

**Environmental Protection Agency**

**§ 61.207**

(3) The end-user of the phosphogypsum shall maintain records which conform to the requirements of §61.209(c).

(e) If the Assistant Administrator for Air and Radiation decides to grant a request that EPA approve distribution and/or use of phosphogypsum for a specified purpose, the Assistant Administrator may decide to impose additional terms or conditions governing such distribution or use. In appropriate circumstances, the Assistant Administrator may also decide to waive or modify the recordkeeping requirements established by §61.209(c).

**§ 61.207 Radium-226 sampling and measurement procedures.**

(a) Before removing phosphogypsum from a stack for distribution in commerce pursuant to §61.204, or §61.206, the owner or operator of a phosphogypsum stack shall measure the average radium-226 concentration at the location in the stack from which phosphogypsum will be removed. Measurements shall be performed for each such location prior to the initial distribution in commerce of phosphogypsum removed from that location and at least once during each calendar year while distribution of phosphogypsum removed from the location continues.

(1) A minimum of 30 phosphogypsum samples shall be taken at regularly spaced intervals across the surface of the location on the stack from which the phosphogypsum will be removed. Let  $n_1$  represent the number of samples taken.

(2) Measure the radium-226 concentration of each of the  $n_1$  samples in accordance with the analytical procedures described in 40 CFR part 61, appendix B, Method 114.

(3) Calculate the mean,  $\bar{x}_1$ , and the standard deviation,  $s_1$ , of the  $n_1$  radium-226 concentrations:

$$\bar{x}_1 = \frac{\sum_{i=1}^{n_1} x_i}{n_1},$$

$$s_1 = \sqrt{\frac{\sum_{i=1}^{n_1} (x_i - \bar{x}_1)^2}{n_1 - 1}},$$

Where  $\bar{x}_1$  and  $s_1$  are expressed in pCi/g.

(4) Calculate the 95th percentile for the distribution,  $\bar{x}^*$ , using the following equation:

$$\bar{x}^* = \bar{x}_1 + 1.64 \left( \frac{s_1}{\sqrt{n_1}} \right),$$

Where  $\bar{x}^*$  is expressed in pCi/g.

(5) If the purpose for removing phosphogypsum from a stack is for distribution to commerce pursuant to §61.206, the owner or operator of a phosphogypsum stack shall report the mean, standard deviation, 95th percentile and sample size. If the purpose for removing phosphogypsum from a stack is for distribution to commerce pursuant to §61.204, the additional sampling procedures set forth in paragraphs (b) and (c) of this section shall apply.

(b) Based on the values for  $\bar{x}_1$  and  $\bar{x}^*$  calculated in paragraphs paragraphs (a)(3) and (4) of this section, determine which of the following conditions will be met:

(1) If  $\bar{x}_1 < 10$  pCi/g and  $\bar{x}^* \leq 10$  pCi/g; phosphogypsum may be removed from this area of the stack for distribution in commerce pursuant to §61.204.

(2) If  $\bar{x}_1 < 10$  pCi/g and  $\bar{x}^* > 10$  pCi/g, the owner or operator may elect to follow the procedures for further sampling set forth in paragraph (c) of this section:

(3) If  $\bar{x}_1 \geq 10$  pCi/g; phosphogypsum shall not be removed from this area of the stack for distribution in commerce pursuant to §61.204.

(c) If the owner or operator elects to conduct further sampling to determine if phosphogypsum can be removed from this area of the stack, the following procedure shall apply. The objective of

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the following procedure is to demonstrate, with a 95% probability, that the phosphogypsum from this area of the stack has a radium-226 concentration no greater than 10 pCi/g. The procedure is iterative, the sample size may have to be increased more than one time; otherwise the phosphogypsum cannot be removed from this area of the stack for distribution to commerce pursuant to § 61.204.

(1)(i) Solve the following equation for the total number of samples required:

$$n_2 = \left( \frac{1.64s_1}{10 - \bar{x}_1} \right)^2$$

(ii) The sample size  $n_2$  shall be rounded upwards to the next whole number. The number of additional samples needed is  $n_A = n_2 - n_1$ .

(2) Obtain the necessary number of additional samples,  $n_A$ , which shall also be taken at regularly spaced intervals across the surface of the location on the stack from which phosphogypsum will be removed.

(3) Measure the radium-226 concentration of each of the  $n_A$  additional samples in accordance with the analytical procedures described in 40 CFR part 61, appendix B, Method 114.

(4) Recalculate the mean and standard deviation of the entire set of  $n_2$  radium-226 concentrations by joining this set of  $n_A$  concentrations with the  $n_1$  concentrations previously measured. Use the formulas in paragraph (a)(3) of this section, substituting the entire set of  $n_2$  samples in place of the  $n_1$  samples called for in paragraph (a)(3) of this section, thereby determining the mean,  $\bar{x}_2$ , and standard deviation,  $s_2$ , for the entire set of  $n_2$  concentrations.

(5) Repeat the procedure described in paragraph (a)(4) of this section, substituting the recalculated mean,  $\bar{x}_2$ , for  $\bar{x}_1$ , the recalculated standard deviation,  $s_2$ , for  $s_1$ , and total sample size,  $n_2$ , for  $n_1$ .

(6) Repeat the procedure described in paragraph (b) of this section, substituting the recalculated mean,  $\bar{x}_2$  for  $\bar{x}_1$ .

[64 FR 5579, Feb. 3, 1999]

§ 61.208 Certification requirements.

(a)(1) The owner or operator of a stack from which phosphogypsum will be removed and distributed in commerce pursuant to § 61.204, § 61.205, or § 61.206 shall prepare a certification document for each quantity of phosphogypsum which is distributed in commerce which includes:

- (i) The name and address of the owner or operator;
- (ii) The name and address of the purchaser or recipient of the phosphogypsum;
- (iii) The quantity of phosphogypsum, in kilograms or pounds sold or transferred;
- (iv) The date of sale or transfer;
- (v) A description of the intended end-use for the phosphogypsum;
- (vi) The average radium-226 concentration, in pCi/g (pCi/lb), of the phosphogypsum, as determined pursuant to § 61.207; and
- (vii) The signature of the person who prepared the certification.

(2) The owner or operator shall retain the certification document for five years from the date of sale or transfer, and shall produce the document for inspection upon request by the Administrator, or his authorized representative. The owner or operator shall also provide a copy of the certification document to the purchaser or recipient.

(b)(1) Each distributor, retailer, or reseller who purchases or receives phosphogypsum for subsequent resale or transfer shall prepare a certification document for each quantity of phosphogypsum which is resold or transferred which includes:

- (i) The name and address of the distributor, retailer, or reseller;
- (ii) The name and address of the purchaser or recipient of the phosphogypsum;
- (iii) The quantity (in pounds) of phosphogypsum resold or transferred;
- (iv) The date of resale or transfer;
- (v) A description of the intended end-use for the phosphogypsum;
- (vi) A copy of each certification document which accompanied the phosphogypsum at the time it was purchased or received by the distributor, retailer, or reseller; and
- (vii) The signature of the person who prepared the certification.