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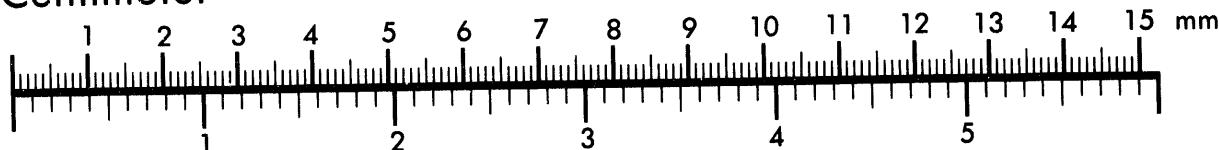
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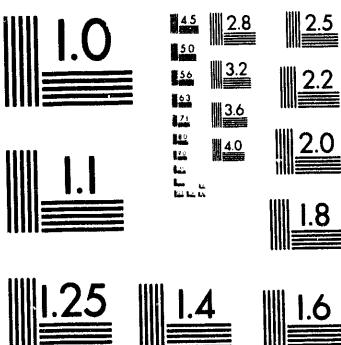
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RECYCLING OF RADIOACTIVELY CONTAMINATED MATERIALS:

PUBLIC POLICY ISSUES

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RECYCLING OF RADIOACTIVELY CONTAMINATED MATERIALS: PUBLIC POLICY ISSUES¹

Recycling radioactively contaminated materials requires varying degrees of interaction among Federal regulatory agencies such as the Nuclear Regulatory Commission (NRC) and the Environmental Protection Agency (EPA), State governments and regulators, the public, and the Department of Energy. The actions of any of these parties can elicit reactions from the other parties and will raise issues that must be addressed in order to achieve a coherent policy on recycling. The following discusses potential actions and reactions of Federal regulatory agencies (defined as NRC and EPA), the States, and the Department and the policy issues they raise. These actions, reactions, and associated issues are charted in Table 1.

Federal Regulatory Action and Possible State Reaction: Establishing Unrestricted Release Limits

Federal regulatory agencies may identify a residual contamination level that allows for the unrestricted release into the public domain of materials contaminated at or below this release level. Release levels could be established for surface and volumetrically contaminated materials. The quantity of contaminated materials which could be recycled or disposed in municipal landfills depends upon the stringency of the release levels.

States may react to this Federal action by 1) establishing more stringent residual levels or release requirements, or 2) requiring the disposal of any materials which would have been considered low-level wastes as of October 24, 1992 (the date on which the Energy Policy Act became law). States can do this even though such materials might be acceptable for unrestricted release according to the Federal criteria.

The first reaction would be based upon States' traditional powers to protect the health and welfare of their citizens. The second, which would effectively preclude recycling, would be founded in Title 29 of the Energy Policy Act of 1992 which created section 276 of the Atomic Energy Act (AEA). Under this new provision of the AEA, States are authorized to "regulate, on the basis of radiological hazard, the disposal or off-site incineration of low-level radioactive waste" if the NRC exempts these wastes from regulation. Prior to passage of the Energy Policy Act, several States had already passed laws requiring disposal of any material which was classified as low-level as of the date of the State law's passage.

The possibility that States will establish release limits more stringent than Federal limits raises a legal issue. The issue is whether recycling of contaminated materials is a problem of sufficient national scope to claim that a Federally

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established unrestricted release limit preempts State actions establishing more stringent residual limits or requirements. Generally, if a Federal law or regulation has completely controlled all aspects of an issue the States are preempted from regulating that issue. For example, are radioactively contaminated materials like garbage and thus protected from undue State regulation by the commerce clause of the Constitution? Under a series of Supreme Court cases, garbage has been declared a commodity in the stream of commerce and is thus protected from States' efforts to control it in ways that would unjustifiably interfere with its interstate movement. If radioactive contaminated materials are given the same legal status as garbage the States would be preempted from establishing standards more stringent than Federal rules.

Ultimately, this policy question will be resolved by the courts. However, the judicial process will probably only be triggered after a Federal regulatory agency has issued a final rule establishing residual contamination standards, a State issues a more stringent regulation, and a conflict arises as to which standard applies.

Federal Regulatory Action and Possible State Reaction: Establishing Restricted Release Limits

The Federal regulatory agencies could establish restricted release limits for contaminated materials and any consumer products made from them. These materials or products could only be utilized by specified users such as Federal facilities (DOE or DoD operations) or nuclear power plants. Storage and disposal casks and shielding blocks are among the suggested uses for restricted release materials.

It is unlikely that States would react negatively to a Federal regulatory approach of this type. States historically have not controlled or influenced Federal facilities' choices to utilize contaminated materials, or products made from them, in their internal operations. Since nuclear power plants are licensed by the Federal government rather than States, the States would not be involved in controlling the use of recycled materials in the plant.

The concern posed by this regulatory situation is the potential amounts of contaminated materials which could be recycled. Does the quantity of contaminated materials exceed the needs of Federal facilities and the nuclear industry for products made from these materials? Does the limited size of the market for restricted use materials make the recycling endeavor cost ineffective? Answers to these questions demand an accurate contaminated materials inventory, a needs assessment of possible end users of these materials, and an accurate and comprehensive cost and benefit assessment of the recycling and its avoided costs.

Possible Effects of Maintaining the Regulatory Status Quo

NRC Exemption

The NRC currently has authority to consider case-by-case petitions from persons or classes of persons for approval to recycle or dispose of some radioactive contaminated material as non-radioactive. If the NRC approved a request to dispose of minimally contaminated radioactive materials in a municipal landfill, States with laws requiring disposal in an NRC licensed disposal facility of any materials classified as low-level as of the laws' passage could invoke the laws to prohibit municipal landfill disposal in spite of NRC approval. Similarly, if the NRC approved a recycling request, States could rely upon their health and welfare protection powers to establish more stringent standards that would preclude the recycling. The policy issue again is one of the ability of States to issue health and safety standards to protect their citizens in the face of a Federal agency standard.

Site by Site Determination

The EPA, with input from affected States, determines the radioactive cleanup standards for facilities on the National Priorities List (NPL). The selected standards, if used as release criteria, could either expedite or eliminate opportunities for recycling of contaminated materials or their disposal as non-radioactive wastes. Radioactive cleanup standards that are established on a site-by-site basis can result in un-predictable amounts of recyclable materials because release limits could vary. This uncertainty regarding the supply of contaminated materials could affect the cost effectiveness of recycling. Un-predictability of cleanup standards would also affect efforts to predict cleanup costs because disposal in a low level waste facility could be required for materials at one site but not for similarly contaminated materials at another site.

DOE Decision

DOE can, under the AEA, establish a policy to recycle its own contaminated materials for internal use. As part of that policy, it would determine the limits for release and the survey techniques supporting those levels. The Department would probably voluntarily seek some consensus with NRC and EPA on those levels and techniques. States would probably not object to this action and it appears to have the support of environmental groups.² The concern is whether DOE operations can absorb its present and future contaminated recyclable materials. Another question is whether recycling for DOE internal use only would be cost effective given the relatively low cost of disposal at Federal sites and the potentially high costs involved in assaying materials to determine their appropriateness for recycling.

Alternately, the Department could allow the release of its volumetrically

² Mariotte, Michael, Statement Before the House Science Committee on Energy, May 27, 1993.

contaminated materials under its present authority in DOE Order 5400.5. The proposed rule at 10 CFR 834 also grants DOE this authority and extends it to surface contaminated materials. Under the proposed rule, DOE could authorize releases of contaminated materials upon its development and approval of release limits and the survey techniques used to characterize the materials. These materials could be released into the public domain or DOE could restrict them to the nuclear energy industry or activities related to DOE operations. A DOE decision to release materials for restricted use is unlikely to be challenged by the States or the NRC or EPA if the Department seeks some consensus from those agencies when developing its release levels and survey techniques. The unrestricted release of these materials could meet with opposition from States and/or the EPA unless EPA agrees to the release limits.

State Action and Possible Federal Reaction:
Approve Recycling or Disposal as Non-Radioactive

States can allow the recycling of contaminated materials or allow their disposal in municipal landfills - until such action is determined to be preempted by a Federal regulation. If the NRC or EPA determined that the State approval was egregious, either agency could attempt to veto the approval.

State-by-state decision making in these matters can result in non-uniformity of release levels or levels allowing for disposal as non-radioactive. This can result in uncertain quantities of recyclable materials which could affect the cost effectiveness of recycling. Predicting disposal costs could also be affected by States' varying determinations because disposal in a NRC licensed facility could be required for materials in one state but not for similarly contaminated materials in another state.

Role of Public Participation in Policy Issues

The impact of public opinion on Federal and State governments and agencies as they make decisions affecting the disposition of radioactively contaminated materials cannot be underestimated. The Below Regulatory Concern (BRC) incident is proof of the impact of an angered public; the NRC's experience to date with the enhanced participatory rulemaking process is evidence of the public's willingness to participate meaningfully in the decision making process.

Meaningful public participation requires that government officials and regulators understand how a broad spectrum of people perceive and respond to risk -- specifically how the risk associated with radioactivity is perceived. Regulators, scientists, and members of the general public may hold vastly divergent views of the risks involved in recycling radioactively contaminated materials but it is the public's perception which is crucial if contaminated materials are to be released for unrestricted use.

Table 1

ACTION	REACTION	ISSUES
EPA or NRC Establish Unrestricted Release Limits	States may: 1) Establish more stringent release limits, or 2) Require disposal of material considered LLW as of 10/24/92 Public may object	Can States establish more stringent standards than Federal standards? What is the legal status of contaminated material?
EPA or NRC Establish Restricted Release Limits	None expected; could be viewed as ploy to obtain approval for future unrestricted recycle	Does quantity of material exceed need? Does limited market make recycling cost ineffective?
Maintain Status Quo: a) NRC Case-by-Case Exemption	a) States may: - Establish more stringent release limits, or - Require disposal of material considered LLW as of 10/24/92 Public may object	a) Can States establish more stringent standards than Federal standards? What is the legal status of contaminated material?
b) NPL Site by Site Cleanup Standards	b) States may press for cleanup standards that expedite or eliminate recycling Public will be involved in selecting standards	b) Will variable standards result in unpredictable quantities of recyclable material and uncertain cleanup costs?
c) DOE Internal Use	c) Public would probably not object	c) Does quantity of material exceed need? Does limited market make recycling cost ineffective?
d) DOE Decision to Release	d) EPA or NRC may object to DOE limits for restricted release Public, EPA, NRC may object to DOE limits for unrestricted release	d) Does quantity of material exceed need? Does DOE want this exposure in the absence of an NRC or EPA release limit?
States Approve Recycling or Disposal as Non-radioactive Waste	EPA, NRC, Public could protest approval	Will variable State standards result in unpredictable quantities of recyclable material and uncertain cleanup costs?

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