

Senate Natural Resources Committee Members and Staff:

Please find attached two PDF documents that pertain to the Committee's hearing on SB 125 last week (radioactive waste). "Response to Sen. Powell..." includes KDHE's answers to Senator Powell's questions during the hearing. "Further Qs..." includes two additional questions that a Committee Member asked me to send to KDHE for the agency's response.

You may notice in the "Response to Sen. Powell..." document, in the response to Question 3, a term of measurement called a "curie." What follows is a brief description of what a "curie" is and what it measures.

Source: Radiation Protection Division, Environmental Protection Agency

CURIES

Since small amounts of material contain very large numbers of atoms, small samples can have a very large number of atoms disintegrating at the same time. It didn't take radiation scientists very long to decide that working with activities in the billions of disintegrations per second was too awkward. To make measuring activity more convenient, they developed a new unit, a curie, named in honor of Marie Curie, a pioneer in the study of radioactive materials.

A curie is defined as 37 billion disintegrations per second. The curie was originally a comparison of the activity of a sample to the activity of one gram of radium, which at the time was measured as 37 billion disintegrations per second. A radioactive sample that has an activity of 74 billion disintegrations per second, has an activity of 2 curies. When more accurate techniques measured a slightly different activity for radium, the reference to radium was dropped.

I hope this information is helpful to you – please let me know if you have any follow-up questions for KDHE based on this material or if you need anything else to help you with SB 125.

Sincerely, Heather

Heather C. O'Hara, Principal Research Analyst