BELOW REGULATORY CONCERN (BRC) MATERIALS

The Nuclear Regulatory Commission (NRC) has been concerned about the large amounts of low-level waste, some containing inconsequential amounts of radioactivity, being shipped to licensed low-level disposal facilities. The problem is coupled with the question of what to do with other slightly radioactive materials. Accordingly, on June 27, 1990, the NRC published the criteria it will use to determine whether such materials are “below regulatory concern” (BRC) and can be handled or disposed of as non-radioactive materials.

The materials and activities covered by the “guidelines” are: 1) very low-level radioactive waste; 2) decommissioned and decontaminated facilities; 3) recycled materials; and 4) consumer products.

The present policy statement by the NRC does not reflect a decision to exempt any material from regulatory control but simply provides the criteria that determine whether an exemption can be granted. A request for exemption must first be made. Then, after a review process and the establishment of appropriate constraints, if the material satisfies the criteria, an exemption can be granted.

According to Robert Bernero, Director of the NRC Office of Nuclear Material Safety and Safeguards, “The heart of the guidelines are the BRC dose criteria.” The commission applied an upper limit of 10 mrem per year exposure to individuals involved in activities requiring a limited number of people. Where there is a widespread distribution of exempt materials, the limiting exposure is lowered by a factor of 10 to 1 mrem/yr. The collective exposure criterion was set at 1,000 person-rem per year. This is equivalent to one million individuals receiving 1 mrem/yr or 100,000 individuals receiving 10 mrem/yr.

It is obvious that there is some level of radioactivity in materials below which regulation is not required and above which it is. For example, most foods have some radioactivity, mainly potassium-40 and carbon-14 (see *Sources and Characteristics of Ionizing Radiation*, Unit II of this curriculum). Brazil nuts are the world’s most radioactive food; the brazil nut endotherm has an alpha activity from radium-226, radium-228, and their decay products as high as 1.4 disintegrations per second per gram. Some consumer products, such as smoke detectors, lantern mantles, luminous-dial watches, etc., also have small amounts of radioactivity but not enough to require regulated disposal.

Nonetheless, the NRC announcement caused some public and corporate concern. It will be interesting to see how the first applications for BRC exemptions turn out.

Previous Section | Table of Contents | Next Section

Source: Federal Register, Vol. 55, No. 128, July 3, 1990, P. 27522.