be the concentration of fibers longer than 5 microns. See Ex. 27, Edwards and Lynch, "The Method Used by the U. S. Public Health Service for Enumeration of Asbestos Dust on Membrane Filters," U. S. Department of HEW.