

MAY 18 1994

Mr. Gary Robertson, Head
Waste Management Section
Division of Radiation Protection
Agricultural Center, Bldg. 5
P.O. Box 47827
Olympia, WA 98504-7827

Dear Mr. Robertson:

This letter is in response to your March 18, 1994 letter which requested technical assistance to aid you in answering several questions regarding the management of wastes containing source material and/or NORM (Naturally Occurring Radioactive Material). We have prepared and enclosed responses to the questions in your letter. These responses state how the Nuclear Regulatory Commission (NRC) staff would handle the questions.

If you have any questions on our responses, please call me at 301-504-2326 or Dennis Sollenberger at 301-504-2819.

Sincerely,


Paul H. LoHaus, Deputy Director
Office of State Programs

Enclosure:
As stated

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RESPONSE TO STATE OF WASHINGTON QUESTIONS

1. Does the NRC interpret the definition of source material given in 10 CFR Part 40.4(h) [sic] to include all uranium and thorium materials, except those ores containing less than 0.05 percent uranium or thorium by weight?

"Source material" is a term precisely defined in the Atomic Energy Act (AEA) and in the Commission's regulations to include naturally occurring elements that are subject to regulation. The definition reads as follows:

Source material means: (1) Uranium or thorium, or any combination thereof, in any physical or chemical form or; (2) ores which contain by weight one-twentieth of one percent (0.05%) or more of: (i) uranium, (ii) thorium or (iii) any combination thereof. Source material does not include special nuclear material.

Under the first part of this definition, all uranium and thorium are defined as source material. Further, the physical and chemical form of the uranium or thorium does not change its inclusion as source material. Under the second part of this definition, ores that contain or exceed the 0.05% by weight of uranium and/or thorium are source material in total. Ores that have less than the 0.05% weight concentration of uranium and/or thorium are not source material and not regulated under the AEA.

2. If the material described in 10 CFR 40.4(h)(2) [sic] is not source material, what does the NRC consider it to be?

As stated above, ores meeting or exceeding the concentration for ore specified in the 10 CFR 40 definition are source material.

3. Does the NRC consider the material described in 10 CFR 40.13(a) to be source material? If it is source material and is declared a waste, would the NRC also consider it to be low-level radioactive waste as defined in 10 CFR 61.2? If it is not considered to be low-level radioactive waste, what is it?

The exemption in 10 CFR 40.13(a) is for "unimportant quantities of source material," and exempts from licensing source material as defined in the first part of the Part 40 definition of source material. The material, therefore, is source material since it must meet the definition of source material in order for this exemption to have meaning.

10 CFR 61.2 states:

Waste means those low-level radioactive wastes containing source, special nuclear, or byproduct material that are acceptable for disposal in a land disposal facility. For the purposes of this definition, low-level waste has the same meaning as in the Low-Level Waste Policy Act, that is, radioactive waste not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material as defined in section 11e.(2) of the Atomic Energy Act (uranium and thorium tailings and waste).

Therefore, any material that contains source, byproduct, or special nuclear material and is not high-level waste, transuranic waste, spent nuclear fuel, or 11e.(2) byproduct material and is considered to be waste would qualify as low-level radioactive waste (LLRW). Please note, however, that materials meeting the criteria for release for unrestricted use would not be subject to regulation as LLRW.

4. Does the exemption given in 10 CFR Part 40.13(a) allow generators of such material to dispose of this material at facilities other than low-level radioactive waste sites?

This question has to be answered considering two separate cases.

Consider as a first case an NRC licensee that has a source material license. The licensee is required to dispose of all materials that exceed the unrestricted release criteria, in accordance with the disposal provisions of 10 CFR Part 20, Subpart K, prior to the Commission terminating the license. All materials that cannot be decontaminated, including those at or below the 10 CFR 40.13(a) limit, must be managed as LLRW. Diluting the material to below the 0.05% level would only increase the volume of LLRW requiring disposal pursuant to 10 CFR 20.2001. Unless specifically authorized in an NRC license, a licensee cannot distribute exempt source material to unlicensed individuals.

A second case could be an individual that never had a specific radioactive materials license and handled only source material in concentrations less than the exemption limit in 10 CFR 40.13(a). In this case the material would not require disposal under 10 CFR 20.2001 because the possessor is not a licensee subject to Part 20. NRC neither requires nor precludes disposal in this case to a LLRW disposal site. However, daughter products, such as radium, etc., may present a NORM hazard and are thus clearly open to State regulation apart from the source material.

5. Does the NRC agree with generators' opinions that uranium and thorium concentrations of less than 0.05 percent by weight are exempted from NRC and Washington State disposal criteria, and should not be classified as low-level radioactive waste?

With respect to whether such material is exempt from NRC disposal requirements, the answer is no for the first case discussed above, except for material meeting the unrestricted release criteria, and yes for the second case.

With respect to whether the material is considered LLRW, the answer is yes in the first case. As stated above, a licensee cannot dilute material to make it exempt under 40.13(a) and all materials generated in decommissioning a licensed site that exceed unrestricted release criteria are LLRW. In the second case, if the material is "acceptable for disposal" in a licensed LLRW disposal facility, it may be considered low-level radioactive waste in accordance with 10 CFR 61.2.