

DOCKET NUMBER  
PROPOSED RULE PR 20  
68FR09595

2498

June 30, 2003

DOCKETED  
USNRC

June 30, 2003 (4:50PM)

Secretary  
US Nuclear Regulatory Commission  
Washington DC 20555  
Attention: Rulemaking and Adjudications Staff  
11555 Rockville Pike  
Rockville, Maryland

OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

Pursuant to Federal Register Notice dated February 28, 2003, The Nuclear Regulatory Commission is seeking comment on the proposed rulemaking on alternatives for controlling the dispositions of solid materials that originate in restricted or impacted areas of NRC licensed facilities that have no or very small amounts of radioactivity. In particular the Commission requested additional comments on alternatives related to a) conditional use (defined as use restricted to certain authorized uses in low exposure environments such as metal in bridges, sewer liens or factory components) and b) disposal in an EPA regulated landfill

Duratek has evaluated the Notice and offers the following comments in response to the questions posed by the Staff on these two alternatives:

With respect to conditional use the Staff posed the following questions:

*(a) Can a scrap/manufacturing/distribution process that is not licensed by NRC provide assurance that the material is limited to its authorized use?*

Duratek Response: No. For scrap processing, radionuclide behavior is dependent upon the temperatures achieved during processing and may result in the concentration of the contaminants. Examples include volatilization of cesium and subsequent concentration in air pollution control equipment, and the "skimming" of uranium during molten metal slagging operations. Note that contributions from surface contamination monitoring techniques currently authorized can be minimized by implementing volumetric assay techniques as final screening of large containers of materials released for unrestricted use.

*(b) Would it be necessary for NRC to maintain regulatory control by licensing all or some portion of the process (e.g., only the scrap process or the scrap and manufacturing process)? Could involvement by another Federal Agency in the scrap/manufacturing/ distribution process provide assurance that the material remains with its authorized use? What are the feasibility, cost, and increased assurance aspects of NRC or other Federal agency involvement?*

Duratek Response: Initial processors of scrap metals should remain licensees of NRC or Agreement States in order to ensure proper disposition of the volatile and "skimmed" radioactive materials separated from scrap. Starting the process under an operational radiation protection program will permit higher levels of radioactivity to be safely processed. Examples include heavy-walled piping and vessels with high levels of surface contamination, but low specific activity when averaged over the item's mass (the situation when melted). Subsequent release of ingots or fabricated products could then be managed under existing standards, such as ANSI N13.12-1999, Surface and Volume Radioactivity Standards for Clearance. An inherent assumption is that the recovery of the resource (metal) is preferred over disposal as waste.

Contaminated scrap processing clearly should operate under NRC (or Agreement State) rule, as opposed to other Federal agencies.

***(c) What are the feasibility, economic, and assurance aspects of a smelter facility being dedicated to such material, either full-time or as a portion of its process capability?***

Duratek Response: The viability of such a "smelter" is dependent upon the disposition of the product.

Options include:

- Production of ingots for subsequent remelting/casting/fabrication of unregulated (unrestricted use) items at unlicensed facilities, or
- Direct fabrication into products released for unregulated use
- Fabrication of items for controlled reuse (conditional use)

ANSI N13.12-1999 provides specific activity guidance for the first two options, with materials at higher concentrations directed to the controlled reuse, assuming such reuse is practical.

***(d) What end use products could be manufactured under such a conditional use, e.g., bridge girders, sewer pipes, industrial coils? Would there be sufficient need for these products so that a process to manufacture them would be viable given the magnitude of material from NRC/AS licensed facilities and/or from other facilities having similar material?***

Duratek Response: Control of materials, once "installed" outside licensed programs will likely be impractical as the general public will be concerned with the possible effects from anything that adds even very small exposures. Assuming a dose-based restriction on conditional reuse items, the time frame for custodial requirements will be dependent on the use of the materials (dose pathway) and the half-life of the contaminants. Military or other government entities may be the only practical areas for such conditional reuse.

***(e) What typical lifetimes might the conditional (authorized) uses have, and what would likely happen to the solid material after the lifetime was over? Could the material continue to be part of a conditional use, or would it become available for unrestricted use?***

Duratek Response: Lifetime estimates are dependent upon applications, as yet undetermined. If recycled metal could be used, for example, at Yucca Mountain, then lifetime would be commensurate with the use in the repository. Conditional use should be restricted to long term controlled or licensed programs but in any case should result in deed restrictions for a period of time deemed adequate for decay.

***(f) What criterion of acceptability should be used before allowing release of solid material to a conditional use (e.g., should dose-based or concentration-based criterion be used and what should it be?)***

Duratek Response: Dose is related to concentration via pathway analysis; they are the same. Doses, and derived limits, must be derived for each conditional reuse application. ANSI N13.12-1999, Surface and Volume Radioactivity Standards for Clearance provides reasonably conservative guidance for unconditional reuse (limits equate to 1 mrem/year, maximum), and can be used as a threshold above which materials are either conditionally released or disposed as LLRW.

With respect to landfill disposal at a RCRA Subtitle C or D landfill the Staff posed the following questions:

***(a) Would placing the material in a RCRA Subtitle C site accomplish the goal of isolating the material from the public? If so, what controls are in place in a RCRA Subtitle C site to provide such assurance?***

***(b) Would placing the material in a RCRA Subtitle D landfill accomplish the goal of isolating the material from the public? If so, what controls are in place in a RCRA Subtitle D site to provide such assurance?***

***(c) What criteria of acceptability should be used before allowing disposal of solid***

***material at a landfill such that the public and landfill workers are protected? In particular, should a different regulatory scheme be used depending on the radioactivity level of the material potentially to be placed in the landfill facility, i.e. lesser requirements if the potential dose is lower?***

Duratek Response (a, b, c): Licensees should continue to be the point of regulation. A dose-based (1 mrem/year recommended) set of limits should be derived by licensees for individual landfill characteristics (subject to radiation control regulator approval). Continued endorsement of RESRAD and D and D pathway analyses, and updated guidance documents (i.e., PG8-08) are needed by licensees for implementation.

***(d) Is it necessary for NRC to maintain regulatory control to achieve the desired isolation of NRC regulated material from the public? If so, is there a need for NRC to license a RCRA landfill either under a specific or general license, or is an exemption with specific conditions adequate to cover material that has come from NRC-licensed facilities? What cost considerations need to be taken into account and what possible additional assurance of isolation might be realized under these regulatory approaches?***

Duratek Response: The regulation should remain focused on the licensees releasing the materials, not on the landfill operators. There should be a single regulatory agency that oversees this process.

We appreciate the opportunity to provide comments on this important subject.



Willis W. Bixby  
Vice President Environment Safety, Health and Quality Assurance  
Duratek, Inc