**Department of Energy**
Field Office, Albuquerque
Los Alamos Area Office
Los Alamos, New Mexico 87544

JAN 1993
RECEIVED
HAZARDOUS WASTE
PROGRAM

JAN 19 1993

TA 55

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Benito J. Garcia, Bureau Chief
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
525 Camino de los Marquez
Santa Fe, NM 87502

Dear Mr. Garcia:

The purpose of this letter is to clarify the position of the Department of Energy (DOE) and the University of California (the University) regarding requirements applicable to recycling units at the Los Alamos National Laboratory (LANL). This letter supplements a letter sent to Mr. Edward Horst, New Mexico Environment Department (NMED) by DOE on May 18, 1992, a copy of which is enclosed. DOE and the University believe that the processes at Technical Area (TA) 55 associated with the reclamation of plutonium (Pu) commingled with hazardous waste are subject to the recycling regulations and are therefore exempt from the hazardous waste permitting requirements. Specifically, while the TA-55 waste streams are subject to the generator, transporter, storage and notification requirements of the New Mexico Hazardous Waste Management Regulations (HWMR) Section 261.6(c), the actual reclamation processes at TA-55 are not subject to the HWMR permitting requirements.

You expressed concern in a December 11, 1992 meeting with DOE and the University that, because the "hazardous" component of the materials is not being recovered, and because Pu is not included in the precious metal exemption, the TA-55 recovery processes may not constitute recycling as defined in the HWMR. As explained below, it is our understanding that it is not necessary that the "hazardous" component portion be recovered for a process to be considered recycling. Also, it is our understanding that both the Environmental Protection Agency (EPA) and NMED intend to regulate mixed waste using hazardous waste regulations. Consequently, recycling rules applicable to hazardous waste also apply to mixed waste and this is discussed below.

This letter examines several issues, with headings for each issue provided. This letter first addresses EPA's intention to

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regulate recycling processes differently than hazardous waste treatment and disposal processes that are subject to Part 264, 265, and 270, interim status and permitting requirements. It then discusses the definition of reclamation, which allows the recovery of either hazardous or non-hazardous components independently. Several examples of different processes considered by the EPA to be recovery processes follow in the next section. A brief clarification of our precious metals discussion is then presented. This is followed by a discussion of the application of hazardous waste regulations to mixed waste. Copies of references are enclosed for your convenience.

**EPA's Intention to Regulate Recycling Differently**

The EPA's regulatory scheme distinguishes the regulation of recycling and reclamation processes and facilities from the regulation of hazardous waste treatment and disposal facilities. The preamble to the hazardous waste management program clearly demonstrates its intent to regulate processes that recycle waste differently from the more "traditional" hazardous waste treatment and disposal processes (see 45 Federal Register 33092, May 19, 1980). In the above preamble, EPA recognized that "proposed Section 3004 treatment and disposal standards . . . may not be well-suited for regulating all hazardous waste recovery and reclamation facilities . . . " EPA further recognized that recovery and reclamation operations would be "different in nature or degree, and therefore may justify the imposition of different management standards." In many cases, effective control of health and environmental hazards could occur "without requiring compliance with Section 3004..." In fact, EPA's definition of solid waste distinguishes recovered and reclaimed materials from other solid wastes. In HWMR-6, Section 261.2, Table I, a sludge or by-product that would otherwise be considered a hazardous waste due to the characteristic it exhibited is not defined as a solid waste when reclaimed and is therefore regulated less stringently. EPA intended to allow more regulatory flexibility for recycling processes than for traditional hazardous waste treatment and disposal processes.

**Definition of Reclamation**

The regulatory definition of reclamation is broad and incorporates both processes that recover the "hazardous" component of the waste and processes that recover a valuable contained material other than the "hazardous" component. EPA defined reclamation to include either regenerating a waste material or processing materials to recover usable products. Essentially, reclamation is regeneration or material recovery

(see 50 Federal Register 633, January 4, 1985). Examples of reclamation include processes that regenerate spent material by removing contaminants (e.g., spent solvent recovery), and processes that separate usable products from spent material (e.g., recovery of metal from secondary material) (50 Federal Register 633 [January 4, 1985] and 48 Federal Register 14487.88 [April 4, 1983]). At no point in the preamble did the EPA interpret the regulation as requiring that the reclaimed metal has to be the component that caused the waste material to be hazardous. In fact, in distinguishing between "use" and "reclamation," EPA described reclamation as that which occurs "when the spent material, sludge, or by-product is itself recovered or when its contained material values are recovered as an end-product. For example, if a metal containing sludge is processed to recover its contained metal values . . ." (see 48 Federal Register 14487.88 [April 4, 1983]). Thus, while spent material, sludge, and by-products are typically hazardous waste, the metal contained in the sludge and later recovered may not necessarily be hazardous waste. Clearly, either hazardous waste or its non-hazardous "contained material" can be the intended component or goal of the recovery process and the process is still considered reclamation by EPA.

**Examples of Recovery of Non-Hazardous Components**

The following discussion is presented to address your concern that the hazardous component of the waste is not recovered in the TA-55 process. Several examples of recognized recycling activities are given below which demonstrate that recycling operations need not recover hazardous components contained in the recycled material.

EPA recognizes burning wastes in industrial furnaces and boilers for energy recovery, material recovery, and waste destruction (see 50 Federal Register 630-31 [January 4, 1985]). In the descriptions of energy and material recovery in furnaces and boilers, no requirement exists to return that which constitutes the hazardous component of the waste to its original usable form. In fact, it would be virtually impossible to do so in the case of energy recovery because the waste is consumed as fuel. During material recovery, an occasion may exist for the hazardous waste portion to be processed into a usable material (e.g., organic wastes processed to recover energy and carbon values, and chlorinated wastes processed to recover energy and chlorine), however, regenerating of the hazardous portion into the original product does not necessarily occur. Furnaces and boilers are nonetheless considered subject to recycling requirements. Additionally, EPA has since promulgated specific regulations in Section 266, Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste

Management Facilities, for furnaces and boilers using hazardous waste for fuel. This again demonstrates EPA's intent to distinguish recycling from hazardous waste treatment operations and to regulate specific recycling activities when deemed necessary. Currently, there are no specific requirements which apply to TA-55 activities in this manner.

Another example of the EPA's inclusion of recovery of substances other than the hazardous waste component in the recycling regulations, is found in the January 4, 1985 Federal Register on page 618. Here the EPA divides recycling activities according to types of secondary materials. These include spent substances such as spent activated carbon and spent catalysts. The fact that the processes for regeneration of carbon and catalysts do not typically recover any of the hazardous waste contaminating these materials supports the premise that it is not required in order to be considered recycling.

Support for this approach is also found in the statutory language and its Congressional history. In Section 1004 (22) of the Resource Conservation and Recovery Act (RCRA), recovery is defined as the recovery of material or energy resource from solid waste. House Report Number 94-1491 at pages 11 and 13 also recognizes that "both raw materials and energy can be recovered from waste." A basic purpose of RCRA is to allow and encourage reclamation of resources in any form (materials, raw materials, or energy) and not be limited solely to activities that recover the hazardous portion of the waste.

**Clarification of "Precious Metals" Discussion in May 18, 1992 Letter**

In our May 18, 1992 letter, we mentioned the precious metals exemption in 40 CFR 266, Subpart F, as an illustration only. As you requested in our November 19, 1992 meeting, this letter clarifies our original letter. We intended to illustrate a regulated process, similar to ours, in which the hazardous component of a material to be recovered need not be reclaimed for EPA to consider the process to be recycling. We never intended to suggest that Pu is a precious metal subject to Subpart F.

It is illustrative, however, that Section 266, Subpart F does not establish a specific allowance for nonhazardous waste to be reclaimed. This Subpart was cited because of its clarity in describing recycling operations that might only recover portions of the waste not defined as hazardous. It does not present any less stringent requirements for the recovery of nonhazardous

portions of waste, although it does relax some other general recycling requirements relating to storage found in Section 261.6. Neither Section 266 nor 261.6 require recovery of the hazardous waste component in recycling operations.

**Application of Hazardous Waste Regulations to Mixed Waste**

Plutonium is not specifically mentioned in the hazardous waste regulations; the recycling requirements, however, still apply to mixed waste containing Pu. It is generally recognized that EPA does not intend to promulgate new regulations specifically for mixed waste at this time. Instead, it applies the existing hazardous waste regulations. NMED has not promulgated new regulations in order to enforce its mixed waste authority. This is demonstrated in its application for mixed waste authority submitted to EPA on July 19, 1989. This application certifies that "the State will utilize the procedures for implementation, inspection, enforcement, and permitting as currently exist within the authorized program." NMED adopts federal regulations by reference. Because EPA has no regulations specific for mixed waste, NMED is therefore committed to apply hazardous waste regulations to mixed waste.

**TA-55 Operations**

LANL's intent, at TA-55 in general, and more specifically, the unit used for the passivation of nitrated rags (see 5/18/92 letter and enclosed flow diagram), is to recover a usable material. TA-55 operates under a mandate that requires the recovery of economically significant amounts of Pu; materials not meeting the economically significant criteria do not enter the recovery process. DOE has described the economic basis for recovery of a usable Pu product in DOE Order 5660.1, Chapter VI, which states: "Dollars are saved by reducing production requirements and, in those cases where material can be reused, fabrication and processing funds can be saved as well as time in implementing or accelerating ongoing programs." During one year of operation, prior to the June 1989 shutdown, over 10 kilograms of Pu were recovered from the nitrated rags.

Also, the flow diagram depicts the fact that mixed waste that contains recoverable levels of Pu remain within the recovery system until Pu levels fall below that which is economically significant to reclaim. Material which does not contain recoverable levels of Pu is removed from the system. If this waste is hazardous, then it is treated and/or stored pursuant to RCRA interim status requirements.

In summary, it is DOE's and the University's understanding that, based on the interpretations described above, the processes

recovering Pu at Technical Area 55 constitute recycling under the HWMR, and, as such, do not require permitting under the HWMR. Your review of this matter and a response indicating whether you agree with our understanding would be greatly appreciated. Please contact Jon Mack of my staff at 665-5026 or Alice Barr of LANL at 667-0820 if you have any questions.

Sincerely,

Joseph C. Vozella, Acting Chief
Environment, Safety and Health
Branch

LESH:7JV-023

Enclosures

cc w/o enclosures:
J. Mack, ES&H, LAAO
A. Tiedman, ADO, LANL,
MS-A120
T. Gunderson, EM-DO, LANL,
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MS-K490
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MS-A187
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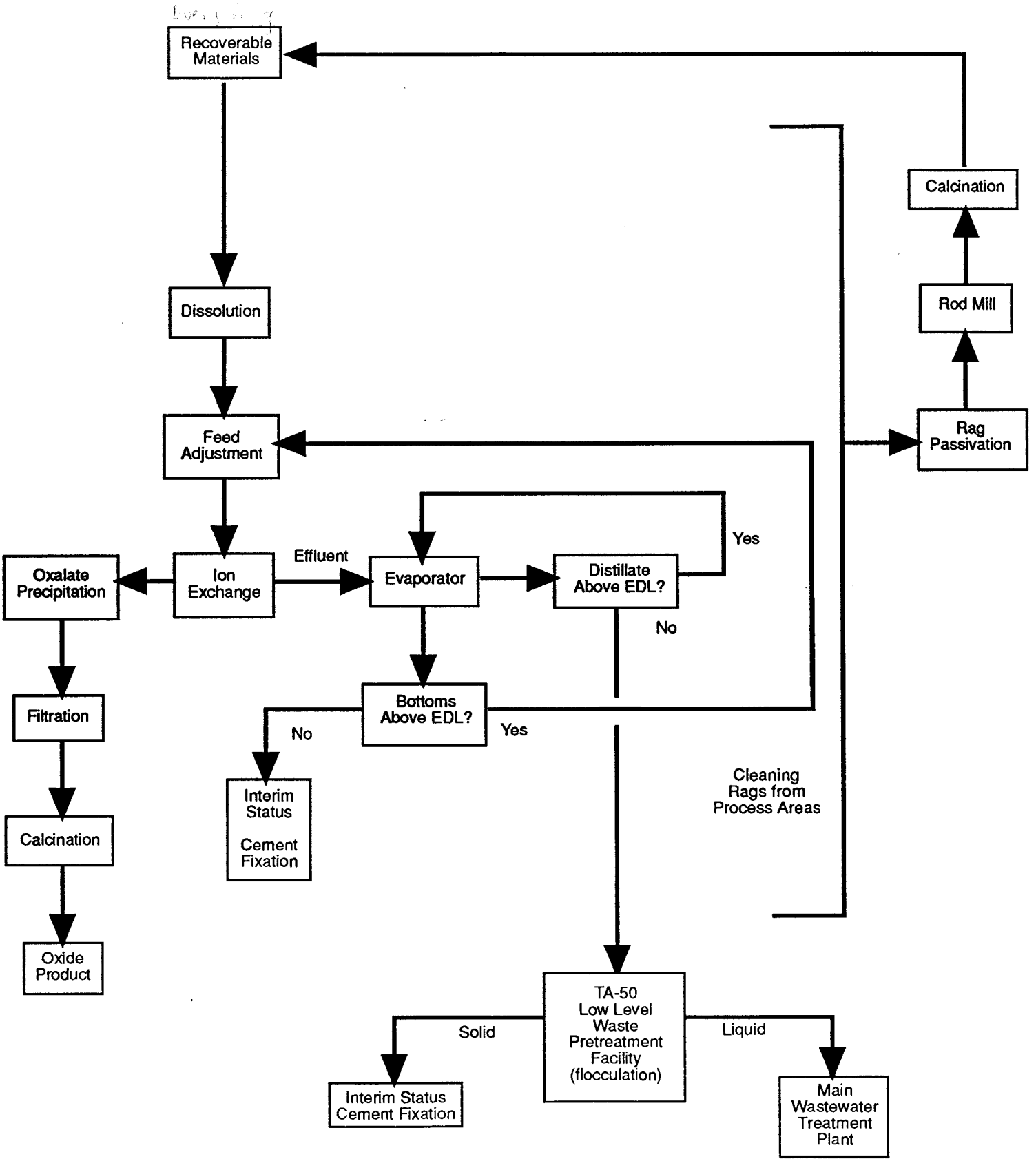
# General Process Flowchart For Plutonium Recovery Operations



**Department of Energy**
Field Office, Albuquerque
Los Alamos Area Office
Los Alamos, New Mexico 87544

MAY 18 1992

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Edward Horst
Program Manager
Hazardous Waste Section
New Mexico Environment Department
525 Camino de Marquez Place
Santa Fe, NM 87502

Dear Mr. Horst:

This letter addresses the issue of whether permitting requirements apply to recycling units. This issue was discussed during the meeting between New Mexico Environment Department (NMED), Los Alamos National Laboratory (LANL), and Department of Energy (DOE) staff on January 16, 1992. This letter is also intended to provide additional information about a process used to passivate nitrated cheesecloth rags contaminated with plutonium. These issues are closely related and are therefore both addressed in the same letter.

It is LANL's and DOE's understanding that, pursuant to NMED's Hazardous Waste Management Regulations (HWMR-6), Section 261.6(c), the processes used to reclaim materials that may contain hazardous or mixed waste are not regulated under HWMR-6 (except certain types of units that emit volatile organics). As we discussed in our January 16, 1992 meeting, the intent of the regulations is to encourage recycling. The promulgation of two sets of recycling regulations separate from permitting regulations for treatment illustrates this intent. In both HWMR-6, Section 261.6 and Part 266, it is clear that not only can hazardous wastes be reclaimed, but hazardous waste can be separated from other valuable material without reclaiming the hazardous portion and no permit is required for the process itself. Recycling activities often only require compliance with storage, transportation and notification regulations. The fact that these recycling regulations exist separately from the permitting requirements indicates the Environmental Protection Agency's (EPA) desire to regulate recycling differently.

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As noted above, HWMR-6, Section 261.6(c) states that, "The recycling process itself is exempt from regulation except as provided in 261.6(d)". The exception for the provisions in 261.6(d) was added when the new Subparts AA and BB of Parts 264 and 265 were promulgated. These subparts specifically addressed organic emissions from certain types of treatment units that were, until now, unregulated because they were recycling units. The preamble discussion for these new regulations implies that these recycling units had not been regulated in the past. Additionally, the exception for Subparts AA and BB suggests that only when a regulation specifically states that a process requires a permit would one be necessary.

LANL currently operates various processes at the Plutonium Reprocessing Facility, Technical Area (TA) 55, under this same interpretation. At this facility, plutonium is extracted from several types of waste, some of which is mixed waste. LANL and DOE believe that the processes used to recover plutonium need not be permitted, although the handling of mixed waste prior to and after plutonium is recovered would be considered Resource Conservation and Recovery Act (RCRA) regulated activities. The general recycling requirements of HWMR-6 Section 261.6 and the intent of Part 266, Subpart F support this approach.

Although recovering plutonium is not included in the Part 266 Subpart F regulations for precious metal recovery, the concepts from which these requirements have been derived are similar. EPA believed that the strong motivation to manage precious metal-containing wastes carefully due to the high value of the metals justified a partial exemption from regulation. In fact, such wastes are exempt from all but the requirements for notification, manifests, precluding overaccumulation, and recordkeeping to document that wastes are not being overaccumulated (Federal Register Vol. 50, No. 3, pg 648). Plutonium-containing mixed waste at TA-55 is managed very stringently due to safety, security, and economic concerns. For example, the storage area containing waste to be reclaimed is monitored 24 hours a day, 7 days a week with a continuous air monitoring system that could detect a radioactive airborne release within 10 minutes and trigger an alarm. Also, containers that potentially hold RCRA mixed waste liquid to be processed are stored with five levels of containment to ensure strict waste control.

The above-mentioned preamble (pg. 648, 649) also stated that, for precious metals to be conditionally exempt from regulation, economically significant amounts must be recovered. Recovery operations at TA-55 are based upon an Economic Discard Level (EDL) that prescribes an amount of plutonium above which recovery is mandated by DOE due to the value of the metal available in the waste. Although plutonium was not included in

the list of precious metals in Subpart F, its economic value far surpasses the metals listed.

One activity in particular at TA-55 has been identified as a plutonium recycling process, and, as stated in my transmittal letter (January 25, 1991) for the RCRA Mixed Waste Part A Application, would presumably not require a RCRA permit. A small volume of cheesecloth rags used to wipe gloveboxes must periodically be passivated to recover plutonium and address safety concerns. Typically, the rags will be exposed to nitric acid in the cleaning process. When the acid comes in contact with the cellulose in the cheesecloth, nitrocellulose can be generated. The nitrocellulose could cause the rags to become ignitable or reactive, presenting a safety concern. For this reason, and the need to recover plutonium, the rags were typically ashed daily until June 1989.

The ashing of these rags was previously performed using a process that could have been construed as incineration. With the promulgation of New Mexico Laws 1989, Chapter 279 (House Bill 59) prohibiting incineration, the unit was shut down. A different technique to passivate these rags was developed that, although not as efficient, is a usable alternative.

The new method uses a stainless steel vessel heated to approximately 900 degrees Celsius with electric resistance heaters. A positive flow of argon into the vessel maintains an inert environment. The processed material is thermally decomposed to an ash-like material at these elevated temperatures by breaking the organic bonds and recombining them with the oxygen present in the initial matrix. The offgas produced passes through an aqueous caustic scrubber and then out the high efficiency particulate air filters. The residue generated is subsequently processed through a rotary calciner drying unit and then reintroduced into the plutonium recovery process.

Because the cheesecloth may have come in contact with spilled solutions containing solvents or nitric acid, these materials must be handled in compliance with hazardous waste generation, transportation and storage requirements [see HWMR-6, Section 261.6(a)(1)]. However, because the passsivation unit is an integral part of the recycling process, we believe it is exempt from regulation pursuant to HWMR-6, Section 261.6(c)(1).

MAY 18 1992



We would appreciate your review of this matter and a response indicating whether you agree with our determination that the passivation unit does not require a permit. Please contact Jon Mack at 665-5026 if you have any questions.

Sincerely,

Jerry L. Bellows
Area Manager

LESH:6JM-002

cc:
J. Mack, ES&H, LAAO
A. Tiedman, ADO, LANL, MS A120
T. Gunderson, EM-DO, LANL, MS K491
K. Hargis, EM-8, (EM-8:92-1008-1), LANL, MS K490

(v) Fuels produced from the refining of oil-bearing hazardous wastes along with normal process streams at a petroleum refining facility if such wastes result from normal petroleum refining, production, and transportation practices;

(vi) Oil reclaimed from hazardous waste resulting from normal petroleum refining, production, and transportation practices, which oil is to be refined along with normal process streams at a petroleum refining facility;

(vii)(A) Hazardous waste fuel produced from oil-bearing hazardous wastes from petroleum refining, production, or transportation practices, or produced from oil reclaimed from such hazardous wastes, where such hazardous wastes are reintroduced into a process that does not use distillation or does not produce products from crude oil so long as the resulting fuel meets the used oil specification under § 266.40(e) of this chapter and so long as no other hazardous wastes are used to produce the hazardous waste fuel;

(B) Hazardous waste fuel produced from oil-bearing hazardous waste from petroleum refining production, and transportation practices, where such hazardous wastes are reintroduced into a refining process after a point at which contaminants are removed, so long as the fuel meets the used oil fuel specification under § 266.40(e) of this chapter; and

(C) Oil reclaimed from oil-bearing hazardous wastes from petroleum refining, production, and transportation practices, which reclaimed oil is burned as a fuel without reintroduction to a refining process, so long as the reclaimed oil meets the used oil fuel specification under § 266.40(e) of this chapter; and

(viii) Petroleum coke produced from petroleum refinery hazardous wastes containing oil at the same facility at which such wastes were generated, unless the resulting coke product exceeds one or more of the characteristics of hazardous waste in part 261, subpart C.

(b) Generators and transporters of recyclable materials are subject to the applicable requirements of parts 262 and 263 of this chapter and the notification requirements under section 3010 of RCRA, except as provided in paragraph (a) of this section.

(c)(1) Owners or operators of facilities that store recyclable materials before they are recycled are regulated under all applicable provisions of subparts A through L, AA, and BB of parts 264 and 265, and under parts 124, 266, 268, and 270 of this chapter and the notification requirements under section 3010 of RCRA, except as provided in paragraph (a) of this section. (The recycling process itself is exempt from regulation except as provided in § 261.6(d).)

(2) Owners or operators of facilities that recycle recyclable materials without storing them before they are recycled are subject to the following requirements, except as provided in paragraph (a) of this section:

(i) Notification requirements under section 3010 of RCRA;

(ii) Sections 265.71 and 265.72 (dealing with the use of the manifest and manifest discrepancies) of this chapter.

(iii) Section 261.6(d) of this chapter.

(d) Owners or operators of facilities subject to RCRA permitting requirements with hazardous waste management units that recycle hazardous wastes are subject to the requirements of subparts AA and BB of part 264 or 265 of this chapter.

[50 FR 49203, Nov. 29, 1985, as amended at 51 FR 28682, Aug. 8, 1986; 51 FR 40637, Nov. 7, 1986; 52 FR 11821, Apr. 13, 1987; 55 FR 25493, June 21, 1990; 56 FR 7207, Feb. 21, 1991; 56 FR 32692, July 17, 1991]

EFFECTIVE DATE NOTE: At 56 FR 7207, Feb. 21, 1991, § 261.6 was amended by removing paragraph (a)(3)(vii) and redesignating paragraphs (a)(3)(viii) and (ix) as paragraphs (a)(3)(vii) and (viii) respectively, effective August 21, 1991. For the convenience of the user, the superseded text appears as follows:

§ 261.6 Requirements for recyclable materials.

(a) * * *

(3) * * *

(vii) Coke and coal tar from the iron and steel industry that contains EPA Hazardous Waste No. K087 (Decanter tank tar sludge from coking operations) from the iron and steel production process;

* * * * *





EFFECTIVE DATE NOTE: . July 17, 1991, in § 261.6, pa troductory text was amen "G" with "H", and paragr amended by replacing "s "subpart H", effective July

§ 261.7 Residues of haz empty containers.

(a)(1) Any hazardous ing in either (i) an emp (ii) an inner liner rer empty container, as d graph (b) of this sectio to regulation under pa 265, or part 268, 270 chapter or to the notif ments of section 3010 o

(2) Any hazardous was a container that is not e inner liner removed fro that is not empty, as de graph (b) of this sectior regulation under parts 265, and parts 268, 270 a chapter and to the n quirements of section 30

(b)(1) A container or removed from a contai held any hazardous wa waste that is a compress is identified as an acu waste listed in §§ 261.3 261.33(e) of this chapter

(i) All wastes have b that can be removed us tices commonly employe materials from that type *e.g.*, pouring, pumping, a *and*

(ii) No more than 2.5 (one inch) of residue re bottom of the container c *or*

(iii)(A) No more than weight of the total cap container remains in the inner liner if the containe or equal to 110 gallons in

(B) No more than 0.3 weight of the total cap container remains in the inner liner if the contain than 110 gallons in size.

(2) A container that ha ardous waste that is a co is empty when the pressur tainer approaches atmosp

(3) A container or an in moved from a container t

*See, e.g.*, H.R. Rep. at 3, 4, 10, 11; S. Rep. at 2, 4, 6 (1976).

In short, under RCRA solid wastes do not cease to be solid wastes simply because they are being used, re-used, recycled or reclaimed. Rather, use, re-use, recycling, resource recovery and reclamation are ways of managing solid wastes which, if properly conducted, can avoid environmental hazards, protect scarce land supply, and reduce the nation's reliance on foreign energy and materials (H.R. Rep. at 4).

A number of commenters suggested that Congress could not have intended the term "solid waste" to include hazardous wastes which are used, re-used, recycled or reclaimed because the regulation of such wastes under Subtitle C would thwart RCRA's broad resource conservation and recovery objectives.

EPA does not agree. Although promoting waste re-use and recovery is certainly one of the goals of RCRA, Subtitle C does not require EPA to consider resource recovery implications in establishing hazardous waste management standards; nor does it suggest that promoting resource recovery should take precedence over assuring proper management of hazardous wastes. Furthermore, EPA does not agree that frustrating resource recovery is an inevitable result of requiring hazardous waste to be properly managed. As discussed below, EPA believes it may be possible to achieve a workable balance between Subtitle C's mandate that hazardous wastes be handled in an environmentally sound manner and RCRA's overall objective of encouraging th re-use and reclamation of wastes. However, in the event such a balance cannot be achieved, Congress' "overriding concern"—the safe handling of hazardous wastes (H.R. Rep. at 3) and the elimination of "the last remaining loophole" in environmental regulation (H.R. Rep. at 4)—must prevail.

2. *Assuring Proper Management of Hazardous Waste and Encouraging Resource Recovery.* The comments which EPA received on its proposal to regulate the use, re-use, recycling and recovery of hazardous waste in many ways mirrored the competing objectives which the Agency was trying to achieve in its proposal. Many commenters argued that EPA's approach would discourage the beneficial use and recycling of hazardous wastes by so escalating the cost of using or recycling wastes that they could no longer compete with virgin products, by increasing administrative burdens for the waste user or reclaimer, and by labeling recycling activities as another form of "hazardous waste" management. These commenters also suggested that the regulation of waste uses and reclamation would pose serious practical problems—*e.g.*, distinguishing between wastes and commercial by-products and intermediates, issuing permits for certain types of re-uses—and that EPA's proposed Section 3004 standards were not appropiate for many waste use and reclamation activities. Other commenters, citing the types of considerations outlined above, applauded EPA's regulation of the use and reclamation of hazardous wastes and urged that its proposed list of regulated waste re-uses and recycling operations be expanded to include the reclamation of waste solvents, the burning of spent catalysts and other organic wastes for energy, the use of metal-bearing sludges as fertilizers, the use of waste acids, and the re-use of contaminated drums. Still other commenters suggested that, at a minimum, wastes destined for re-use, or reclamation be properly stored and manifested.

EPA does not agree with the largely unsubstantiated claims of commenters that controlling the use and recycling of hazardous waste will necessarily discourage *bona fide*, environmentally sound re-use and reclamation activities. The impact of EPA's regulations on waste use and recovery will, in the Agency's opinion, hinge almost exclusively on the relative costs of re-use versus disposal. As disposal costs increase, it seems reasonable to expect that it will become profitable or more profitable to recycle or re-use wastes (even if regulated) than to dispose of them. EPA received no data during the comment period to suggest the contrary.

Commenters' claims about the chilling effect of regulating recycle and re-use activities also seem somewhat exaggerated. In many cases, Federal or State regulation of these activities should legitimatize, not stigmatize, them in the eyes of the public and increase the flow of wastes to well-operated facilities. Indeed, EPA received comments from several waste recyclers urging the Agency to extend Subtitle C control to their operations for these very reasons.

EPA does agree, however, that its proposed Section 3004 treatment and disposal standards (as well as the standards promulgated today) may not be well-suited for regulating all hazardous waste recovery and reclamation facilities or for regulating all uses and re-uses of hazardous waste. These standards are designed primarily to minimize the health and environmental hazards posed by traditional hazardous waste treatment and disposal facilities—such as incinerators and landfills. In many cases, the health and environmental dangers associated with the use or re-use of hazardous waste or with the recycle and reclamation operations are different in nature or degree, and therefore may justify the imposition of different management standards. For example, air emissions generated by the burning of waste oil for energy recovery can probably be effectively controlled without requiring boilers to meet hazardous waste incinerator requirements. Similarly, the leaching of metals from slag used in roadbeds can probably be successfully minimized without requiring compliance with Section 3004 landfill criteria.

At the same time, EPA also concedes that its proposed Section 3001 regulations probably did not go far enough in controlling the re-use and reclamation of hazardous waste. For example, there are a number of waste recycling operations which were not covered by EPA's proposed regulation—*e.g.*, solvent reclamation—which have been known to cause serious health and environmental hazards and should be subject to Subtitle C regulation. The long-term storage of hazardous wastes prior to recycling is another area where there have been damage incidents (*e.g.*, the incident at the Silresim Chemical Company) and where Subtitle C controls would appear to be essential for environmental protection.

In short, EPA acknowledges that it could have done a better job in its proposed regulations of attempting to balance Subtitle C's mandate that hazardous wastes be properly managed with RCRA's overall objective of promoting resource recovery. As we discovered during the comment period, however, this is not an easy task, and given other priorities in developing the regulations promulgated today, we have only been able to complete the first phase of it to date. That first phase, as well as EPA's long term plans for regulating the use, re-use, recycling and reclamation of hazardous wastes are discussed in sections IV.B.3. and IV.B.4., respectively, of this preamble. As indicated in those sections, we believe this program, when completed, will be responsive to the two major deficiencies in EPA's proposed regulation identified above.

3. *Regulating the Storage and Transportation of Hazardous Wastes Prior to Use, Re-use, Recycling or Reclamation; Defining "Waste".* As discussed above, EPA generally agrees

(ii) *Recycled*, as explained in paragraph (c) of this section; or

(iii) Considered *inherently waste-like*, as explained in paragraph (d) of this section.

(b) Materials are solid waste if they are *abandoned* by being:

(1) Disposed of; or

(2) Burned or incinerated; or

(3) Accumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned, or incinerated.

(c) Materials are solid wastes if they are *recycled*—or accumulated, stored, or treated before recycling—as specified in paragraphs (c)(1) through (4) of this section.

(1) *Used in a manner constituting disposal.* (i) Materials noted with a "*" in Column 1 of Table I are solid wastes when they are:

(A) Applied to or placed on the land in a manner that constitutes disposal; or

(B) Used to produce products that are applied to or placed on the land or are otherwise contained in products that are applied to or placed on the land (in which cases the product itself remains a solid waste).

(ii) However, commercial chemical products listed in § 261.33 are not solid wastes if they are applied to the land and that is their ordinary manner of use.

(2) *Burning for energy recovery.* (i) Materials noted with a "*" in column 2 of Table 1 are solid wastes when they are:

(A) Burned to recover energy;

(B) Used to produce a fuel or are otherwise contained in fuels (in which cases the fuel itself remains a solid waste).

(ii) However, commercial chemical products listed in § 261.33 are not solid wastes if they are themselves fuels.

(3) *Reclaimed.* Materials noted with a "*" in column 3 of Table 1 are solid wastes when reclaimed.

(4) *Accumulated speculatively.* Materials noted with a "*" in column 4 of Table 1 are solid wastes when accumulated speculatively.

TABLE 1

| | Use constituting disposal (§ 261.2(c)(1)) (1) | Energy recovery/fuel (§ 261.2(c)(2)) (2) | Reclamation (§ 261.2(c)(3)) (3) | Speculative accumulation (§ 261.2(c)(4)) (4) |
|---|---|---|---|---|
| Spent Materials | (*) | (*) | (*) | (*) |
| Sludges (listed in 40 CFR part 261.31 or 261.32) | (*) | (*) | (*) | (*) |
| Sludges exhibiting a characteristic of hazardous waste | (*) | (*) | | (*) |
| By-products (listed in 40 CFR part 261.31 or 261.32) | (*) | (*) | (*) | (*) |
| By-products exhibiting a characteristic of hazardous waste | (*) | (*) | | (*) |
| Commercial chemical products listed in 40 CFR 261.33 | (*) | (*) | | |
| Scrap metal | (*) | (*) | (*) | (*) |

Note: The terms "spent materials", "sludges", "by-products," and "scrap metal" are defined in § 261.1.

(d) *Inherently waste-like materials.* The following materials are solid wastes when they are recycled in any manner:

(1) Hazardous Waste Nos. F020, F021 (unless used as an ingredient to make a product at the site of generation), F022, F023, F026, and F028.

(2) Secondary materials fed to a halogen acid furnace that exhibit a characteristic of a hazardous waste or are listed as a hazardous waste as defined in subparts C or D of this part.

(3) The Administrator will use the following criteria to add wastes to that list:

(i)(A) The materials are ordinarily disposed of, burned, or incinerated; or

(B) The materials contain toxic constituents listed in appendix VIII of part 261 and these constituents are not ordinarily found in raw materials or products for which the materials substitute (or are found in raw materials or products in smaller concentrations) and are not used or reused during the recycling process; and

exempt from regulation at the present time (see § 266.30(a)).

• Generator C generates a hazardous [illegible]ent solvent listed under § 261.31, blends it with virgin fuel oil, and sends the blend to Burner D who burns it in a boiler.

The answer is the same as for the last example, for the same reasons.

• Generator E generates a hazardous spent solvent listed under § 261.31, blends it with virgin fuel oil, and sends the blend to processor F who processes the blend and does further blending. F then markets the hazardous waste fuel to Burner G who burns it in his boiler.

Generator E is subject to Part 262, as in the previous examples. Processor F is a storage facility (see § 266.34(c)(2)). However, the hazardous waste fuels that F markets are exempt from regulation, so Burner G may store and burn them without regulation (at the present time).

• Generator H generates an unlisted ignitable by-product that he sends to Burner I to be burned in a boiler.

The hazardous waste is exempt from regulation because it is neither a listed waste nor a sludge (see § 266.36). This result would be the same if the ignitable by-product were blended at any point [illegible] sent to an intermediate processor instead of the ultimate burner.

The following chart summarizes the generation, transportation, and storage standards in the final rule for hazardous wastes to be burned as fuels.

TABLE 6: FINAL RULES REGARDING TRANSPORT AND STORAGE BEFORE BURNING FOR GENERATORS, TRANSPORTERS, FUEL BLENDERS, AND BURNERS

| | Hazardous wastes that are subject to regulation |
|---|---|
| Generator sending waste to fuel processor. | Spent materials and by-products listed in §§ 261.31 and .32, all sludges, and any blend containing one of these wastes. |
| Generator sending waste directly to burner. | Spent materials and by-products listed in §§ 261.31 and .32, all sludges, and any blend containing one of these wastes. |
| Transporters taking waste from generators to fuel processor. | Spent materials and by-products listed in §§ 261.31 and .32, all sludges, and any blend containing one of these wastes. |
| Transporters taking waste from generators to burners. | Spent materials and by-products listed in §§ 261.31 and .32, all sludges, and any blend containing one of these wastes. |
| Fuel processors who do not generate the waste or burn the waste-derived fuel. | Spent materials and by-products listed in §§ 261.31 and .32, all sludges, and any blend containing one of these wastes; waste-derived fuels produced by the processor are exempt from regulation. |

TABLE 6: FINAL RULES REGARDING TRANSPORT AND STORAGE BEFORE BURNING FOR GENERATORS, TRANSPORTERS, FUEL BLENDERS, AND BURNERS—Continued

| | Hazardous wastes that are subject to regulation |
|---|---|
| Transporters taking intermediate waste-derived fuels from fuel processors to burners. | Exempt from regulation. |
| Burners. | Spent materials and by-products listed in §§ 261.31 and .32, all sludges, and any blend containing one of these wastes; waste-derived fuels from fuel processors who did not generate the waste are exempt from regulation. |

E. Section 261.2(c)(8): Reclamation

1. *Definition of Reclamation.* EPA proposed that all spent materials, listed sludges, and listed by-products that are reclaimed are solid wastes.[30] See 48 FR at 14486. We limited the definition to listed sludges and listed by-products to avoid including sludges and by-products that are routinely processed to recover usable products as part of on-going production operations. We defined "reclamation" to constitute either regenerating waste materials or processing waste materials to recover usable products. In essence, reclamation involves regeneration or material recovery. Wastes are reclaimed when they are processed to remove contaminants in a way that restores them to their status as original commodities. Examples are reclamation of spent solvents or reclamation of other spent organic chemicals. Secondary metal reclamation processes, such as secondary smelting, are examples of material recovery. Our regulatory definition of reclamation relies heavily on a number of statutory definitions, including those of "resource recovery" (RCRA Section 1004(31)) and "recovered material" (RCRA Section 1004(19)). *Id.* at 14487/2.

We also drew a distinction in the proposal between situations where material values in a spent material, by-product, or sludge are recovered as an end-product of a process (as in metal recovery from secondary materials) as opposed to situations where these secondary materials are used as ingredients to make new products without distinct components of the materials being recovered as end-products. The former situation is reclamation; the latter is a type of direct use that usually is not considered to constitute waste management. 48 FR 14487. In addition, we proposed that secondary materials put to direct use as substitutes for commercial products were not considered to be reclaimed, so that this type of use also is usually not considered to be waste management. Our reason for this distinction is that secondary materials put to direct use in this way are being used essentially as products.

We are adopting these provisions as proposed. (Additional discussion of recycling involving direct use of secondary materials is found in Section H. below.) Also, as discussed in Section I.A.2. of this part of the preamble, we have added provisions to the final definition indicating explicitly that scrap metal that is hazardous is considered to be a waste for the regulatory purposes of RCRA Subtitle C when it is reclaimed. As we noted, recovery from scrap metal is not normally analogous to on-going processing of virgin materials, and much of the scrap metal that is reclaimed is waste-like because it is no longer fit for use and must be reclaimed before it can be used again. (As discussed in Part III of the preamble, however, the Agency is at this time exempting from Subtitle C regulation hazardous scrap metal that is to be reclaimed.)

As a matter of drafting, we have reorganized this provision so that the definition of reclamation is found in § 261.1. The exceptions for direct use recycling are contained in a separate provision (§ 261.2(e)) indicating when secondary materials that are to be recycled are not solid wastes.

Most of the comments agreed with the proposed definition of reclamation (although many questions were raised about how to regulate reclamation activities and about exclusions for direct use recycling). One commenter requested clarification as to the intended result when a secondary material is first reclaimed and then put to direct use. Under the final rule, spent materials, listed sludges, and listed by-products that are processed to recover usable products, or that are regenerated—*i.e.*, that are reclaimed—are solid wastes. If the material is to be put to use after it has been reclaimed, it still is a solid waste until reclamation has been completed. Thus, the fact that wastes may be used after being reclaimed does not affect their status as wastes before and while being reclaimed.

Other commenters raised a related question about the status of spent materials, listed sludges, and listed by-products that are reclaimed and

[30] The proposal contained an exception for materials that were reclaimed at the plant site and returned to the original process in which they were generated. We are not promulgating this exception in the final rule, for the reasons explained in section H of this part of the preamble.

These potential dangers are all present when wastes are reclaimed in surface impoundments or stored in impoundments before reclamation. In fact, reclamation in surface impoundments is very similar to a use or reuse constituting disposal: both involve direct, uncontrolled placement of waste in the land. We thus are not exempting this activity from regulation. (However, since the concern here is waste management in surface impoundments, the hazardous wastes are not automatically subject to regulation when they are removed from the impoundment to be used, reused, or reclaimed.)

By using the language "reclaimed or otherwise processed" in proposed § 261.6(b)(1) (i) and (ii), the Agency means to cover virtually all management activities occurring in surface impoundments involving material recovery for subsequent use, reuse, or additional reclamation, or involving processing designed to make the impounded material amenable for recovery.

The following examples show how the provisions operate with respect to surface impoundments:

• Generator A has a listed wet emission control sludge that is dewatered in a surface impoundment. The settled sludge is then dredged and used as an ingredient in manufacturing cement.

The sludge is a solid waste and is subject to regulation when it is dewatered in the impoundment. The recovery and processing of the sludge in the impoundment meets the "reclaimed or otherwise processed" standard of the proposed regulation. This result conform well with the language of RCRA, since dewatering is conducted to recover the entrained solids for future use—*i.e.*, to make the sludge "amenable for recovery", in the language of the statutory definition of treatment.

The sludge is not a solid waste once it is removed from the impoundment because it is being used as an ingredient, not reclaimed. (This concept is explained in the following subsection.) This sludge could be a waste, however, if it accumulates, after being removed from the impoundment, for over a year without a sufficient amount being used (see proposed § 261.2(a)(2)(v), described in Section G, below).

• Generator B generates a listed wastewater treatment sludge by precipitating metals from wastewater collected in a surface impoundment. The sludge is then dredged and shipped to a secondary smelter for metal recovery. The smelter is not smelting for its own subsequent use.

The sludge is a solid waste and is subject to regulation when in the impoundment for the same reason as the previous example. In addition, the sludge remains a solid waste when sent to the secondary smelter because it is being reclaimed by a person other than the generator for use by a person other than the reclaimer.

2. *The Meaning of "Reclamation"*. The Agency has defined "reclamation" in proposed §261.2(c)(1) to constitute either regenerating waste materials or processing waste materials to recover usable products. Regeneration processes involve removing of contaminants or impurities so that the material can be put to further use. Examples are spent solvent and other spent organic chemical reclamation (ordinarily a regeneration process), spent catalyst regeneration, and most secondary metal reclamation, including secondary smelting (recovery of usable metal from otherwise unusable material).[28]

In thus defining reclamation operations to involve solid wastes, the Agency is following closely the various statutory definitions that indicate unequivocally that recovering usable material from otherwise unusable material constitutes solid waste management, and that the materials from which resources are recovered are solid wastes. Thus, one aspect of solid waste management is "resource recovery," which involves "the recovery of material or energy from *solid waste*" (Sections 1004(30) and 1004(22), emphasis added). Similarly, a "recovered material" (Section 1004(19)) includes material or by-products that "have been recovered or diverted from solid waste * * *." To the same effect, see Sections 1004(7), (18), (23), (24), and (29).

This provision is perhaps not as encompassing as it may appear. First, as described in the next subsections, activities involving use or reuse of the materials are not deemed to constitute reclamation. Second, reclamation conducted at the plant site where the reclaimed material is returned to the original process also is outside the scope of the definition. Operations where a generator reclaims his own materials, or when a reclaimer reclaims for his own use, also are ordinarily exempt from regulation. In addition, most reclamation activities do not involve hazardous wastes and so are unaffected by this provision.[29]

The limitation of the regulation to listed sludges and listed by-products also reduces the scope of the reclamation provision. By examining whether a particular type of sludge or by-product is a waste when reclaimed, the Agency will have an opportunity to determine if reclamation of the individual sludge or by-product should be viewed as a waste management process. At the same time, the Agency believes it important to have the means to regulate particular sludges and by-products that are to be reclaimed.

3. *The Distinction Between "Use" and "Reclamation"*. Proposed § 261.2(c)(1) contains an important clarifying clause indicating that three types of activity involving the use or reuse of spent materials, sludges, or by-products do not constitute reclamation:

• First, using materials as ingredients to make new products, without distinct components of the materials being recovered as end-products. Examples are zinc-containing sludges used as ingredients in fertilizer manufacture, and chemical intermediates (for instance, distillation residues from one process used as feedstocks for a second process).[30] This exception does not apply when the spent material, sludge, or by-product is itself recovered or when its contained material values are recovered as an end-product. For example, if a metal containing sludge is

[28] The Agency believes that blending or combining materials to form fuels also is similar to reclamation, and within the Agency's jurisdictional purview, since otherwise unusable materials are being restored to usable condition so that energy can be recovered. (See Section 1004(22) of RCRA defining "resource recovery" as "the recovery of material *or energy* from solid waste" (emphasis added); see also Section 6002(c)(2), which refers to "systems that have the technical capability of using energy or fuels derived from solid waste. . . ." The House Report to RCRA likewise indicates that both raw materials and energy can be recovered from solid waste (see H. Rep. No. 94-1491 at 11 and 13).) We are exerting regulatory control over this activity by means of separate regulatory language in the interest of definitional clarity.

[29] Metal-containing scrap comprises the great majority of reclaimed materials. See National Association of Recycling Industries, *Recycling Resources: Priorities for the 1980's*, indicating that over 80 percent of the materials recycled by its members are scrap metal. Scrap is not usually considered hazardous. Generators can determine this on the basis of their knowledge of the material (see § 262.11(c)(2)). Thus, most secondary metal reclamation is not affected by this provision.

[30] Another example, which occurs often in the chemical industry, is using spent sulfuric acid as an ingredient in producing sulfuric acid. In this operation, spent sulfuric acid is introduced as a feedstock where it is burned to derive sulfur as $SO_2$. As part of the same process, this $SO_2$ is then purified, catalytically converted, and absorbed into existing sulfuric acid. This process does not constitute reclamation because the spent sulfuric acid is neither regenerated (impurities are not removed from the spent sulfuric acid to make it reusable) nor recovered (acid values are not recovered (acid values are not recovered from the spent acid). It is being used as an ingredient.

processed to recover its contained metal values, the process constitutes reclamation, and the sludge, if listed, is a hazardous waste.

• Second, using the materials as substitutes for raw materials in processes that normally use raw materials as principal feedstocks; this exception does include those situations where material values are recovered from these substitute materials. Examples are sludges or spent materials used as substitutes for ore concentrate in primary smelting. The Agency does not believe these processes constitute reclamation, in spite of the recovery or regeneration step, because the materials literally are being used as alternative feedstocks.[31] This is not the case when the same materials are recovered in secondary processes (such as secondary smelting). These processes are waste-based, so that the materials being recovered are not substituting for raw materials. Indeed, this distinction is reflected in the clear delineation of primary and secondary processes. Secondary processes involving recovery or regeneration thus are defined as reclamation.

• Third, using the materials as substitutes for commercial products in particular functions or applications. An example is spent pickle liquor used as a phosphorus precipitant and sludge conditioner in wastewater treatment. This does not regenerate or recover the pickle liquors. Rather, the material is being used (actually reused, since pickle liquor is a spent material) to substitute for other commercial products.

In these three cases, the materials are being used essentially as raw materials and so ordinarily are not appropriate candidates for regulatory control. Moreover, when these materials are used to manufacture new products, the processes generally are normal manufacturing operations (although not when these materials are combined into fuels). The Agency is reluctant to read the statute as regulating actual manufacturing processes.

However, we are somewhat concerned that in the first of these cases the proposal leaves unregulated certain processes that could constitute waste management. Processes where secondary materials are the predominant (or even the sole) ingredient are conceivable examples, particularly where the process operator is paid to take the materials. In addition, processes using spent materials may be more logical candidates for regulation because spent materials (having already fulfilled their original use) are more inherently waste-like than by-products and sludges. We have not been able to reduce these ideas to a quantifiable regulatory standard, however, and solicit further comment on this point.

*Examples*

• Generator A generates an ignitable spent solvent that it sends to reclaimer R who reclaims the solvent for resale to the general public.

The spent solvents are solid wastes in A's hands and in R's and are subject to regulation. Solvent reclamation meets the definition of reclamation since it is a regeneration process, and is subject to regulation since A is not reclaiming its own materials, nor is R reclaiming for its own use.

• Generator B generates a spent solvent that it reclaims itself; the reclaimed solvent is not sent back to the original process from which it was generated.

The spent solvent is a solid waste but is not subject to regulation because B is reclaiming his own materials. The spent solvent could be regulated, however, if it accumulates for over a year without a sufficient amount being reclaimed (see proposed § 261.2(a)(2)(v), described in Section G., below), and also could be regulated on a case-by-case basis (see proposed § 261.6(b)(2), described in Section III. B. of Part II of this preamble).

• Generator C generates an emission control dust (a sludge) that it sends to a secondary smelter for metal recovery. The smelter then sends the recovered metal to anunrelated refiner for processing.

The emission control dust is a solid and hazardous waste if it is listed in §261.31 or 261.32 and would be subject to regulation. The smelting process recovers metals from the dust as an end-product, and the smelter is not engaging in reclamation for its own use.

• Generator D generates the same emission control dust that is sent to a cement manufacturer for use.

The dust is not a waste abecause it is being used as an ingredient to make cement and is not being recovered or regenerated.

4. *Exception for Materials Reclaimed at the Plant Site and Returned to the Original Manufacturing Process.* There is one further exception to the reclamation provision. Reclamation can sometimes be part of a closed-loop recycling step, where reclaimed materials are recycled back into the initial production process. This type of recycling is really an adjunct to the original process, and as such it represents a situation where the recycling activity may not fall within the Agency's jurisdiction. An example is wastewater recycled to the original process after being purified in an impoundment.

To allow for these cases, we do not count spent materials, listed sludges, and listed by-products as solid wastes—even if reclaimed or processed in impoundments—where they are reclaimed at the plant site and then returned to the manufacturing process from which they were generated for further use. Similarly, the same materials are not wastes if they are stored (even if stored in impoundments) and reclaimed at the plant site, and the reclaimed material is then returned to the original manufacturing process. (The exclusion would not apply, however, if the reclaimed material is later used in a different process—even if under the generator's control—since this goes beyond the Agency's conception of closed-loop recycling.) The material need not be returned to the exact production *step* in which it was generated, so long as it is returned to the original process.[32]

The term "plant site" means essentially the same thing as "on-site", namely, the same geographically contiguous property, as well as non-contiguous parcels owned by a single person and connected by a private right-of-way. In addition, the plant site includes contiguous property divided by rights-of-way, whether or not the entrance and exit between parcels is a cross-roads (compare the definition of "on-site" in 40 CFR 260.10). The limitation regarding means of egress in the definition of on-site is not relevant in determining whether a recycling operation is a closed-loop.

The Agency's proposed definition of a closed-loop process hinges essentially on the proximity of location of the reclamation operation, plus return of the material to the original process. There may be better ways to distinguish when reclamation is integrally tied to a production process, such as the length of time materials accumulate before being reclaimed. The Agency solicits

[31] Spent sulfuric acid fits within this exception, as well as the "use as ingredient" exception. The spent acid is usually returned to the original sulfuric acid production process, where it substitutes for raw material customarily used as feedstock.

[32] It should be noted, with respect to surface impoundments, that an impoundment would not be regulated under this provision only if *all* of the material in it that could be a hazardous waste is recycled back to the original production process. Seepage impoundments and impoundments from which wastewaters are both discharged and recycled consequently would remain subject to regulation. In addition, an impoundment still could be regulated if sufficient amounts of material accumulated within it are not recycled within a year of accumulation (see Section G., below).

have jurisdiction over the burning of these materials.[17]

Furthermore, recent statements of Congressional intent strongly support and expansive reading of authority over waste-fuels. The HSWA commands the Agency to regulate burning hazardous wastes for energy recovery, and voice special concern over recycling practices involving "direct introduction of hazardous wastes to the air. . . ." H.R. Rep. No. 98–198, 98th Cong., 1st Sess. 46. Our action today is in full accord with these declarations.

As a point of clarification, the Agency reemphasizes that it has modified the difinition of by-product to indicate more clearly that co-products—materials intentionally produced for a commercial market and suitable for use as-is—are not considered to be by-products. Thus, co-products from petroleum refining such as kerosene, pitch, or various grades of fuel oil, are not by-products for purposes of this regulation.[18] On the other hand, residual materials such as tank bottoms (EPA Hazardous Waste No. KO52) are by-products and are considered to be wastes when used as fuels or when incorporated into fuels. We note that the HSWA takes precisely this position. See RCRA amended Section 3004(g)(2)(A) and 3005(r)(2). Fuels containing these wastes likewise remain solid wastes. *Id.* Again, it may turn out that regulation of these materials is unnecessary to protect human health and the environment. EPA also may be able to establish specifications that distinguish waste-derived fuels from products. Today's rule makes clear that the Agency has jurisdiction to make these determinations.

As a result of this change, all spent materials, sludges, by-products, and § 261.33 commercial chemical products and all fuels to which these materials are added,[19] are potentially subject to regulation when transported, stored, and burned for energy recovery. We discuss below in sections 3 and 4, the Agency's on-going efforts to control burning and storage of these materials.

2. *Determining When a Waste is Burned for Energy Recovery and Applicability of the Rules to Burning for Materials Recovery.* Today's regulations apply to hazardous wastes burned for "energy recovery." This limitation raises two issues: Distinguishing burning for energy recovery from burning for destruction, and determining how to regulate wastes if they are burned to recover materials.

(a) *Burning for Energy Recovery.* The Agency has already addressed in part what it means to burn wastes for legitimate energy recovery. In a Statement of Enforcement Policy issued on January 18, 1983 (printed at 48 FR 11157 (March 16, 1983)), EPA stated that as a general matter—subject to individualized consideration of particular circumstances—burning of low energy hazardous wastes as alleged fuels is not considered to be burning for legitimate energy recovery. This is the case even if the low energy hazardous waste is blended with high energy materials and then burned. Thus, under these principles, boilers and industrial furnaces burning low energy wastes could be considered to be incinerating them, and so be subject to regulation as hazardous waste incinerators. (See 48 FR 11158, 11159, and fn.3.)

Today's regulation leaves the principles of the Statement in force. However, EPA, in the Statement, indicated that sham burning was easiest to determine when burning occurs in non-industrial boilers. We also said that larger industrial boilers are more efficient at recovering energy and so could be deemed, more often, to be burning lower energy wastes legitimately. (*Id.* at 11159.) In applying the Enforcement Policy Statement to industrial boilers and industrial furnaces, we would seek to enforce only in situations where large amounts of low energy wastes with high concentrations of toxicants are burned. These are clearly situations where low energy hazardous waste adulteration was deliberate and massive. We also note that the Policy Statement does not address burning for material recovery, or situations where a single waste is burned for material and energy recovery. In this situation, the fact that low energy wastes are involved would not necessarily indicate that there is no recycling, because material recovery also is involved.

(b) *Burning for Material Recovery.* A second question is the scope of these regulations when burning involves material recovery. The Agency views these regulations as applying whenever hazardous wastes are burned in boilers. Boilers, by definition, recover energy. If materials are also recovered, this recovery is ancillary to the purpose of the boiler, and so does not alter the regulatory status of the activity.

Burning for material recovery in industrial furnaces, however, raises different kinds of issues. As discussed above, industrial furnaces are used as integral components of manufacturing processes to recover materials. Thus, regulation under RCRA of actual burning in industrial furnaces could, in some circumstances, represent an intrusion into a normal production process, particularly if the material being recovered is the same material the furnace ordinarily produces. On the other hand, when an industrial furnace is used for material recovery and the secondary material being burned is: (a) Not ordinarily associated with the furnace (for example, organic still bottoms), (b) different in composition from materials ordinarily burned in the unit (as when the secondary material contains Appendix VIII hazardous constituents different from, or in concentrations in excess of those in materials ordinarily burned in the furnace), or (c) burned for a purpose ancillary to the chief function of the furnace, we think that RCRA jurisdiction over the burning exists. (Jurisdiction obviously exists, for example, if that purpose is destruction.)

When industrial furnaces burn for energy recovery, regulation of the burning would not constitute an impermissible intrusion into the production process because burning for energy recovery is an activity that is not central to the usual function of an industrial furnace. See H.R. Rep. 98–198 at 40 (industrial furnaces burning for energy recovery are to be regulated under the waste-as-fuel provisions of H.R. 2867). We therefore are asserting RCRA jurisdiction when an industrial furnace burns hazardous secondary materials—*i.e.* hazardous wastes—for energy recovery.

The regulations would also apply when an industrial furnace burns the same secondary material for both energy and material recovery. Examples are blast furnaces that burn organic wastes to recover both energy and carbon values, or cement kilns that burn chlorinated wastes as a source of energy

[17] We note as well that Congress already has required the Agency to develop performance standards for used oil burned as a fuel. See RCRA Sections 3014 and 1004(37). The Agency believes that if we have authority to regulate burning of used oil, which is composed primarily of petroleum fractions and therefore is physically similar to fossil fuel or fuel oil, *a fortiori*, we also have authority to regulate burning of secondary materials that are physically quite distinct from fossil fuels.

[18] Off-specification fuels burned for energy recovery also are not by-products, and so would not be considered to be wastes under this provision. An example provided in the comments was of natural gas pipeline condensate. The condensate contains many of the same hydrocarbons found in liquefied natural gas, and certain higher hydrocarbons that also have energy value. It is generated in the pipeline transmission of natural gas. This condensate is not considered to be a waste when burned for energy recovery.

[19] As noted above, for a waste-derived fuel to be hazardous waste, it would have to contain a listed waste or exhibit a hazardous waste characteristic. See § 261.3 (c) and (d).

and chlorine. (Indeed, energy recovery from burning in kilns is automatic, so that all burning of hazardous wastes in kilns is within the Agency's RCRA jurisdiction.) These activities are not so integrally tied to the production nature of the furnace as to raise questions about the Agency's jurisdiction. In addition, EPA believes that both the existing statute and the new legislation express a strong mandate to take a broad view of what constitutes hazardous waste when hazardous secondary materials are burned for energy recovery, and to regulate as necessary to protect human health and the environment. See e.g., 48 FR 14502 (statutory definitions stating that secondary materials burned for energy recovery are solid wastes); H.R. Rep. 94-1491, *supra* at 4 (Congress' concern in promulgating Subtitle C was to "eliminat(e) the last remaining loophole in environmental law", not to create new loopholes); H.R. Rep. 98-198, *supra* at 41-42; S. Rep. No. 98-284 at 36. In taking this view, we thus reconsider and withdraw footnote 19 of the preamble to the proposed rule where we said we would count materials burned in industrial furnaces for both energy and material recovery as being burned for material recovery. For the reasons given above, we think that was a mistaken idea.

We note as well that if an industrial furnace burning secondary materials for ostensible material recovery is used to destroy the materials, it is not recycling but rather is incinerating them. Examples of such sham recovery are when there is no material recovery, or where material recovery is economically insignificant. Another example is when wastes are burned in excess of what can feasibly be recovered and used. (The following subsection discusses a regulatory change clarifying this principle.)

(c) *Amendment to Applicability Section of Subpart O of Parts 264 and 265.* In the final rule, we are codifying the general principle that boilers and industrial furnaces used to destroy wastes rather than to recover energy and material from them are considered to be incinerating the wastes, and thus are subject to the permit requirements of Subpart O of Part 264 or the interim status requirements of Part 265. (This amendment is found in the applicability sections of Subpart O of Parts 264 and 265.) We intend for this amendment to remain in effect until we develop permit standards for burning in boilers and industrial furnaces. Not only is an interim control on those practices needed, but without this provision boilers and industrial furnaces burning for destruction would have no means of receiving a permit.

It also should be noted that with the exception of certain conditions in the definition of "boiler," we are not defining objectively what constitutes burning for destruction, such as specifying precise Btu limits for waste fuels or volume limits on waste feed. We have decided that there are too many exceptional circumstances where unvarying rules of this type would yield unintended results. It is better policy, we think, to apply the concepts explained here and in the Statement of Enforcement Policy, and so enforce this provision in a more individualized manner.

(d) *Examples of How These Provisions Operate.*

The following examples indicate which secondary materials are wastes when burned for energy recovery.

- Facility A burns an unlisted ignitable by-product in its boilers.

A is considered to be burning a hazardous waste since all secondary materials burned for energy recovery are defined as solid wastes. (Ignitable wastes will have high Btu value, and so the waste will be burned for legitimate energy recovery.)

- Facility B burns the same by-product in an industrial furnace to recover energy.

B is considered to be burning a hazardous waste for the same reason as A was in the first example.

- Facility C burns an unlisted EP toxic by-product in its boiler to recover both materials and energy.

C is considered to be burning a hazardous waste for energy recovery, since secondary materials burned for a dual recycling purpose in boilers are considered for jurisdictional purposes to be burning for energy recovery. This answer assumes that sufficient energy and material values are recovered so that the waste is not being burned for destruction.

- Facility D burns the same by-product in an industrial furnace to recover both energy and materials.

D is considered to be burning a hazardous waste, even though the waste is an unlisted by-product, and even though there is some material recovery. Unlisted by-products burned for energy recovery in any type of combustion unit are defined as solid wastes. If D were burning exclusively for material recovery—for example if D operated a smelting furnace burning to recover metal—the material would not be a solid waste since it would be an unlisted by-product being reclaimed.

- Facility E burns an unlisted EP toxic sludge in its industrial furnace but recovers no energy and minimal material values. The material recovered is also unrelated to the material the furnace normally produces.

E would be considered to be burning a hazardous waste for destruction, and so would have to comply with the standards for incineration in Subpart O of Parts 264 and 265.

3. *The Agency's Future Plans for Regulating Burning of Hazardous Waste for Energy Recovery.* As noted above, the actual burning of hazardous waste for energy recovery in boilers and industrial furnaces is exempt from regulation. There was strong consensus in the public comments—confirmed by recent legislative action—that there is a need for regulatory action to control this type of burning. The Agency agrees, and is adopting a phased approach to address the problem. We will soon be proposing the first set of regulations which would ban burning of hazardous wastes and contaminated used oil in non-industrial boilers, and would impose administrative controls on these materials whenever burned in industrial boilers or industrial furnaces.

The next phase of regulations will develop permit standards for burning in industrial boilers and in some industrial furnaces. In developing these standards, we will use many of the factors recommended by commenters in this proceeding. Thus, we intend that these units achieve the same ultimate level of protection as incinerators, and (in some cases) will specify design and operating conditions based on the type of waste and the operating efficiency of the combustion unit to ensure that this level of performance is achieved.

We also are considering adopting general narrative standards, roughly analogous to those contained in the Part 267 regulations (see 46 FR 12429, February 13, 1981), for remaining industrial furnaces burning hazardous wastes for energy recovery. This will allow these units to be permitted immediately until such time as the Agency is able to develop unit specific permit standards for them.

At the time these standards are in place, the Agency intends to withdraw the Statement of Enforcement Policy and the rules stating that the Subpart O regulatory standards for incinerators apply to boilers and industrial furnaces burning hazardous wastes for destruction. This is because we will then have promulgated the permit standards necessary to protect human health and the environment for boilers and industrial furnaces burning hazardous

solvents and gasoline (to name only some of the more valuable commodities) from product storage tanks, showing the risk of spillage of stored commodities. The recent addition of Subtitle I to RCRA to control leaks from underground product storage tanks confirms that the risk of harm from spillage is significant. Indeed, there have been a number of instances of groundwater contamination caused by improper storage of hazardous wastes awaiting reclamation by their generator, hazardous wastes being reclaimed pursuant to batch tolling agreements, and hazardous wastes being reclaimed before use by the reclaimer—the situations that would have been conditionally exempt under the proposal. (See Appendix A.)

Equally important, the Agency already has determined that it is necessary to regulate hazardous waste storage in order to protect human health and the environment, and has also determined that regulations are needed to prevent the "uncontrolled release of hazardous waste constituents into the environment." See 46 FR 2802, 2807 (January 12, 1981). These prior findings are relevant to the question of regulating hazardous waste storage before recycling. There is a risk, as stated above, that spills and leaks of hazardous waste will occur, even if the wastes eventually will be recycled. Spills and leaks are the principal example of uncontrolled hazardous waste releases from storage and thus ordinarily require regulatory control. The Agency is persuaded that its existing findings are valid for hazardous wastes stored before recycling except in those situations in which wastes are so economically valuable that there is an economic imperative to avoid release.

The Agency thus finds that the factual basis for most of the conditional exemptions in the proposal was not justified, and that the Agency's general findings as to the need to control hazardous waste storage are valid for these recycling situations. Hazardous wastes stored before reclamation—even where there is minimal risk of overaccumulation—still can present significant potential for harm to human health and the environment if mismanaged, and market mechanisms are insufficient to prevent mismanagement from occurring. Regulation thus is called for.

In determining the level of regulation to adopt for those facilities which would have been conditionally exempt, the Agency is guided by the principle that the paramount and overriding statutory objective of RCRA is protection of human health and the environment. The statutory policy of encouraging recycling is secondary and must give way if it is in conflict with the principal objective. See 48 FR 14474/1, 14492/2; see also H.R. Rep. No. 98-198, *supra*, at 46.[6] We accordingly have determined that, for the most part, the conditional exemptions we proposed were unwarranted and facilities recycling in these ways should be subject to regulation under the Subtitle C rules.

## *III. An Overview of the Final Definition of Solid Waste*

### A. Materials That Are Solid Wastes

The revised definition of solid waste states that any material that is abandoned by being disposed of, burned, or incinerated—or stored, treated, or accumulated before or in lieu of these activities—is a solid waste. The remainder of the definition states which materials are wastes when recycled.

The amended definition adopts the approach that for secondary materials being recycled, one must know both what the material is and how it is being recycled before determining whether or not it is a Subtitle C waste. This approach differs sharply from the existing definition (40 CFR 261.2), which states that all sludges, and virtually all other secondary materials (*i.e.* all those that are sometimes discarded by anyone managing them (see fn. 2 above)), are wastes no matter how they are recycled. In understanding the revised definition, therefore, one must consider the types of secondary materials in conjunction with types of recycling practices.

1. *Types of Recycling Activities That Are Within The Agency's Subtitle C Jurisdiction.* The definition states that four types of recycling activities are within EPA's jurisdiction:

- *Use constituting disposal.* This activity involves directly placing wastes or waste-derived products (a product that contains a hazardous waste as an ingredient) onto the land. Extending jurisdiction to waste-derived products placed on the land represents a change from the proposal.
- *Burning waste or waste fuels for energy recovery, or using wastes to produce a fuel.*
- *Reclamation.* This activity involves the regeneration of wastes or the recovery of material from wastes.
- *Speculative accumulation.* This activity involves either accumulating wastes that are potentially recyclable, but for which no recycling market (or no feasible recycling market) exists, or accumulating wastes before recycling unless 75% of the accumulated material is recycled during a one-year period. (This provision now includes the activity referred to in the proposal as overaccumulation.)

2. *Types of Secondary Materials That Are Within The Agency's Subtitle C Jurisdiction.* These categories of recycling activities then are divided further according to the type of secondary material involved—spent materials, sludges, by-products, or commercial chemical products (a division present in the existing regulations—see 40 CFR 261.2(b)(1)(3)). We also have clarified the proposal by adding a new category of secondary material—scrap metal.

"*Spent materials*" are materials that have been used and are no longer fit for use without being regenerated, reclaimed, or otherwise re-processed. Examples are spent solvents, spent activated carbon, spent catalysts, and spent acids.

"*Sludges*" are defined in RCRA and the implementing regulations as residues from treating air or wastewater, or other residues from pollution control operations. (See RCRA section 1004(26)(A) and 40 CFR 260.10.)

"*By-products*" are defined essentially the same way as in the existing definition to encompass those residual materials resulting from industrial, commercial, mining, and agricultural operations that are not primary products, are not produced separately, and are not fit for a desired end use without substantial further processing. The term includes most secondary materials that are not spent materials or sludges. Examples are process residues from manufacturing or mining processes, such as distillation column residues or mining slags.

"*Commercial chemical products*" are the commercial chemical products and intermediates, off-specification variants, spill residues, and container residues listed in 40 CFR 261.33. Although these materials ordinarily are not wastes when recycled (see 45 *FR* 78540-541, November 25, 1980), we are including them as wastes when they are recycled in ways that differ from their normal use, namely, when they are used in a manner constituting disposal, or when they are burned for energy recovery, (assuming these materials are neither a pesticide nor a commercial fuel).

[6] The Agency also does not believe that hazardous waste recycling will be discouraged in those situations that we now intend to regulate. Not only do the incremental costs of regulation appear to be minimal (see Part IV of this preamble), but regulation can actually encourage recycling. See 45 FR 33092 (May 19, 1980) and Section II.A. above.

include those materials and byproducts generated from, and commonly reused within, an original manufacturing process.

"(20) The term 'recovered resources' means material or energy recovered from solid waste.

"(21) The term 'resource conservation' means reduction of the amounts of solid waste that are generated, reduction of overall resource consumption, and utilization of recovered resources.

"(22) The term 'resource recovery' means the recovery of material or energy from solid waste.

"(23) The term 'resource recovery system' means a solid waste management system which provides for collection, separation, recycling, and recovery of solid wastes, including disposal of nonrecoverable waste residues.

"(24) The term 'resource recovery facility' means any facility at which solid waste is processed for the purpose of extracting, converting to energy, or otherwise separating and preparing solid waste for reuse.

"(25) The term 'regional authority' means the authority established or designated under section 4006.

"(26) The term 'sanitary landfill' means a facility for the disposal of solid waste which meets the criteria published under section 4004.

"(26A) The term 'sludge' means any solid, semisolid or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effects.

"(27) The term 'solid waste' means any garbage, refuse, sludge, from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).

"(28) The term 'solid waste management' means the systematic administration of activities which provide for the collection, source separation, storage, transportation, transfer, processing, treatment, and disposal of solid waste.

"(29) The term 'solid waste management facility' includes—

"(A) any resource recovery system or component thereof,

"(B) any system, program, or facility for resource conservation, and

"(C) any facility for the collection, source separation, storage, transportation, transfer, processing, treatment, or disposal of solid wastes, including hazardous wastes, whether such facility is associated with facilities generating such wastes or otherwise.

"(30) The term 'solid waste planning', 'solid waste management', and 'comprehensive planning' include planning or management respecting resource recovery and resource conservation.

"(31) The term 'State' means any of the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.

"(32) The term 'State authority' means the agency established or designated under section 4007.

"(33) The term 'storage', when used in connection with hazardous waste, means the containment of hazardous waste, either on a temporary basis or for a

percentage ownership, direct and indirect, in these affiliates, including shareholdings between them;

(ii) The geographical areas [1] where operations are carried out and the principal activities carried on therein by the parent company and the main affiliates;

(iii) The operating results and sales by geographical area and the sales in the major lines of business for the enterprise as a whole;

(iv) Significant new capital investment by geographical area and, as far as practicable, by major lines of business for the enterprise as a whole;

(v) A statement of the sources and uses of funds by the enterprise as a whole;

(vi) The average number of employees in each geographical area;

(vii) Research and development expenditure for the enterprise as a whole;

(viii) The policies followed in respect of intragroup pricing; and

(ix) The accounting policies, including those on consolidation, observed in compiling the published information.

Government appeals to multinational firms voluntarily to disclose the kind of information described in S. 2839 and in the OECD declaration are likely to be resisted, if not totally ignored. I believe, however, that the United States, which has jurisdiction over most of the world's largest multinationals, should take the lead in requiring disclosure of such information as a model and incentive to other nations to do likewise. Legislation supplementing the current bill along the lines suggested by Senator Church and myself, combined with strong diplomatic efforts to achieve disclosure of similar information by foreign-based multinationals, would go a long way toward achieving full international sharing of essential trade and investment information on a country-by-country and company-by-company level, and should be further considered and pursued.

JONATHAN B. BINGHAM.

[1] For the purposes of the guideline on disclosure of information the term "geographical area" means groups of countries or individual countries as each enterprise determines is appropriate in its particular circumstances. While no single method of grouping is appropriate for all enterprises, or for all purposes, the factors to be considered by an enterprise would include the significance of operations carried out in individual countries or areas as well as the effects on its competitiveness, geographic proximity, economic affinity, similarities in business environments and the nature, scale and degree of interrelationship of the enterprise's operations in the various countries.

O



94TH CONGRESS, 2d Session } HOUSE OF REPRESENTATIVES { REPORT No. 94-1491

# RESOURCE CONSERVATION AND RECOVERY ACT OF 1976

## REPORT

OF THE

## COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE

## U.S. HOUSE OF REPRESENTATIVES

ON

## H.R. 14496

(Including Cost Estimate of the Congressional Budget Office)

SEPTEMBER 9, 1976.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

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waste itself, than in the form of products which will at some future time constitute waste).

The fact that waste itself is in interstate and intermunicipal commerce has raised a number of problems. (Generally, hazardous waste is more likely to be the subject of interstate transportation than is non-hazardous industrial or municipal waste). Several jurisdictions, including some states, have attempted to prohibit the importation of waste. In Wisconsin, ownership of the waste in commerce has been the subject of lengthy litigation.

The volume of waste being generated and the capacity for its disposal in the traditional manner are the source of the discarded materials problem. At present two possible solutions have been presented to the committee. These are resource conservation by reducing the amount of waste generated and resource conservation, achieved by reclaiming valuable materials from the waste and thereby reducing the volume to be disposed of. The latter approach holds the additional benefit of lessening the demand for raw materials and thereby preserving the domestic reserves of these materials.

Both methods of discarded materials management have been implemented on a limited scale to date. They have included systematic and technological variations. They have had mixed success.

Some technology for resource recovery has reached a fairly developed stage. Others require additional research and development attention. Since research activities are not within the jurisdiction of the Commerce Committee, the needs in this area have been addressed by the Committee on Science and Technology in Part II. The Commerce Committee does however recognize resource recovery technology as a potential solution to the discarded materials disposal problem, particularly in urban areas.

The major need in the management of discarded materials appears to be for a rationalization of the waste management system which now includes many independent activities often having less than optimal results. Regional or statewide planning for discarded materials management is not widespread. The potential of resource conservation or recovery is seldom considered as important as the problem of transportation to the dump.

Testimony presented at the hearings and at the Resource Recovery Symposium sponsored by the Committee shows a need for a more wideranging dissemination of information concerning the potential of resource conservation and recovery as solutions to the discarded materials disposal problem. Even if municipalities are aware of this potential, the technical and institutional barriers they face in implementing a resource recovery system are often insurmountable without assistance.

For example, many cities cannot enter into long term contracts. Resource recovery facilities cannot be built unless they are guaranteed a supply of discarded material. The aggregation of so many independent units of local government creates numerous institutional and legal barriers. Such aggregation also complicates financial arrangements, which in many instances involve partial local financing such as general obligation bonds, or revenue bonds, or partial equity funding by a corporation constructing the facility or providing equipment. Most local governments have no experts on the recovery technology or conservation systems available.



These institutional and technical barriers and the lack of ability to overcome then under the present circumstances can only be viewed as a background. Overcoming these problems, although important, will not solve the discarded materials problem in its entirety.

The problems caused by past and present disposal methods will remain. Open dumps will still be shelters for vermin; breeding grounds for disease; and scars on the American landscape. Unless action is taken to change the current operation of open dumps they will remain the least costly and therefore most attractive disposal method.

Sanitary landfills, a name often given to dumps for the sake of compliance with local health ordinances, will continue to leach pollutants into underground water supplies. They will continue to pollute the air by their frequent "accidental" ignition. They will continue to generate explosive gases which can threaten any future use of the land.

Even more threatening are the present disposal practices for hazardous waste. Current estimates indicate that approximately 30–35 million tons of hazardous waste are literally dumped on the ground each year. Many of these substances can blind, cripple or kill. They can defoliate the environment, contaminate drinking water supplies and enter the food chain under preset, largely unregulated disposal practices. In many instances these hazardous wastes are disposed of in the same manner and location as municipal refuse—in the local landfill. There are seldom records of the deposit or of the composition of such hazardous wastes. It is generated, transported and buried without notice until the evidence of its presence is seen in persons or the environment.

It is the purpose of this legislation to assist the cities, counties and states in the solution of the discarded materials problem and to provide nationwide protection against the dangers of improper hazardous waste disposal.

This bill suggests that the first step in preserving the land is to end those practices which are most harmful. It requires that hazardous wastes be disposed of only at sites or facilities specifically designed for that purpose. The bill requires an end to open dumping and the upgrading of discarded materials disposal facilities to standards which provide real protection for the environment. It encourages state and regional planning for discarded materials management and provides assistance for the implementation of resource conservation or recovery systems.

This bill provides the groundwork for solving the discarded materials disposal problem and for minimizing the dangers of hazardous waste disposal. At the same time it proposes a way to lessen the drain on our domestic resources and to decrease our dependence on foreign sources of raw material and energy, both of which can be reclaimed from waste. Most important, it is a needed step toward protecting the purity of the land itself, and health of our people and the vitality of our environment.

OFFICE OF DISCARDED MATERIALS

At the present time there are offices within Environmental Protection Agency for water and air. There is however no office for land management. This title creates such an office within the EPA to be designated as the Office of Discarded Materials, and headed by an assistant administrator. This statutory establishment would give management parity with the air and water offices. In addition to giving land pollution parity, the establishing language also sets out the duties and responsibilities to be undertaken by the office.

A reduction in solid waste office personnel occurred in 1974 when manpower budgeted to implement the Waste Disposal Act was reduced from its historical high level of 225 to 183. Additional cuts were made in the following years bringing to 174 the personnel positions budgeted in 1976. That manpower level is lower than any year except for 1966, the first year positions were budgeted under the Solid Waste Disposal Act of 1965.

*Total positions budgeted to implement the Solid Waste Disposal Act of 1965*

| Fiscal year: | Permanent positions budgeted |
|---|---|
| 1966 | 70 |
| 1967 | 177 |
| 1968 | 187 |
| 1969 | 206 |
| 1970 | 206 |
| 1971 | 206 |
| 1972 | 212 |
| 1973 | 225 |
| 1974 | 183 |
| 1975 | 183 |
| 1976 | 174 |

Source: Budget Operations Division, EPA, from budget submissions to the Congress.

Although the Office of Solid Waste Management's major responsibilities are under the Solid Waste Disposal Act of 1965, it has other duties under other acts. A 1974 administration proposal would have cut the personnel total of the Office of Solid Waste Management from 312 to 120.

Under this bill it would be much more difficult to cut the personnel of budget of the Office or to sacrifice the waste management functions for the sake of air or water programs since all three offices would enjoy similar statutory authorization.

The duties and responsibilities of the Deputy Assistant Administrator of Discarded Materials Management are to administer the Solid Waste Disposal Act of 1965 and the Resource Conservation and Recovery Act of 1976. Coexistent with those responsibilities is the authority to issue regulations to implement both of the acts. The Office is authorized to gather information and to cooperate with other federal agencies in the collection and dissemination of waste management information. Further, the Administrator is authorized to give technical and financial assistance to the States in the development of discarded materials and hazardous waste management plans.

In addition the Administrator has the power to commence or defend all actions at the trial level and at the appeal level, including the United States Supreme Court, in those cases that involve Federal



Facilities that are not in compliance with the regulations promulgated by the Administrator pursuant to Title III and IV of this Act. The purpose of granting the Administrator such authority is to prevent potential conflicts of interest at the Department of Justice where the Department would have to represent the Federal facility not complying with the Administrator's regulations and the Administrator at the same time, in the same litigation. Without this authority, this conflict-of-interest problem could become extremely acute under this legislation regarding section 601 which requires the Administrator to enforce federal standards relating to discarded materials and hazardous waste management against federal facilities.

Other duties under the Office include authority to disseminate information on the methods and costs of collection and other discarded material management practices. These will include methods to reduce the volume of waste generated; the existing and developing technologies for energy and materials recovery from discarded materials; their cost, reliability and risk; hazardous waste, damage resulting from disposal of hazardous waste; and methods of neutralizing and properly treating such hazardous wastes; methods of financing resource recovery facilities, sanitary landfills, and hazardous waste treatment facilities, and locating new markets for resources recovered from waste.

The administrator is also to develop model codes to be used by state and local agencies in the development of discarded materials plan. He will develop a model accounting system, to reflect the actual costs and revenues associated with the collection and disposal of discarded materials and with resource recovery operations.

After collection and evaluation of the information the Administrator is required to disseminate the information. The dissemination of such information will be done in principally three ways. The establishment of a library which will contain both raw data and analyses from the studies undertaken in the agency's research and development programs; and information gathered by the EPA from the other agencies involved in solid waste. All library materials should be readily available to the public on request or through active agency information dissemination programs.

The library should also serve as a basic resource for the Resource Recovery and Conservation Panels which are to assist the cities, local authorities and states in the development of resource recovery systems and in the development of discarded material management plans.

DEVELOPMENT AND DISSEMINATION OF INFORMATION

This section (204) requires the Administrator to collect, evaluate and disseminate information on the methods and costs of collection and other discarded material management practices. These will include methods to reduce the volume of waste generated; the existing and developing technologies for energy and materials recovery from discarded materials; their cost, reliability and risk; hazardous waste, damage resulting from disposal of hazardous waste; methods of neutralizing or properly treating such hazardous wastes; methods of financing resource recovery facilities, sanitary landfills, and hazardous waste treatment facilities; and locating new markets for resources recovered from waste.

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New Mexico Health and Environment Department

MARALYN BUCKI
Acting Secretary

CARLA L. MUTH
Deputy Secretary

MICHAEL J. BURKHA
Deputy Secretary

RICHARD MITZELFE
Director

July 19, 1989

Mr. Robert Layton
Regional Administrator
U.S. EPA - Region VI
1445 Ross Ave.
Dallas, TX 75202

Dear Mr. Layton:

Attached, please find New Mexico's application for RCRA authorization for Mixed Radioactive Waste and Subpart X. This application consists of the following attachments:

1) Hazardous Waste Management Regulations - As Amended:
2) Addendum to the program description:
3) Revised Attorney General's Statement:
4) A copy of the statutes:
5) Applicable checklists

New Mexico has just amended its' hazardous waste management regulations to encompass the 1988 40 CFR as codified July 1, 1988. These regulations have been filed and became effective on July 9, 1989. Through this action New Mexico now has the regulations required to issue permits to miscellaneous units such as the Waste Isolation Pilot Project (WIPP) located near Carlsbad. In addition to amending the regulations, the exclusion contained within the Hazardous Waste Act preventing the regulation of wastes destined for WIPP has been eliminated. Hopefully, this application carries the same importance at EPA as it does within the EID.

Should you or your staff have any questions concerning this submittal, please contact Mr. Boyd Hamilton of my staff at (505) 827-2926.

Sincerely,

Richard Mitzelfelt
Director

RM:SH:aw

cc: Lynn Prince, U.S. EPA - Region VI
Tracy Hughes, EID - Office of General Counsel

— ENVIRONMENTAL IMPROVEMENT DIVISION —
Harold Runnels Building
1190 St. Francis Dr.

## PROGRAM DESCRIPTION

This narrative has been developed to augment the program description as submitted by the State of New Mexico in seeking authorization for management of the New Mexico Hazardous Waste Management Program.

Through this application, the State Of New Mexico seeks authorization for a revision to its authorized hazardous waste management program. The State received final authorization from the U.S. EPA in January, 1986, and has subsequently submitted two additional requests for revision. Pursuant to 40 CFR, the State is submitting this application to reflect recent revisions and to assure that the authorized state hazardous waste program remains equivalent to the federal hazardous waste program under the Resource Conservation and Recovery Act (RCRA), as amended.

The state is amending its regulations to incorporate the 1988 40CFR as codified 1 July 1989. Additionally, the State has amended its statutes to eliminate the language which prevented the regulation of mixed waste destined for WIPP. With these two changes the State is thus applying for Mixed Waste authorization and Subpart X authorization.

Since the State has been operating a hazardous waste waste program for sometime the mechanisms for implementation and enforcement of a mixed waste program are already established. As are the procedures for permitting and regulating facilities under Subpart X. The State will utilize the procedures for implementation, inspection, enforcement, and permitting as currently exist within the authorized program.

It is estimated that there may be in excess of: 100 medical facilities that may generate mixed waste; 100 facilities within the RCRA universe that may generate mixed waste; and, 275 facilities licensed by the New Mexico Radiation Protection Program that may generate mixed waste. Also, there are nine known facilities that have units to be permitted under Subpart X authority. Within this group of facilities that will require permits are the Waste Isolation Pilot Project, Los Alamos National Laboratory, and Sandia National Laboratory

The State will utilize the current hazardous waste program staff that are trained in RCRA activities to implement the mixed waste and Subpart X requirements. As training courses are made available for mixed waste, staff members will be required to attend. Until such time as the program has established the expertise for mixed waste that expertise is available from within the Division. This expertise to be from staff within the Special Waste Bureau (SWB). Present staff positions within the SWB that can be tapped for assistance are as follows:

Health Program Manager: The person within this position is an engineer with years of experience in the area of management of radioactive waste and is trained in the area of health physics.

Radiation Specialist: There are two positions within this classification. Personnel in these positions are trained in both health physics and radiation management.

The SWB will provide the technical support necessary to implement all radioactive phases of the mixed waste portion of the hazardous waste program. When permit applications are received they will be shared between between SWB and the hazardous waste program to assure adequate technical reviews. SWB will assign an individual to each permit to be responsible for the review of the radioactive portion of the permit.

ADDENDUM TO
ATTORNEY GENERAL'S SUPPLEMENTAL STATEMENT
TO MAINTAIN AUTHORIZATION

I hereby certify, pursuant to my authority as Assistant Attorney General set forth in §§8-5-2(D) and 8-5-5(A) NMSA 1978, and in accordance with §3006 (b) of the Resource Conservation and Recovery Act ("RCRA") as amended by the Hazardous and Solid Waste Amendments of 1984 (42 U.S.C. 6901 et seq.) and 40 C.F.R. 271 that in my opinion the laws of the State of New Mexico provide adequate authority to carry out the revised "Program Description" submitted by the Environmental Improvement Division of the New Mexico Health and Environment Department ("Division"). The specific authorities provided, which are contained in statutes or regulations lawfully adopted at the time of this Statement and which will be in full force.

I. IDENTIFICATION AND LISTING

G. State regulations define solid waste to include the hazardous components of radioactive mixed wastes, July 3, 1986, 51 FR 24504. Federal Authority: RCRA §§1006 and 3001 (b).

Citation of Laws and Regulations; Date of Enactment and Adoption
Remarks of the Attorney General

Adoption of federal regulations by reference, HWMR-5 §201.

VII. NATIONAL UNIFORM MANIFEST SYSTEM AND RECORD KEEPING

C. State regulations require that the following be recorded, as it becomes available, and maintained in the operating record, until facility closure, as indicated in Revision Checklist 45: Monitoring, testing or analytical data, corrective action where required by Subpart F and §§264.226, 264.253, 264.254, 264.276, 264.278, 264.280, 264.303, 264.309, 264.347, and 264.602. Federal Authority: RCRA §§3004 and 3005; 40 CFR 264.73(b) as amended December 10, 1987; 52 FR 46946.

Citation of Laws and Regulations; Date of Enactment and Adoption
Remarks of the Attorney General

Adoption of federal regulations by reference, HWMR-5 §501, amended through July 1989.

XIII. CORRECTIVE ACTION

F. State regulations require that miscellaneous unit comply with regulations (Subpart F) regarding releases from solid waste management units when necessary to comply with §§264.601 through 264.603 as indicated in Revision Checklist 45. Federal Authority: RCRA 3004 (u); 40 CFR 264.90 (d) as amended December 10, 1987; 52 FR 46946.

Citation of Laws and Regulations; Date of Enactment and Adoption Remarks of the Attorney General

Adoption of federal regulations by reference, HWMR-5 §501, amended through July 1989.

XV. STANDARDS FOR FACILITIES

G. State regulations require compliance with closure/post-closure and financial responsibility requirements applicable to owners and operators of hazardous waste treatment, storage and disposal facilities, as indicated in Revision Checklists 24, 36, and 45. Federal Authority: RCRA §§3004 and 3005, 40 CFR 260, 264, 265, and 270 as amended May 2, 1986, 51 FR 16422, March 19, 1987, 52 FR 8704, and December 10, 1987, 52 FR 46946.

Citation of Laws and Regulations; Date of Enactment and Adoption Remarks of the Attorney General

Adoption of federal regulations by reference, HWMR-5 §§101, 501, 601, and 901, amended through July 1989.

J. State regulations require environmental performance standards; monitoring, testing, analytical data, inspection, response and reporting procedure; and post-closure care for miscellaneous units as indicated in Revision Checklist 45. Federal Authority: RCRA §§3004 and 3005; 40 CFR 264.600 through 264.603, as amended December 10, 1987; 52 FR 46946.

Citation of Laws and Regulations; Date of Enactment and Adoption Remarks of the Attorney General

Adoption of federal regulations by reference, HWMR §501, amended through July 1989.

XVI. REQUIREMENTS FOR PERMITS

O. State regulations require that all owners and operators of units that treat, store or dispose of hazardous waste in miscellaneous units must comply with the general application requirements (including Part A permit requirements), the Part B general application requirements of §270.14, and Specific Part B information requirements for miscellaneous units as indicated in Revision Checklist 45. Federal Authority: RCRA §§3004 and 3005; 40 CFR 264.600, 270.14 and 270.23 as amended December 10, 1987, 52 FR 46946.

Citation of Laws and Regulations; Date of Enactment and Adoption Remarks of the Attorney General

Adoption of federal regulations by reference, HWMR-5 §501 and 901 amended through 1989.

Tracy M. Hughes
Special Assistant Attorney General

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Alicia Mason
Assistant Attorney General
P.O. Box 1508
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# CHAPTER VI

## INACTIVE MATERIALS

1. GENERAL. The management of inactive nuclear materials has for its objective the timely return of nuclear materials to the DOE available inventory as soon as practicable after it becomes excess to program requirements. The identification, characterization, and timely disposition of inactive nuclear material are of particular interest. The availability of safe storage, recovery capability, potential usefulness of the material in its existing form for approved DOE programs or other Government agency programs, and its value to industry, all have a bearing on its disposition. Dollars are saved by reducing production requirements and, in those cases where material can be reused, fabrication and processing funds can be saved as well as time in implementing or accelerating ongoing programs. (Attachment VI-1 is a diagram of the management system for the disposition of the various types of excess materials.)

2. REQUIREMENTS AND RESPONSIBILITIES.

   a. Operations Office Responsibilities.

      (1) Unusable Excess Materials.

         (a) Unirradiated scrap nuclear materials generated in programs will be managed consistent with DOE policy and procedures. Operations offices are responsible for reviewing and forwarding scrap declarations to the appropriate Central Scrap Management Office. "E" project numbers shall be assigned to all declared recoverable scrap material.

         (b) Irradiated fuel for which present or near-term recovery capability is unavailable should be reported to DP-13 on a current basis and an "E" project number assignment requested. The report should include the project number, location, type, and quantity of contained nuclear material, and a physical and chemical description of the irradiated fuel.

      (2) Usable Excess Materials.

         (a) Excess production materials such as product metal, oxides, and other compounds should be reported to DP-13, and "M" project number assignments requested. These materials will continue to be held by the operations office reporting the material and can be made available for program use subject to DP-13 approval.