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DEPARTMENT OF NUCLEAR SAFETY

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George H. Ryan
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December 30, 1999

Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
Attn: Rulemaking and Adjudications Staff

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OSP

Re: All Agreement States letters;
SP-99-027, Draft NUREG-1640, and
SP-99-064, Release of Solid Materials Issues Paper

Gentlemen:

The Illinois Department of Nuclear Safety (Department) has reviewed Draft NUREG-1640 "Radiological Assessments for Clearance of Equipment and Materials from Nuclear Facilities," that describes dose factor calculations and "critical group" characterizations for persons potentially associated with the release of equipment and solid materials as well as the "Issues Paper" that requests comments on the major issues associated with "a rulemaking that would set specific requirements on releases of solid materials."

The Department has no comments on draft NUREG-1640. The Department's comments on each of the issues identified in the Issues Paper are provided later in this letter.

The Department has three primary concerns regarding the concept of Release of Solid Materials.

1. A standard should be specified in terms of dose. The comments on the issues provide rationale for this item.
2. Setting the standard must be distinct and different from the choice to implement such an approach. As an Agreement State, the Department wants flexibility in application so that case-by-case evaluations may still be performed by the State.
3. The Department is concerned about the reaction of the principally effected industries. Although apparently not overly concerned about a small radiation dose, the potential loss of market share is causing these industries to strongly oppose the unrestricted release of solid materials that may be unknowingly recycled by them.



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Issue No. 1 - Should the NRC Address Inconsistency in its Release Standards by Considering Rulemaking on Release of Solid Materials?

At least these inconsistencies should be addressed:

- 1) how air/water effluents vs. solid releases are evaluated and restricted, and
- 2) how case-by-case solid-release reviews compare to one another.

The NRC should establish by rulemaking a dose (TEDE) standard for "free" release of solids. The rule need not establish dose-based activity or concentration standards.

Issue No. 2 - If NRC Decides to Develop a Proposed Rule, What are the Principal Alternatives for Rulemaking that Should be Considered, and What Factors Should be Used in Making Decisions Between Alternatives?

The scope of the rulemaking should be limited to establishment of the dose standard as a fraction of the current 100-mrem/yr limit. For the maximally-exposed individual, a 10-mrem/year standard provides adequate assurance that the 100 mrem/year limit will not be exceeded. A member of the general public will be exposed to a fraction of the TEDE for the maximally-exposed individual, therefore, establishing a second lower limit (such as 1 mrem/year) should not be necessary.

The rule does not have to establish or reference activity-concentration limits, even though they may be directly based upon the dose standard (i.e., "dose-based" standards.) All other "limits" based on the dose standard can be addressed in NUREG guidance. The NRC should consider following an approach similar to the license termination (decommissioning) rulemaking, wherein the dose standard is established by rule, and guidance on demonstrating compliance with the rule is provided in a NUREG (*similar to DG-4006; "Demonstrating Compliance with the Radiological Criteria for License Termination."*) Regulatory Guide 1.86 should either be extensively revised, or retired by incorporation into the compliance-demonstration NUREG.

The evaluation of potential dose is highly dependent upon widely-variable material characteristics and exposure pathways of the candidate solids to be released, as well as the identification and characterization of the maximally exposed group(s). Demonstration of compliance will most likely continue to require case-by-case review. This is not necessarily burdensome, as standardization of the dose, the demonstration requirements and the review method will ameliorate the current regulatory workload. Satisfactory incorporation into the rule of concentration standards that adequately address all of the potential variables for all cases is improbable. NUREG guidance can be an effective mechanism for defining: concentration standards, screening limits, overall release evaluation, and demonstration of compliance with the dose standard in the rule. Adequate NUREG guidance can achieve the stated objective of consistent, standardized case-by-case reviews.

Issue No. 3 - If NRC Decides to Develop a Proposed Rule Containing Criteria for Release of Solid Materials, Could Some Form of Restrictions on Future Use of Solid Materials be Considered as an Alternative?

Restricted release should not be considered unless there is a system of registration, tracking and accountability. This would create a new category of "licensee" that the agency of jurisdiction would have to track and inspect. It is the responsibility of the regulatory agency to ensure public safety, which it can not do without establishing this new class of licensee. Due to the potential regulatory-oversight workload, consideration of restricted release is strongly discouraged.

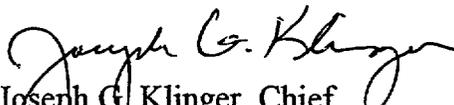
If, however, restricted releases will be limited to materials that will be used to fabricate items such as LLRW disposal containers, this is not an unreasonable consideration. The criterion for restricted use should be that the potential hazard presented by the released material (e.g., LLRW container) is insignificant compared to the hazard from the associated application (e.g., LLRW in the container.) Restricted release applications should take the materials "out-of-circulation" in such a manner that the materials are not likely to ever be recycled. Regulatory tracking would not be required as long as "permanent" segregation is reasonably assured. These applications should require case-by-case review, and should be illustrated in regulatory guidance documents.

Issue No. 4 - If NRC Decides to Develop a Proposed Rule, What Materials Should be Covered?

Current regulatory standards and regulations have taken years to refine, and it is unreasonable to expect that a new rule can be developed that will immediately address all potential applications. The NRC should proceed with rulemaking and guidance that can be reliably considered appropriate. If the new rule addresses only the dose standard, any future additions/revisions can be made to the regulatory guidance documents, without revision of the rule. The objective should be to eventually provide for the safe release of any form of solid material that meets the adopted dose standard.

Should you have any questions regarding the Department's comments, please contact Steve Collins at (217) 785-969842.

Sincerely,


Joseph G. Klinger, Chief
Division of Radioactive Materials

JGK:DSP

cc: Jim Lynch, State Agreements Officer
✓ Frederick C. Combs, Deputy Director, Office of State Programs