

February 1999.) Following transfer of FUSRAP to the Corps of Engineers, USACE requested a determination from NRC regarding the regulatory requirements for off-site disposal of waste generated through site cleanups. NRC determined that the largest-volume waste stream at FUSRAP sites, wastes that resulted from the extraction of uranium or thorium from ore material, was outside its jurisdiction because of the circumstances under which it was generated (pre-UMTRCA). NRC was later petitioned to review its position (February 24 and March 13, 2000). NRC reaffirmed its position in a 2000 Director's Decision (65 FR 79909, December 20, 2000). As a result, the off-site disposal of the bulk of waste from FUSRAP cleanups is unregulated at the Federal level except through the Superfund program (although USACE uses the CERCLA process at all FUSRAP sites, relatively few of the sites have actually been placed on the National Priorities List).

The Corps of Engineers has pursued a disposal program that includes use of RCRA Subtitle C facilities for its low-activity waste, with higher-activity waste sent to AEA-licensed facilities. Under USACE policies applicable to FUSRAP, appropriate State authorities are requested to verify approval of acceptance of FUSRAP materials prior to disposal. States have varied in their responses to USACE's disposal efforts, with some being receptive to RCRA facilities accepting waste and others opposing it. USACE plans to continue using Subtitle C facilities as a disposal option.

b. TENORM. Many TENORM wastes are also relatively low-activity. Many of these wastes are regulated by States. Wastes with similar radiological characteristics may be managed more or less rigorously from State to State. Some wastes are regulated primarily for chemically hazardous components. Some wastes are not regulated with regard to their radioactive content. Of course, in many instances, there is a lack of information on the radiological characterization of a given TENORM waste and undoubtedly, this has contributed to today's inconsistent regulatory framework. Examples of TENORM wastes include sludges and resins resulting from treating ground water for drinking water, scales and sludges arising from oil and gas production, tailings, slag, or residues from the mining and processing of a variety of ores, and the overburden remaining from the mining of uranium ores to name a few. (Uranium mines are not covered under the AEA. Rather, airborne radon emissions from

underground uranium mines are addressed under the Clean Air Act. (See subpart B of 40 CFR part 61, 54 FR 51654, December 15, 1989.)) Ideally, wastes of similar characteristics presenting similar risks might be managed in a similar fashion.

Although these wastes include a wide variety of waste categories, some delineated by more or less clear institutional boundaries, there are some common traits that may allow the development of a common strategy for management and disposal. Many of these wastes include radioactive uranium and thorium, and/or the daughters of the radioactive isotopes of uranium or thorium, respectively. Many of the wastes are in bulk form, whether it be tailings, or sludge, or residues that might infer a similar management strategy, given a similar range in volumes. We welcome comment on appropriate risk-based strategies to manage and dispose of reasonably similar wastes in a similar manner. For example, would it be better to focus on wastes that are relatively well-controlled but may be somewhat higher in activity, such as drinking water treatment residues, or on larger volume wastes, such as soils, that have the potential for wider dispersal in the environment and subsequent exposures to the public? Which wastes are most difficult to manage? Which pose the greatest risks?

3. Existing Federal Regulations (Low-Activity LLRW)

From the perspective of the Atomic Energy Act, low-activity mixed waste is regulated identically to other forms of low-level radioactive waste. Some LAMW may be identical in radiological characteristics to low-activity LLRW. Logically, it is difficult to argue that the presence of additional hazards (*i.e.*, chemically hazardous material) makes the RCRA-C technology suitable for LAMW but unsuitable for non-mixed low-activity LLRW. However, there are currently several commercially operating disposal facilities capable of accepting low-activity LLRW (though generators will have limited access to two of the three commercial facilities), and the need for additional disposal options is not clear at this time. Nevertheless, we request comment on whether our rule should address non-mixed low-activity LLRW (these wastes would be subject to the same restrictions placed on LAMW in deriving concentration limits, such as using the Class A maximum values as an upper benchmark).

4. Potential for a New "Class" of Disposal Facilities

While we and NRC agree that RCRA Subtitle C landfills could offer appropriate protections for disposal of low concentrations of radionuclides, neither agency intends at this time to create a new regulatory structure comparable to the existing RCRA or LLRW requirements. Rather, the intent is to apply the necessary elements of radiation protection to the hazardous waste framework. In dealing with low-activity mixed waste, we believe this approach is sensible, as individuals disposing of mixed waste must comply with the requirements for both hazardous and low-level radioactive waste. Further, compared to the volume of materials disposed of in RCRA facilities, LAMW volumes are relatively small, even when considering DOE LAMW, so disposal capacity should not be excessively given over to LAMW. However, in extending this approach to pre-UMTRCA byproduct material, TENORM, or non-mixed low-activity LLRW (including that from DOE), we must recognize the potentially large volumes of waste that could be accepted at Subtitle C facilities. It is possible that facilities would apply to be sited and permitted under Subtitle C based on the prospect of taking low-activity waste that is not regulated under Subtitle C (or subject to RCRA at all), but may in fact be predominantly AEA material. This would not necessarily be inappropriate, since the intent is to demonstrate that the Subtitle C technology would be adequately protective in such a situation, but we believe it important to acknowledge the possibility. We request comment on this issue, and how we might alleviate any concerns.

C. Request for Information: Other LARW

To assist us in understanding the present situation regarding Pre-UMTRCA byproduct material, TENORM wastes, and other low activity radioactive wastes we request information to clearly understand the present regulatory framework associated with each waste and to provide more complete waste characterization. Information on these wastes has been produced by industry, States, Federal agencies, and academic institutions and it is important to garner up to date information to better guide our deliberations for future efforts. Along these lines, we welcome the following types of information:

- *Regulatory Requirements:* What are the significant regulatory requirements applicable to the waste in question? We recognize that a given waste might be