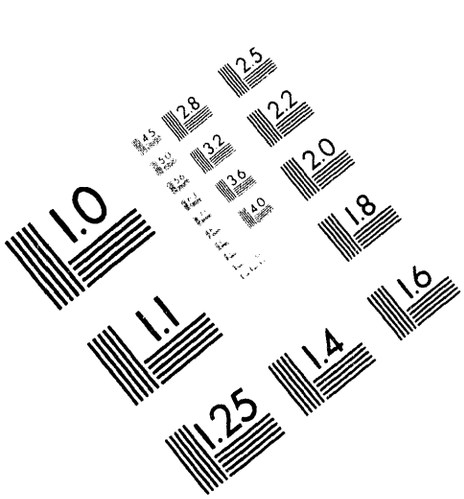

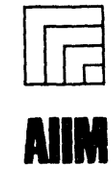

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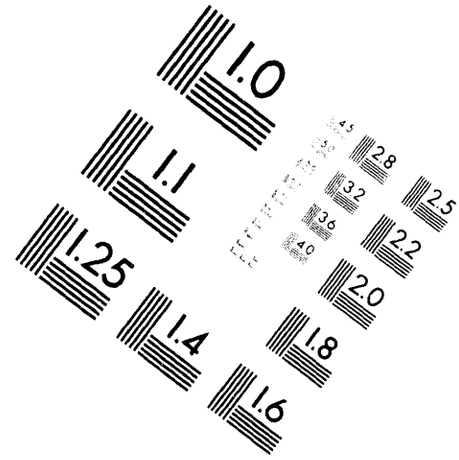

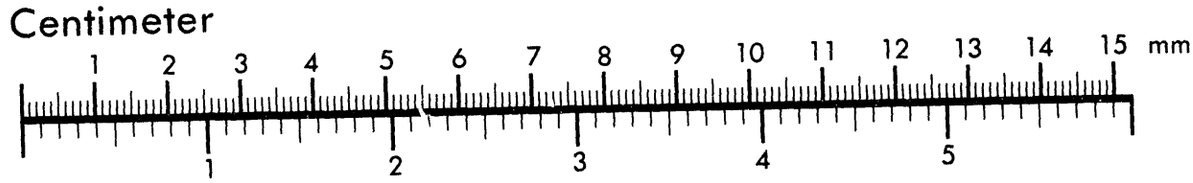

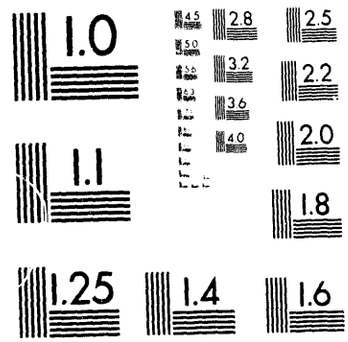

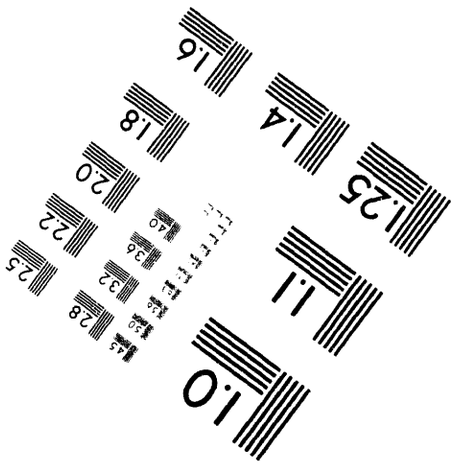

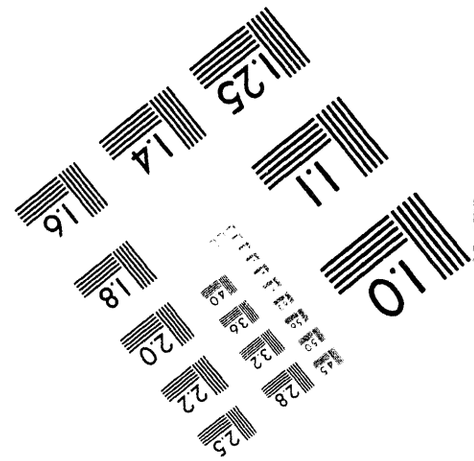

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MAJOR ISSUES ASSOCIATED WITH DOE COMMERCIAL RECYCLING INITIATIVES

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MAJOR ISSUES ASSOCIATED WITH
DOE COMMERCIAL RECYCLING INITIATIVE

Major initiatives are now underway within DOE to recycle large volumes of scrap material generated during cleanup of the DOE Weapons Complex. These recycling initiatives are driven not only by the desire to conserve natural resources, but also by the recognition that shallow level burial alone is not a politically acceptable option for all classes of DOE remediation waste.

The Fernald facility, site of the first DOE Environmental Restoration Management Contract (ERMC), is in the vanguard of a number of major DOE recycling efforts. These early efforts have brought a number of issues to light that can have a major impact on the ability of Fernald and other major DOE sites to expand recycling efforts in the future.

Some of these issues (some resolved and some unresolved) and their current status are as follows:

1. SECONDARY WASTE DISPOSITION

Issue

Which organization, DOE or recycling contractor, is the generator of secondary waste generated as a result of processing DOE material? The determination as to which organization generates the secondary waste dictates the method in which the secondary waste will be dispositioned. If DOE is identified as the generator of the waste, the secondary waste must be disposed of at a DOE facility or a DOE approved facility in accordance with DOE Order 5820.2A

Resolution

Fernald has adopted the established industry position that secondary that can be attributed solely to DOE will be considered DOE waste and, as a result, disposed of at a DOE disposal facility. On the other hand, waste that cannot be solely attributed to DOE will be considered the recycler's waste and therefore disposed of at a commercial burial site in accordance with the agreement state's license governing the operation of the recycling facility.

2. TITLE TO MATERIAL AND RADIOACTIVE CONTAMINANTS

Issue

The issue is the point at which title to DOE material and contaminants that are shipped to a commercial recycling facility pass from DOE to the recycling contractor. This issue is important because of liabilities associated with handling of the material and the waste generated from the material after it leaves the DOE site.

Resolution

For material delivered to a recycling vendor at the DOE site, title passes in accordance with normal commercial practice. Since the recycler will ship material F.O.B. (free-on-board) place of shipment, title to the material will remain with the recycling vendor during

transportation. In this case, the recycling vendor pays for transportation to the recycling facilities and the common carrier acts as the recycling vendor's agent.

Although this logic is consistent with commercial practices, the issue of title to contamination is not so clear. Consistent with the issue of secondary waste generation described above, it appears that title to secondary waste not solely attributed to the DOE generating facility will pass to the vendor only when the vendor commingles DOE waste with commercial waste. Title to radioactively solely attributed to the DOE generator remains with the DOE generator at all times - including during transportation to the recycling vendor, during the recycling process and through to ultimate disposal of secondary waste at the selected DOE disposal site.

3. MIXED WASTE GENERATED DURING RECYCLING

Issue

Recognizing that processing of DOE material may generate waste which will be characterized as RCRA-hazardous, additional controls are required to manage the treatment, storage, and disposal of mixed secondary waste.

Resolution

It is possible that processing the material shipped from DOE to commercial recycling facilities can generate mixed, secondary waste. In most cases, by-products generated during recycling will be treated to create an end-product that complies with applicable land disposal restrictions (LDR). In other cases, however, it is possible that a recycling by-product cannot be successfully treated at the recycling facility and will require further treatment to meet these land disposal restrictions. In such a case, DOE retains possession of this mixed waste material until a appropriate TSD treatment facility is identified.

It should be noted, however, that DOE can retain some level of protection by specifying in recycling contracts that no mixed waste be generated. At a minimum, this should ensure, as part of the contracting process, that recycling processes are clearly evaluated before recycling to ensure that any residues can be treated to meet LDR restrictions.

4. SPECIAL NUCLEAR MATERIAL (SNM) POSSESSION LIMITS

Issue

Most licensed commercial facilities have a possession limit of 350 grams of special nuclear material including U-235, U-233, and plutonium. For facilities such as Fernald that possess components contaminated with enriched uranium, this limitation can create a problem. In some cases, the ability to ship contaminated material to a licensed facility will be limited by the commercial facilities's ability to tranship secondary waste and thereby stay within the recycling facilities special nuclear material possession limit.

Resolution

If it is possible that a recycler's SNM possession limit will be reached, a coordinated effort to tranship any secondary waste generated

as a result of the recycling of the DOE material will be required. Prior planning and understanding of the characteristics of any waste generated are the key to minimizing the schedule impacts of the licensing restrictions. The key is to ensure that secondary waste containing enriched material meets the DOE disposal facility requirements. It must be recognized that characterization data is required to be able to demonstrate compliance with a DOE disposal facility's waste acceptance criteria prior to having approval for shipment.

5. ABILITY TO ACCEPT SECONDARY WASTE BACK AT THE GENERATING FACILITY

Issue

At many DOE facilities, it is difficult to receive waste back at the facility due to internal procedures and agreements with external regulators such as Consent Decrees, Consent Agreements, and Federal Facility Compliance Agreements.

Resolution

In cases where commercial recycling facilities are constipated with special nuclear material (350 gram possession limit) or generate mixed-waste, it may be desirable for the DOE generator to accept secondary waste back at the generator facility for temporary storage. To accept waste back at the DOE facility normally goes against a DOE generator's preference, but it may enable the DOE to disposition large volumes of material at the cost of temporarily storing small volumes of material.

It is important that DOE have a thorough understanding of the disposition options and timing of those options for any secondary waste material being generated as a result of the recycling process. DOE Order 5820.2A specifies that waste acceptance criteria will be established for each TSD facility. Most DOE facilities have this criteria documented. It is a responsibility of the DOE facility to assure that any secondary waste generated that could likely be returned to the DOE facility conforms to the requirements of the DOE facilities waste acceptance criteria and that this information is contained within the recycling contract to assure a timely transfer of the material.

6. COST BENEFIT AND LOW DOE BURIAL RATES

Issue

The issue is measuring the economic value of implementing recycling options over direct burial of DOE material and waste. Burial charges at DOE disposal sites are very low by commercial standards and most certainly do not reflect the full life-cycle costs of land burial of radioactive waste. Additionally, there is no clear guidance from DOE with respect to determining premiums that the Department is willing to pay to recycle rather than bury waste.

Resolution

No clear direction has been provided and FERMCO makes decisions on a case-by-case basis. An evaluation between waste recycling and burial are conducted in each situation and, where it appears to be reasonable, decisions to proceed with recycling versus disposal are made after consultation with the DOE field office.

7. MANIFESTING MATERIAL DESTINED FOR RECYCLING FACILITIES

Issue

At issue is whether material being sent to a recycling facility is required to be manifested under 40 CFR requirements.

Resolution

A hazardous waste manifest is not required to ship material that would otherwise be classified as the RCRA Recycling exemption applies. This exemption for recycling is contained in 40 CFR 261.6.

It is important to note that most licensed facilities that offer services to recycle DOE material do not posses hazardous waste processing licenses and therefore cannot receive material that is manifested as hazardous waste.

8. RELEASE CRITERIA

Issue

At issue is a clear understanding of the requirements for unrestricted release of material with potential surface contamination.

Resolution

DOE has established clear requirements in DOE Order 5400.5 for the "free release" of material for unrestricted use. This DOE Order reflects guidance develcped by the U.S. Nuclear Regulatory Commission in Regulatory Guide 1.86. Despite this guidance, many DOE facilities are reluctant to release releasable material.

Fernald intends to release clean material in accordance with established requirements. For material released directly by Fernald with contamination above background but below established release limits, Fernald will conduct an internal evaluation to verify the acceptability of "first-use" following release. For material processed by recycling subcontractors, Fernald will ensure that recycling subcontractors not only comply with their agreement state license but also that the release disposition channel is evaluated and approved in advance by Fernald.

9. USES FOR BENEFICIALLY REUSED PRODUCTS

Issue

The issue is the availability of options for the beneficial reuse of material that has been volumetrically contaminated. Beneficial reuse involves the reuse of materials at licensed facilities in applications where the radioactivity contained in the matrix is not of a detriment to the reuse.

Resolution

Uses for recycled DOE metal with volumetric contamination have been demonstrated but are limited. DOE has already agreed to utilize shield blocks fabricated from DOE scrap metal. Other initiatives are now underway to fabricate waste containers from this same recycled material.

At issue is the identification of new end products for the huge volumes of potentially recyclable scrap concrete, transite and other material in the DOE complex. It should be noted that DOE may have to create special contract or financial incentives to develop the market for certain classes of recycled products. Such subsidies are consistent with the spirit and intent of Presidential and DOE recycle objectives.

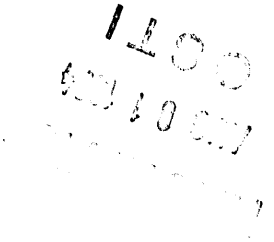
10. STATE FEES FOR MATERIAL TRANSPORTATION

Issue

The State of Tennessee requires a "radioactive waste shippers license "for entities that ship low-level waste to Tennessee for processing, storage or disposal. The license requires an application fee, a fee per pound shipped and proof of liability coverage. At issue is whether DOE can "hold the State of Tennessee harmless of all claims, actions, proceedings in law or equity arising out of radiological injury or damages to persons or property..." Such a provision cannot be agreed to by DOE or its contractors because it would violate the Anti-Deficiency Act (31USC§1341) which prevents a government agency from obligating funds in excess of or in advance of Congressional appropriations.

Resolution

Fernald currently avoids this issue by having recycling subcontractor act as the transporter of waste shipped into Tennessee for recycling. It is expected that legislation will be passed this fall that will exempt federal facilities from the provisions of the Tennessee Act.



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