8/28/02
67FR55280
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From: Frederic Mis <frederic_mis@rge.com>
To: <nrcrep@nrc.gov>
Date: Mon, Nov 4, 2002 2:23 PM
Subject: Response from "Contact the Web Site Staff"

The following information was submitted by
Frederic Mis (frederic_mis@rge.com) on Monday, November 4, 2002 at 14:22:45

Document_Title: Draft NUREG-1761 "Radiological Surveys for Controlling Release of Solid Materials"

Comments: 1) Cover Page, all symbols are upside down

2) General comments;
There is a considerable amount of effort expended for the identification of very low levels of activity, using specific recommendations, for specific materials. What is the overall reduction in risk based on this? Essentially, all the information provided in this document provides instructions on how to utilize instrumentation to achieve values of less than detectable. The suggestion of utilizing dose based limits is noted in line 945, but there are no suggestions on appropriate software or techniques to achieve this, nor is a value recommended.

The clearance of materials will certainly become far more complicated and it is questionable whether it can be modified for use in the Nuclear Power Industry.

The "Bomb layer" background of Cs-137, or other contributors to the background (such as Chernobyl) and their expected concentrations are not mentioned. In some places in the United States, concentrations of 200 pCi/kgm are easily found. This would confound some releases of soil samples near nuclear facilities.

The Draft Report does very little to provide guidance on how to address items that may or may not be contaminated and which also contain naturally occurring isotopes, e.g. camera lens, CRTs, ceramic insulators, etc.

When describing the use of GeLi systems, the document implies that a geometry for each type of material being released must be created. This is cumbersome and not practical.

Another cost factor missing from the draft in determining if clearance is the best option, would be the cost of labor, documentation, and equipment to perform the surveys.

Although ANSI/HPS 13.12, 1999 is mentioned in the references it should be the standard for the DCGL. The ANSI/HPS 13.12 standard is more in align with international standards for clearance and less restrictive than others proposed. Especially with the large volume of recycled material that is expected to be imported into the U.S. after meeting international clearance, it is good sense to be aligned with the international standard for the U.S.

There are numerous typos and spelling errors, e.g. line 1455 "T he"

3) Specific comments

Lines 480-484,
This technique was described earlier in IE notice 86-92, and therefore this document should be referenced.

Template = ADM-013

E-RIDS = ADM-03
All = G. Powers (GEP)
WM

Line 798-99
"The difference (DCGL-LBGR) is denoted ?" What does "?" mean, or what is the remainder of the sentence. The icon "?" also appears in leu of a variable or phrase in several locations in this document. Specific examples would be lines 3335, 3364 and 3411.

lines 913 through 924
The document endorses the concept of no release of activity in excess of a guideline limit, without providing one. In section 4.1 historical values first provided in IE-notice 81-07, (limits of 5000 dpm/100 cm2) as well as found in Reg Guide 1.86 are provided. But current NRC inspector guidance, as well as this document, states that the limit for release should be the MDA minus the total instrument uncertainty factor, (MDA-TIU). This will be most frequently less than the quoted values found in Table 4.1. Therefore the inclusion of this table serves no purpose but to confuse the user. This is reinforced with the example provided at line 2789. A limit of 5,000 dpm/100 cm2 is noted for substitution into the equation, as well as a limit of 1000 dpm/100cm2 for Sr-90.

The equation listed at line 1279 is impractical. A typical nuclear power plant will have many radioisotopes which will contribute to a contamination level. Additionally, this will change throughout the plants cycle. As stated in line 1287, the approach most frequently taken will be to use the most conservative values.

Lines 1365 through 1384 would be made clearer if 10 CFR 61 difficult to measure radioisotopes and associated techniques to infer them were referenced as an example.

Lines 1486
The surface efficiency es, appears to be an arbitrary value. No method of determination is describe, yet it has a key role in the equation, e.g. 25% is assumed for all listed radioisotopes except Pa-234m. Tc-99 has an average beta of 85 keV, yet its es has the same value as Th-234. The value of this variable does not have a technical basis.

Lines 1645 - 1647
TLDs can not be used to detect contamination at the levels required. The most sensitive materials currently used, (such as aluminum oxide or lithium borate) have an LLD of a few mrem per quarter. This requires background subtraction, known fade characteristics, the use of an algorithm as well as element correction factors. There may be up to a 25% variability at the environmental limits over the course of one quarter, let alone a shorter time designed to free release material. To attempt to detect low levels of activities using a personnel dosimeter is inappropriate.

Lines 2060 onward, describes the type of equipment used, is excessive in its detail, and appears to recommend a specific vender. This is especially true at lines 2212 to 2225 and 2253 to 2263.

Line 2816
The scan efficiencies for Fe-55 is inappropriate, as it decays by electron capture. Additionally, it is not practical to have scan efficiencies for Ni-63 and C-14 (17 and 49 keV beta average respectively).

Line 2962
The total activity released of 1.22 uCi is in excess of environmental limits, and could not be released under current NRC guidance. At this point, it would be necessary to incorporate a dose limit to the environment, as once an in toto measurement is made, activities in excess of environmental limits will be exceeded as noted under current guidance.

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SUBMIT2: Send Questions or Comments
