Please note that I am contributing as an individual and not representing the Department of Energy, nor the Oak Ridge Site Office. The comments provided are a compendium of information provided by a contractor subject matter expert during various communications and are not my original work; although I concur with their technical basis. Comments are provided in case the individual does not provide them on his own.

Question Proposed in HS-RM-10-CBDPP:
1. DOE currently defers to the Occupational Safety and Health Administration (OSHA) for establishing the permissible exposure limits (PEL) and uses an action level as the administrative level to assure that controls are implemented to prevent exposures from exceeding the permissible exposure limits. Should the Department continue to use the OSHA PEL? Please explain your answer and provide evidence to support your answer.

The Department should continue to use the OSHA PEL for the following reasons:

1. The new ACGIH TLV is based upon the inhalable dust fraction which represents dusts within the range of 10 – 100 µm aerodynamic diameters. Current sampling protocols using closed face cassettes (CFC) do not allow for the effective collection of the inhalable fraction. Additional sampling methods and equipment are available for sampling the inhalable fraction, such as the Button Sampler and the IOM Sampler, but both of these require the reuse/reloading of the sample filter holder to be cost effective.
2. Reuse/reloading of the filter cassette would create significant issues regarding the potential for cross-contamination, necessitating the need for decontamination and possibly smear sampling of the cassettes prior to reuse. If decontamination was not used, disposal and re-purchase of the filter holders would be very costly. The Button Sampler is made of a stainless steel and aluminum housing that would better facilitate decontamination, but requires a 4 liter per minute which creates challenges regarding battery life on personal air sampling pumps used for full shift sampling.
3. The currently used ICP/MS analytical protocol being used to meet the detection levels below 0.2 $\mu g/m^3$ can meet detection limits the below the 0.05 $\mu g/m^3$ TLV but the digestion process has been shown to be challenged in dissolving beryllium oxide. Fluorescence spectroscopy has been shown to be a better analytical method for beryllium oxide and other compounds of beryllium, but fluorescence spectroscopy procedures are currently being approved.

(My opinion) Although its impact upon those affected should not be trivialized, chronic beryllium disease (CBD) affects such a small portion of the population, that the cost/benefit of adopting the lower limit would be statistically insignificant. Waning financial and material resources could be better spent on broader issues that impact public and occupational health.

Dan Bowman, MPH, CSP, CIH
Industrial Hygienist