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USNRC**

Secretary  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555  
ATTN: Rulemaking and Adjudications Staff

July 2, 2003 (10:11AM)

**OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF**

Dear Mr. Secretary:

On May 21- 22, 2003 representatives of the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) Radiation Focus Group attended the Nuclear Regulatory Commission (NRC) workshop entitled "Controlling the Disposition of Solid Materials" in Rockville, MD. This Focus Group's comments have not been reviewed or adopted by ASTSWMO's Board of Directors, and therefore, this submittal reflects the views of the Radiation Focus Group. The word "States" throughout this document refers to the members of the ASTSWMO Radiation Focus Group. In addition, individual State programs may submit comments directly to you conveying their own perspectives.

We would like to thank the Commission for their continued attempts to address this issue and provide a more streamlined and predictable manner of managing these materials. However, we were quite surprised with the similarity of this meeting to the meeting held in 1999, and it appears that little progress has been made over the past four years. We believe that at this point NRC must chart a course that leads to hard decisions and the development of a Clearance Rule, or abandon the effort based on stakeholder opposition and continue with the existing case-by-case review. As noted in the previous Radiation Focus Group comments submitted in 1999, the case-by-case approach does work; however, it does not provide for consistent decision-making or assessment of cumulative impacts. It has led to some degree of ambiguity and confusion, and it is time consuming.

While States continue to be open to the development of regulations, and updating and expanding existing guidance to clarify this subject, the commission must understand that these are acceptable outcomes to us only if the agencies and departments of the Federal government act in unison and agree on all the provisions of these regulations and guidance. We cannot support independent and inconsistent federal directions. State implementers will be among those caught between any conflicting directions, and our experience over the last few years with the disparity of such seemingly basic standards as allowable radiation exposure levels provides us with the empirical basis of demanding fully coordinated federal regulations and guidance. Our agreement with development of national standards is conditioned on such federal consensus.



In addition, while we think the NRC would assist national consistency by establishing safe levels and conditions of release of these materials, we want it clearly understood that agreements are based on the presumption that it is always possible for other levels of government to make independent decisions regarding more stringent standards to meet their individual needs and conditions. Nothing in these regulations should be preemptive of this basic government right, nor should any guidance be framed in such a way as to effectively preempt the ability to implement more stringent standards. Again, our agreement with development of national standards is conditional on this presumed future condition that other levels of government can establish more stringent levels.

In developing a rulemaking on release of solid materials, we recommend that NRC pursue Alternative 2, that is, proceed with rulemaking to supplement its gaseous and liquid release standards in Part 20 by developing dose-based regulations limiting releases of solid material to provide a consistent regulatory framework protective of public health and safety. This is the preferred alternative because: (1) it could provide a consistent regulatory approach nationwide to clearance of solid materials (depending on the compatibility requirements for Agreement States); (2) regulations could save time and resources now spent on case-by-case determinations; and (3) the rulemaking process would provide for public participation and compliance with NEPA.

If a rule is not issued, Regulatory Guide 1.86 should be reviewed to assess whether the surface contamination criteria in it adequately protect public health and safety and the environment. Those criteria that cannot be justified on a health and safety basis should be revised. In addition, dose-based concentration criteria for solid materials should be added because the surface criteria in Regulatory Guide 1.86 may not be protective, depending on the geometry of items. For example, ten sheets of sheet metal could just meet 1.86 limits and so could one metal sphere of the same mass. If both were melted down into respective ingots, one ingot would contain significantly higher concentrations of radioactive material than the other because of the surface-area-to-mass ratios peculiar to the original geometries. A dose-based limit would eliminate this inconsistency when evaluating different geometries and even different radionuclides.

A third option between the use of old Regulatory Guidance 1.86 and a new rulemaking is for the federal agencies to produce a multi-agency guide based on risk/dose considerations, which provides acceptable methods for decision-makers to make case-by-case determinations. This may be preferable to a rule that would be too lax for some and too strict for others. Further, such guidance might be necessary to implement any rule.

One important factor to consider in developing the rule is that many States have a specific exclusion regarding the disposal of all radioactive waste other than some naturally occurring material or household products. The impact of the NRC allowing volumetric contamination in small amounts could cause problems at the facility and with State regulators if the material were taken to a Subtitle D disposal facility. Similarly, if such

material were taken to a demolition disposal site, controls/monitoring are not in place to provide assurance that the contamination would not leach from the material. Therefore, the release concentration that is defined should be sufficiently low to prevent such problems. NRC has already approved exemptions and general licenses for a number of consumer products that contain radioactivity in their solid volume. NRC should include an evaluation of the levels permitted in these cases in its analyses of restricted and unrestricted release.

We recommend that the rule permit routine release of materials only for unrestricted use and only if the potential dose to the public from the material is less than a specified level as determined during the rulemaking process. The dose assessments and cumulative impacts assessments may be more complex than those required to support release for restricted use; however, clearance criteria based on unrestricted use would be universal and more efficient. Furthermore, clearance for unrestricted use is the more conservative approach, and does not rely on any future controls or regulation. In addition, tracking issues related to restricted use would be overly burdensome, and susceptible to failure. While release limits will need to be lower for unrestricted use as opposed to restricted use, the rule will be more useful and simple to apply if the assumption is that the material could be put to any use.

Further, the rule would be more efficient if it contained concentrations (similar to the tables in Part 20) derived from that dose limit, rather than requiring a dose assessment each time material is to be released. The rule should also recognize that there might be some restricted uses that could be authorized at a higher limit on a case-by-case basis if properly justified. The dose limit established should be consistent with the international community, should avoid conflict with EPA, must have minimal impact on industries that are sensitive to radiation, and must be acceptable to the public.

Therefore, we would prefer to see a dose limit of 0.01 mSv/yr (1 mrem/yr) recommended as the basis for adopting a table of unrestricted release concentrations for solids. This table should be similar to the criteria in 10 CFR 20 for liquids and gases. In addition, consideration must be given to establishing volume limits as well as a dose limit. Rulemaking should also allow a case-by-case determination for release at concentrations higher than those in the table, for small volumes of material with a use restricted by a licensee. Such determinations should be based on a dose not to exceed 0.1 mSv/yr (10 mrem/yr).

The issue of landfill disposal is also important. Whether waste is restricted to landfill disposal or released for unrestricted use, some or all of it will eventually end up in a landfill. The degree to which States have the capacity to handle or dispose of radioactive wastes varies widely and makes it difficult to categorize the problems that might result from restricting these materials to landfill disposal as the only option. From a technical viewpoint, disposal of solid materials that have been released for unrestricted use should

be acceptable at municipal solid waste landfills meeting 40 CFR 258 criteria. However some States and localities have prohibitions against such disposal. Therefore, NRC or its licensee should closely coordinate with the local authority or State before bringing solid waste to a facility in order to assure the material meets the waste acceptance criteria.

Care should be taken in proposing blanket approval for disposal in industrial solid waste facilities as is being considered in Alternative (2), since not all industrial solid waste facilities meet 40 CFR 258 standards. Even those qualifying to accept conditionally exempt small quantity generator waste (hazardous) under 40 CFR 257 Subpart B for non-municipal, non-hazardous waste landfills (for industrial non-hazardous waste and construction-demolition waste) do not have to meet any minimum standards for design or groundwater protection as in 40 CFR 258, although they have stringent groundwater monitoring and corrective action requirements. EPA has issued guidelines for industrial non-hazardous waste management, but they will not be mandatory.

Further, the term "sanitary waste landfill" should be excluded from consideration because it would have the connotation of being a landfill for sanitary waste, which term is often used synonymously with domestic sewage. Also, the term "sanitary landfill" should not be substituted because although it was once considered as the state-of-the-art landfill, it does not necessarily meet the 40 CFR 258 standards.

We recognize that conditional releases of radioactive materials to landfills and other solid waste management facilities have been allowed for decades, on a case-by-case basis under 10 CFR 20.2002 and corresponding Agreement State regulations. This process has worked well to protect the public, the environment, and solid waste management facilities. However, if the NRC proposes to set a level (whether dose-based or in terms of limiting concentrations of specific radionuclides) at which solid materials may be sent to a solid waste management facility, the NRC needs to consider the unique operating and closure features of such facilities. We understand that it is almost axiomatic to a health physicist that solid wastes containing very low concentrations of certain radionuclides will not pose a hazard in a solid waste landfill, and in fact the radionuclide content of such wastes is insignificant, compared to the naturally occurring radioactive material that is present in all solid waste. However, for such a rule to be accepted, the NRC must demonstrate that no adverse impacts will result. This analysis must take into account the normal operation and closure of solid waste management facilities. In short, both the regulators and the operators of these facilities must be shown that acceptance of these released solid wastes will not change the operation and closure requirements of the facility.

For example, most RCRA D landfills now have leachate collections systems. The collected leachate must be analyzed for possible contaminants, treated, and disposed of. Often, the leachate is sent to a municipal wastewater treatment plant. Questions that will arise if radioactive materials are accepted at the landfill include: Should the leachate now be monitored for radionuclides?; Will the waste water treatment facility still accept the

leachate for treatment?; and, Should groundwater be monitored for radioactive materials? Most landfills also have landfill gas collection systems. Some recover the methane and sell or use it for heat or electric power generation. Others burn the gas in individual or combined flares, and still others release landfill gas passively to the atmosphere. What impacts could the radioactive material have on the landfill gas system? Will those gases need to be monitored for radioactive materials?

For a release criterion to be accepted, the level should be set low enough that the acceptance of the radioactive material will not require any special monitoring or treatment of leachate, groundwater, or landfill gases. In short, the acceptance of this waste must not change the RCRA D landfill into something other than a RCRA D landfill.

In addition, the rule would need to consider landfill closure requirements. In many States landfills are maintained for 30 years following closure, with some ability for regulator to extend that. Any analysis of the disposal of radioactive materials should not assume that the landfill would be maintained longer than that, despite the fact that the radionuclides may persist in the environment for substantially longer periods of time. Similar issues arise with respect to other solid and hazardous waste treatments and disposal facilities, such as incinerators and RCRA C facilities.

On May 22, 2003 NRC support staff/contractor stated that, "the current release standards under Regulatory Guide 1.86 result in a dose of about five mrem per year"(paraphrased)." This is more than one mrem per year, which is the proposed limit under the Alternative (2) dose-based approach. Several of the participants did not perceive this but instead maintained that the dose-based approach would result in much worse environmental condition than under present practices. In the EIS, NRC should specifically reference the comparison of dose between Regulatory Guide 1.86 and each alternative proposed. Public representatives present at the meeting were interested in zero added dose and recycling industry representatives were interested in zero radiation added to feedstock. NRC may be able to resolve opposition by demonstrating that a new dose based approach would be more conservative than Regulatory Guide 1.86 and would result in a dose approaching zero risk to health and zero contamination of recycling facilities. It should be noted that the accidental melting of sealed sources in metal recycling facilities is not addressed by any of the proposed alternatives and has altogether different causes and solutions. Sealed sources were a matter of debate at the meeting but they present different problems and should be addressed separately.

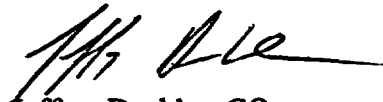
States often use multi-pathway computer analysis, on a case-by-case basis, to evaluate public dose potential when Regulatory Guide 1.86 with its surface release criteria is not adequate. Characteristically this has to be done when considering volumetric contamination. Added benefits are consideration of maximally exposed individuals as receptors and consideration of many different exposure pathways such as subsistence farming and use of fish and other aquatic life as food. In recycling scenarios, dose to recycling workers is considered as well as consumer use of different materials for

different purposes and products (e.g. Tennessee evaluated reuse of nickel for an artificial hip). National consensus of a dose-based approach will legitimize much work already being done and provide needed tools and guidance for consistency.

The ASTSWMO Radiation Focus Group appreciates the opportunity to comment on this issue, and NRC's efforts to provide such opportunities throughout this process, so that a consensus on the final rule or guidance can be reached. A fair summary of our comments would be that we support a comprehensive rule if it is consistent across federal agencies, protective of human health and the environment, and does not create new burdens for industry. However, the current case-by-case system is workable, and if stakeholder opposition makes it impossible to move forward with a rule, States are comfortable operating under the existing system. If a rule is not issued, Regulatory Guide 1.86 should be reviewed to assess whether the surface contamination criteria in it adequately protect public health and safety and the environment.

If you have any questions, please contact the ASTSWMO office at (202) 624-5973 or myself by phone at (303) 692-3387.

Sincerely,



Jeffrey Deckler, CO  
Chair, ASTSWMO Radiation Focus Group

cc: ASTSWMO Radiation Focus Group  
ASTSWMO Solid Waste Subcommittee  
ASTSWMO Hazardous Waste Subcommittee