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June 27, 2003

Secretary  
U.S. Nuclear Regulatory Commission  
Attention: Rulemaking and Adjudications Staff  
Washington, DC 20555

DOCKETED  
USNRC

July 1, 2003 (4:45PM)

OFFICE OF SECRETARY  
RULEMAKINGS AND  
ADJUDICATIONS STAFF

References: Docket No. 70-143; SNM License 124

Subject: **Comments and Recommendations Regarding NRC's  
Rulemaking for Controlling the Disposition of Solid Materials**

Dear Sir:

Nuclear Fuel Services, Inc. (NFS) appreciates the opportunity to provide comments and recommendations regarding the subject rulemaking for controlling the disposition of solid materials<sup>1</sup>. NFS hopes that our suggestions are useful to the United States Nuclear Regulatory Commission (NRC) as it proceeds with this rulemaking.

NFS encourages the NRC to proceed with the rulemaking process by promulgating generic, dose-based radiological criteria for the "unconditional release" of solid materials. The current approach for allowing the unrestricted release of solid materials is adequately protective of public health and safety<sup>2</sup>. However, the existing radiological criteria contained in these policy directives are based on instrument-detection capabilities that have been in existence since 1974 and should be revised commensurate with dose-based standards currently used to protect the general public. Use of the NRC's risk-informed performance based philosophy to establish radiological criteria and the associated survey methods required for implementation is well suited for implementing this proposed rule. Moreover, NFS believes that promulgating uniform, dose-based standards, in lieu of radiological criteria specified in the referenced regulatory policy

<sup>1</sup> NRC Requested Comments on *Rulemaking on Controlling the Disposition of Solid Materials: Scoping Process for Environmental Issues and Notice of Workshop*, Federal Register, Volume 68, Number 40, dated February 28, 2003.

<sup>2</sup> The current approach allowing for the unrestricted release of solid materials for fuel cycle facilities is based on Regulatory Guide 1.86 *Termination of Operating Licenses for Nuclear Reactors* (June 1974), Policy and Guidance Directive FC 83-23 *Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source and Special Nuclear Materials* (November 1983), and specific exemptions under Title 10, Code of Federal Regulations, Part 20.2002.

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directives, will enhance public confidence with respect to NRC fulfilling its responsibilities for protecting public health and safety from sources of ionizing radiation.

**NFS recommends that the NRC establish generic radiological criteria for unrestricted release of solid materials that are inherently safe for members of the general public. The basis for establishing generic radiological criteria should rely on regulatory concepts used by the NRC for the past decades to constrain sources of radiation, such that members of the general public do not exceed an annual effective dose of 100 millirem. Moreover, the NRC should promulgate an annual dose standard of one millirem that would allow the unrestricted use, and thus require no further regulatory controls for the disposition of solid materials. These recommendations are consistent with the concept of Negligible Individual Risk Level (NIRL)<sup>3</sup> and specifying limitation for radiation exposures for members of the public, as expressed in the National Council on Radiation Protection and Measurements (NCRP) Report No. 116 titled *Limitation of Exposure to Ionizing Radiation*.**

**NFS encourages the NRC to adopt the annual dose limit and derived screening criteria contained in the American National Standard Institute/Health Physics Society (ANSI/HPS) Standard N13.12, *Surface and Volumetric Radioactivity Standards for Clearance* (ANSI/HPS N13.12, 1999) in support of this rulemaking. These screening criteria provide a basis to ensure that members of the public will not receive an annual effective dose in excess of one millirem from multiple radiological sources or practices related to the clearance of solid materials while also limiting individual exposures to less than 100 millirem per year. As such, the recommendation to constrain individual sources of radiation to these levels is protective of public health and safety and fully consistent with those proposed in the aforementioned NCRP report.**

**NFS' recommendation to adopt ANSI N13.12 is supported by the *National Technology and Transfer Act of 1995*, (Public Law 104-113) and OMB Circular A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards*. This legislation and the companion policy directive encourages regulatory agencies to use voluntary, industry consensus standards developed by the private sector whenever possible. The purpose of this legislation is to eliminate excessive licensee cost by encouraging government regulatory agencies to rely on voluntary, industry standards in lieu of developing their own standards. As such, NFS believes that the NRC should adopt use of this National Standard as the basis for establishing radiological criteria in support of this rulemaking.**

**NFS encourages the NRC to evaluate practices used by members of the European Community (EC) to control the disposition of solid materials. Currently, several members of the EC have established clearance criteria that allows for the unrestricted use of "inherently safe" sources of radiation. These member countries have elected to establish radiological criteria allowing clearance of solid materials to more effectively support commerce across international borders. The derived screening criteria adopted by the EC are based on safety standards**

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<sup>3</sup> NCRP Report No. 116 defines "Negligible Individual Risk Level" as the level of average excess risk of fatal health effects attributable to radiation below which efforts to reduce radiation exposure to the individual is unwarranted.

developed by the International Atomic Energy Agency (IAEA)<sup>4</sup> that are similar to those specified in ANSI N13.12 which also constrain radiation source, such that no member of the general public may receive an annual effective dose in excess of one millirem from the clearance of solid materials. The NRC is therefore encouraged to evaluate the effectiveness of the EC in promoting commerce of inherently safe sources across international borders within the scope of this rulemaking.

NFS believes that the NRC should also evaluate the survey methods used by the EC to support the disposition of solid materials. Current methods cited in Draft NUREG-1761 titled *Radiological Surveys for Controlling Release of Solid Materials* are currently proposed to support implementation of this rulemaking. However, these methods may not be cost-effective, or suitable for distinguishing licensed materials from background radioactivity. This concern may be especially relevant for discerning long-lived, alpha-emitting radionuclides that are typically processed at fuel cycle facilities from background radioactivity. The NRC is encouraged to evaluate the effectiveness of survey methods supporting clearance of solid materials that have been used by the EC for these select radionuclides. NFS believes the radiological criteria supporting the disposition of solid materials must be considered jointly with the survey methods that will be required to support implementation of this rulemaking.

NFS recommends that the impacts to regulatory programs associated with the reduced volume of Low-Level Radioactive Wastes (LLRW) that may be generated, as a result of this rulemaking, be included within the scope of the supporting Generic Environmental Impact Statement. Use of the volumetric radiological criteria, such as those contained in ANSI N13.12, may result in significant improvements in the ability to characterize potentially contaminated wastestreams and thus, more precisely determine the appropriate regulatory disposition of solid materials. NFS believes that adoption of the volumetric criteria contained in ANSI N13.12 may result in a significant reduction in the volumes of LLRW that are currently being generated by the licensed community. As such, these issues need to be included as a basis for selecting of the alternative that will support promulgation of this rulemaking.

NFS supports the concept of "conditional use" of solid materials provided that consideration of this alternative within the scope of the rulemaking does not include a prohibition against the unrestricted use of inherently safe sources. In addition, developing generic radiological criteria to support "Conditional Use" alternatives may be problematic considering the broad nature and potential uses of solid materials, ranging from commercial reuse or recycle, to alternative disposal at Resource Conservation and Recovery Act (RCRA) facilities.

We believe that for the "Conditional Use" alternative, an evaluation on a case-by-case basis, in lieu of generic rulemaking, may be more effective at fostering public confidence in the regulatory process. Should the NRC elect to pursue the "Conditional Use" alternative, early consultation

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<sup>4</sup> IAEA Safety Series No. 115 *International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources*, February 1996.

with other Federal and State regulatory agencies is recommended to address issue involving land disposals at sites regulated by the United States Environmental Protection Agency.

NFS appreciates the opportunity to provide comments and recommendations regarding this important rulemaking. If you or your staff have any questions, require additional information, or wish to discuss this, please contact me, or Mr. Rik Droke, Licensing and Compliance Director, at (423) 743-1741. Please reference our unique document identification number (21G-03-0182) in any correspondence concerning this letter.

Sincerely,

**NUCLEAR FUEL SERVICES, INC.**



**B. Marie Moore  
Vice President  
Safety and Regulatory**

JSK/ /rcy