



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

OCT 28 1990

MEMORANDUM FOR: Those on Attached List

FROM: Robert M. Bernero, Director
Office of Nuclear Material Safety
and Safeguards

SUBJECT: EPA GUIDANCE ON THE LAND DISPOSAL RESTRICTIONS EFFECTS
ON THE STORAGE AND DISPOSAL OF MIXED WASTE

On October 3, 1990, a letter was sent to your office informing you of the development of a pamphlet, by the Environmental Protection Agency (EPA) with assistance of the Nuclear Regulatory Commission summarizing the requirements of the Resource Conservation and Recovery Act (RCRA). Since this pamphlet was developed, EPA has finalized an additional document outlining the requirements of the Land Disposal Restrictions (LDR) provisions of RCRA. The Office of Nuclear Material Safety and Safeguards (NMSS) intends to distribute this LDR document, along with the original RCRA pamphlet to selected licensees, in the near future.

Enclosed you will find several copies of the LDR document so that you can familiarize your staff with the information being sent to licensees. NMSS is still planning on presenting the one-day workshop on RCRA requirements for regional office staff in the second quarter FY91. You will be updated as details of the workshop become finalized.

If your staff receives questions from licensees needing detailed information regarding these mixed waste issues, please refer the licensees or questions to one of the following:

RCRA Hotline
800-424-9346 (toll free)
382-3000 in Washington D.C.

Richard LaShire
U.S. Environmental Protection Agency
Office of Solid Waste Programs Enforcement
401 M Street SW (OS-520)
Washington, D.C. 20460
(202) 382-2228

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- 2 -

Nick Orlando
U.S. Nuclear Regulatory Commission
Division of Low-Level Waste Management
and Decommissioning, MS 5-E-4
Office of Nuclear Material Safety
and Safeguards
Washington, D.C. 20555
(301) 492-0559

Please contact me if you have any questions about the aforementioned information.

(Signed) Robert M. Bernero

Robert M. Bernero, Director
Office of Nuclear Material Safety
and Safeguards

Enclosure: As stated

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

SEP 28 1990

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

TO ALL NRC LICENSEES:


SUBJECT: GUIDANCE ON THE LAND DISPOSAL RESTRICTIONS' EFFECTS ON
STORAGE AND DISPOSAL OF COMMERCIAL MIXED WASTE

The purpose of this letter is to announce the availability of guidance on the land disposal restrictions (LDR) for NRC licensees. The 1984 Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act directed EPA to develop regulations restricting the land disposal of RCRA hazardous wastes. The intent of the LDR provisions is to minimize the potential risk to human health and the environment by requiring treatment of wastes before land disposal. Since the hazardous component(s) of radioactive mixed waste is RCRA regulated, mixed radioactive waste handlers may now or soon will manage waste subject to the RCRA land disposal restrictions.

The attached guidance is intended to provide a general overview of the land disposal restriction regulations as well as to provide information on areas of the regulations that may particularly affect mixed waste handlers.

As identified in the guidance, the land disposal restrictions have created new responsibilities for mixed waste handlers. Therefore, it is important that mixed waste handlers take the time to develop a good understanding of the land disposal regulations. This guidance should not be used as a substitute for the land disposal restriction regulations found at 40 CFR 268 or the Federal Register rules that contain the promulgated LDR regulations. (See list of major rules at the end of guidance). Instead it should be used as a general guidance to familiarize the mixed waste handler with the land disposal restriction regulations.

Sincerely,


Sylvia K. Lowrance, Director
Office of Solid Waste
U.S. Environmental Protection
Agency

OVERVIEW OF THE EFFECT OF THE LAND DISPOSAL RESTRICTIONS ON RADIOACTIVE MIXED WASTE

The 1984 Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA) restrict the land disposal of hazardous wastes, including mixed waste. This brief outlines the major aspects of the land disposal restrictions as they apply to mixed wastes. A more detailed analysis is found in the attached guidance document.

WHAT IS MIXED WASTE?

Mixed waste is defined as a waste mixture that contains both radioactive materials subject to the Atomic Energy Act (AEA) and a hazardous waste component regulated under RCRA. The hazardous waste (i.e. the non-AEA material) can be either a listed hazardous waste in Subpart D of 40 CFR 261 or a waste that exhibits any of the hazardous waste characteristics identified in Subpart C of 40 CFR Part 261.

WHAT MIXED WASTES ARE CURRENTLY SUBJECT TO THE LAND DISPOSAL RESTRICTIONS (LDRS)?

The LDR regulations currently apply to all hazardous waste, including mixed waste, listed or identified as of November 8, 1984 under RCRA 3001. They also apply to several hazardous wastes newly listed after November 8, 1984 for which treatment standards have been developed. Treatment standards for radioactive waste mixed with solvents (F001 - F005), dioxins (F020 - F023 and F026 - F028) and California list wastes are currently effective. EPA deferred issuing treatment standards for radioactive waste mixed with scheduled hazardous waste until the promulgation of the last scheduled LDR rule on May 8, 1990 (the so-called Third Third rule). After May 8, 1990, all mixed wastes were restricted from land disposal. However, for all mixed waste addressed in the Third Third rule, EPA granted a two-year national capacity variance based on the lack of treatment capacity. This variance delays the imposition of treatment requirements for land disposal until May 8, 1992. (See 55 FR 22660, June 1, 1990.)

AFTER MIXED WASTES BECOME SUBJECT TO THE LDRS CAN THEY BE STORED?

After the effective date, the HSWA amendments prohibit any storage of a land disposal restricted waste, including mixed waste, except for the sole purpose of accumulating sufficient quantities in a tank or container to facilitate proper recovery, treatment, or disposal of that waste. (See 40 CFR 268.50, the storage prohibition.) There are, however, a few instances where continued storage of LDR waste is allowed in tanks or containers:

- (1) Continued storage of wastes first placed in storage prior to the applicable LDR date for that waste, until the waste is removed from storage.

Variance petitions should be sent to the U.S. EPA Administrator and the Office of Solid Waste (see 40 CFR 268.44).

(For further discussion on the extensions and variances, see pages six through eight of the attached document.)

HOW DOES STATE LAW APPLY TO MIXED WASTE?

Like other RCRA requirements related to mixed waste, the LDRs will apply only in States where EPA administers the RCRA program (unauthorized States) or in States that have adopted mixed waste requirements as part of their authorized State programs. In other States, the LDRs will not apply to mixed waste until the State becomes authorized for mixed waste. States may implement their own disposal restrictions as a matter of State law if such actions are more stringent or broader in scope than the actions of Federal programs (RCRA section 3009 and 40 CFR 271.1(i)). In States with more stringent or broader in scope restrictions, State law would govern. Twenty-two States were RCRA authorized for mixed waste as of September 1, 1990. For a list of States with mixed waste authorization refer to pages twelve and thirteen of the attached document.

FURTHER INFORMATION

1. See flow chart on the following page
2. Look at attached guidance document
3. Call your Regional EPA or State contact

Defining Mixed Radioactive and Hazardous Waste for the
 Purposes of Complying with the Land Disposal Restrictions (40 CFR Part 268)

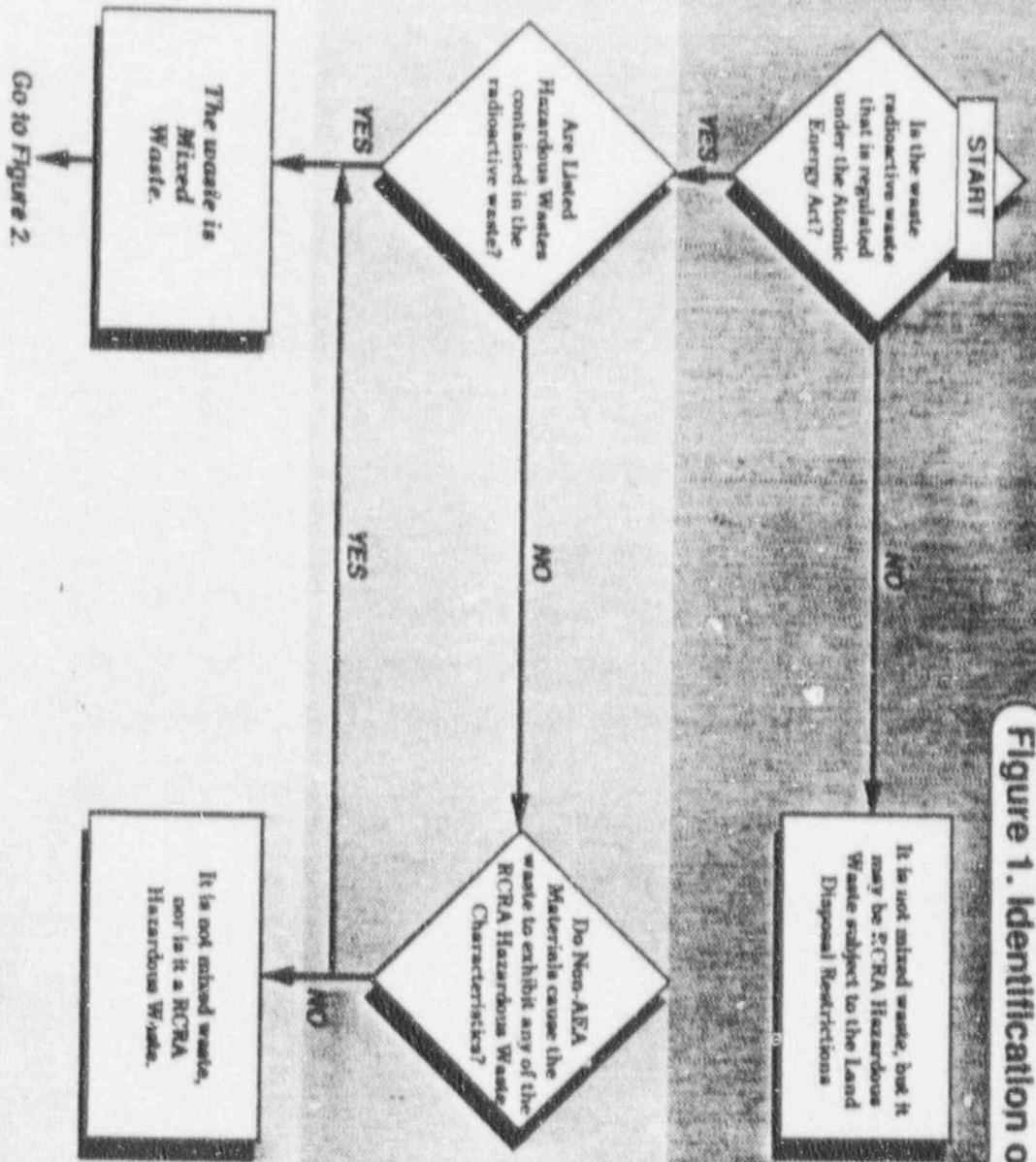
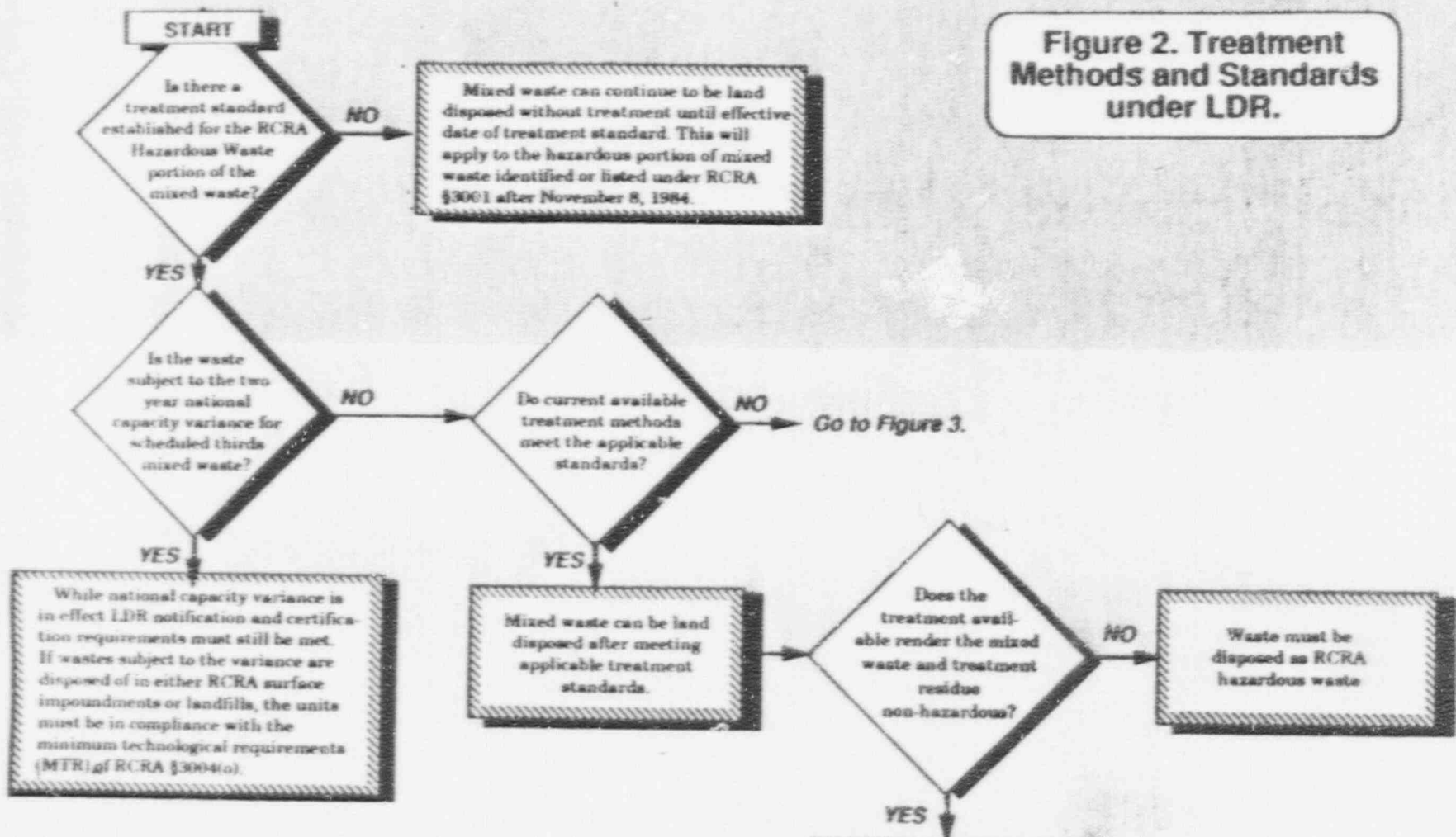


Figure 1. Identification of Mixed Waste

NOTE
 This Rowchart is a simplified version of the Land Disposal Restriction regulations of 40 CFR Part 268, and should not be used in lieu of those regulations.

Regulation of Mixed Wastes Under the RCRA Land Disposal Restrictions Program

Figure 2. Treatment Methods and Standards under LDR.



NOTES:

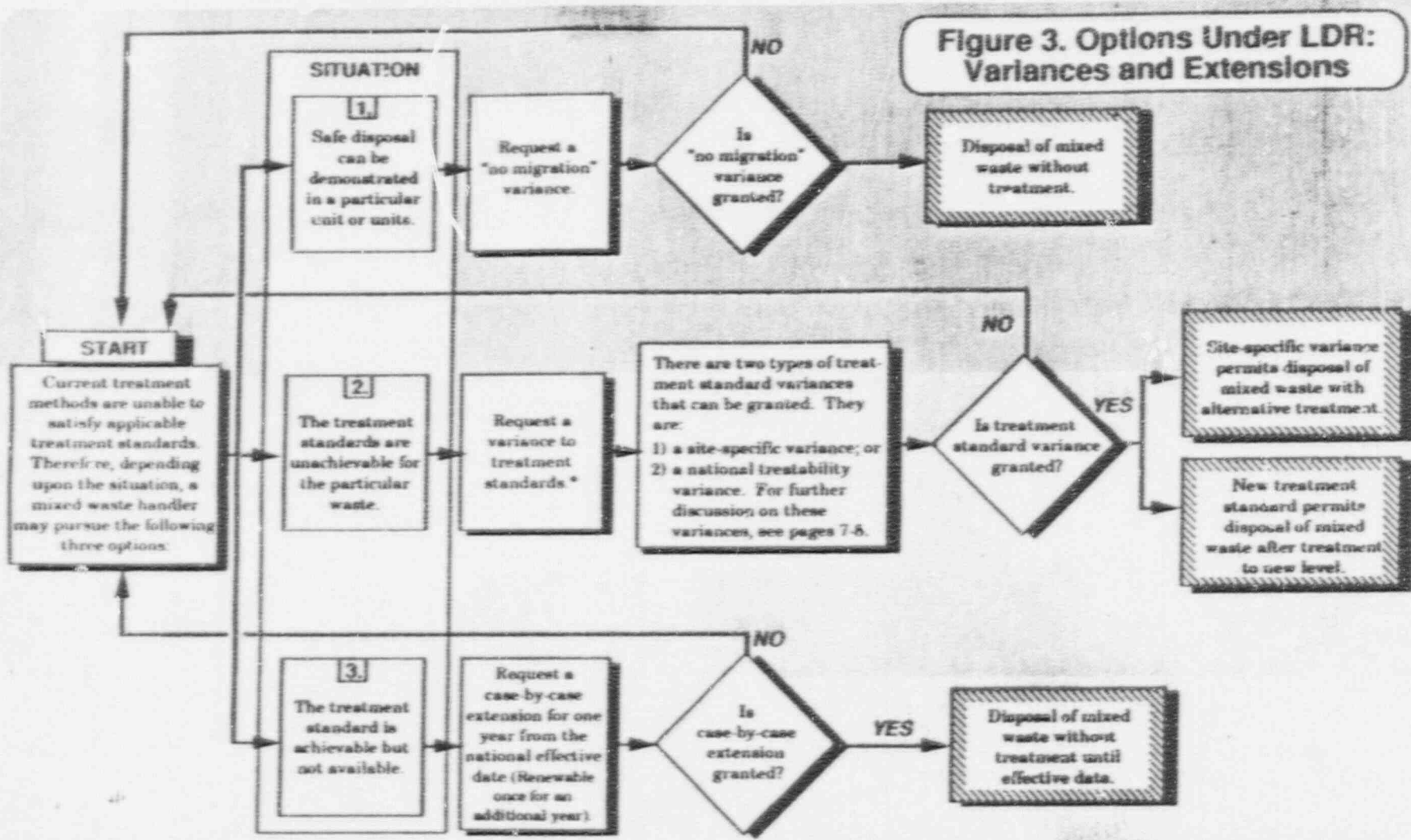
- If the hazardous component of the mixed waste is listed, but not listed solely because it exhibits one or more of the characteristics in Subpart C of Part 261, then it remains a hazardous waste regardless of treatment.

▨ The mixed waste must be disposed of at a mixed waste facility permitted under RCRA and licensed by NRC or Agreement State Authority.

*Note: Third Third treatment standards can go below characteristic levels.

Regulation of Mixed Wastes Under the RCRA Land Disposal Restrictions Program (continued)

Figure 3. Options Under LDR: Variances and Extensions



NOTES:
While the case-by-case and national capacity variances are in effect, LDR notification and certification requirements must still be met. Also, if wastes subject to the exemptions are disposed of in either surface impoundments or landfills, the units must be in compliance with the minimum technological requirements (MTR) of RCRA, Section 3004(a).

▨ The mixed waste must be disposed of at a mixed waste facility permitted under RCRA and licensed by NRC or Agreement State Authority.

* NOTE: If the treatment standard is technology-based then apply for an equivalent treatment method pursuant to 40 CFR §268.42(b). If the treatment standard is concentration-based then pursue a treatment standard variance (40 CFR §268.44).

GUIDANCE

RESOURCE CONSERVATION AND RECOVERY ACT LAND DISPOSAL RESTRICTIONS EFFECTS ON STORAGE AND DISPOSAL OF COMMERCIAL MIXED WASTE

Executive Summary

The 1984 Hazardous and Solid Waste Amendments (HSWA) of the Resource Conservation and Recovery Act (RCRA), through the land disposal restrictions (LDR), prohibit disposal of hazardous wastes that have not been pretreated to standards required by EPA, unless the wastes are subject to an exemption. The HSWA amendments also prohibit any storage of a land disposal restricted waste, except for the sole purpose of accumulating sufficient quantities to facilitate proper recovery, treatment, or disposal of that waste.

The LDRs may impact the day-to-day management of mixed waste by generators. Mixed waste is defined as a waste that satisfies the definition of radioactive waste subject to the Atomic Energy Act and contains hazardous waste that is either listed as a hazardous waste in Subpart D of 40 CFR Part 261 or exhibits any of the hazardous waste characteristics identified in Subpart C of 40 CFR Part 261. The hazardous component of mixed waste is regulated under RCRA.

LDR regulations currently apply to all mixed radioactive and RCRA hazardous wastes. The first group of mixed wastes subject to the LDR regulations were mixed radioactive and RCRA hazardous wastes that contain spent solvents, dioxins, or California list wastes. The remaining RCRA hazardous wastes were placed in three groups known as the First, Second, and Third Thirds. EPA deferred issuing treatment standards for radioactive waste mixed with First Third and Second Third hazardous wastes until the statutory effective date for the Third Third, May 8, 1990. On May 8, 1990, all mixed wastes containing hazardous wastes listed or identified as of November 8, 1984 were restricted from land disposal. However, mixed wastes that contain scheduled third wastes were granted a two-year national capacity variance which is explained later in the discussion. (Please note that mixed wastes granted a capacity variance are still considered restricted since scheduled third mixed wastes disposed in RCRA surface impoundments or landfills during the two-year period can only be placed in units that meet certain minimum technological requirements. Also during the variance, these wastes are subject to 40 CFR 268.7 waste analysis and recordkeeping requirements, and California list prohibitions if applicable.)

When the variance expires on May 8, 1992, all mixed wastes will be prohibited from storage except to accumulate sufficient quantities to facilitate proper recovery, treatment or disposal. (See 40 CFR 268.50, the storage prohibition.) There are, however, a few exceptions to the storage prohibition as indicated later in the discussion. Mixed wastes containing spent solvents, dioxins or California list wastes are currently subject to the storage prohibition.

EPA is aware that there is currently a shortage of treatment and disposal capacity for mixed waste which may cause mixed waste handlers to be out of compliance with the storage prohibition. Therefore, EPA plans to issue a policy statement regarding this matter in the fall of 1990.

greater than or equal to 50 ppm, and both liquid and nonliquid hazardous wastes containing designated concentration levels of halogenated organic compounds (HOCs).

(Most of these wastes are subsumed by other waste codes in the scheduled thirds (i.e., if a treatment standard has been promulgated for a California list waste in the scheduled thirds then the more waste-specific treatment standard takes precedence over the California list prohibition), and so the California list prohibitions were largely superseded on May 8, 1990, although the California list prohibitions may continue to apply during the period of a national capacity variance for scheduled waste. For example, if a Third Third mixed waste also meets the definition of a California list waste, it must be treated to prohibition levels specified for the California list waste prior to land disposal, although it is subject to a two-year national capacity variance.)

(3) At least one-third of all listed hazardous wastes--August 8, 1988 (First Third).

(4) At least two-thirds of all listed hazardous waste--June 8, 1989 (Second Third).

(5) Remaining wastes that were identified or listed as of November 8, 1984--May 8, 1990 (Third Third).

To find the complete list of all scheduled thirds wastes refer to 40 CFR 268, Subpart B-Schedule for Land Disposal Prohibition and Establishment of Treatment Standards.

Newly Identified and Listed Waste

EPA is required to make land disposal determinations for any hazardous waste identified or listed after November 8, 1984 within six months of the effective date of identification or listing. Unlike currently listed and characteristic wastes, the statute does not impose an automatic land disposal prohibition if EPA misses a deadline for issuing treatment standards for any newly listed or identified waste.

In the Third Third rule, EPA promulgated treatment standards for five wastes newly listed after November 8, 1984. Four of these wastes are within the F002 and F005 spent solvent listing and the other is F025 light ends and spent filters/aids and desiccants subcategory. (EPA also promulgated treatment standards for several newly listed wastes in the Second Third rule.) Examples of newly listed wastes where treatment standards have not been established are the wastes newly promulgated under the TC rule. Mixed radioactive TC wastes are therefore currently not subject to the LDRs.

Soft Hammer

HSWA established "soft hammer" provisions which are regulations for the management of wastes scheduled in the First and Second Thirds for which EPA failed to promulgate treatment standards by the scheduled deadlines (RCRA 3004(g)(6)). These did not include First and Second Third wastes that EPA rescheduled to the Third Third such as mixed wastes. These provisions applied only until May 8, 1990 when the "hard hammer" provisions described below superseded them. Before May 8, 1990, soft hammer wastes could be land disposed in a landfill or surface impoundment, only if:

- (1) The generator determined that placement in a landfill or surface impoundment was the only practical alternative to currently available treatment, and

Once a treatment technology is determined to be demonstrated and available, EPA collects and analyzes performance data from the specific treatment. EPA then analyzes how each treatment technology substantially diminishes the toxicity of the waste or substantially reduces the likelihood of migration of hazardous constituents from the waste. Finally, EPA chooses the "best" treatment technology based on performance data (e.g., the levels to which the technologies can treat specific hazardous constituents in the waste), and sets a performance standard based on this specific technology. Where constituent specific performance data cannot be obtained or is deemed unnecessary, EPA considers specifying that a technology must be used for the waste.

It is important to note that, in some cases, the specific technologies identified as the basis for BDAT are simply those technologies which EPA used to develop the waste-specific performance standard. Any technology or combination of technologies not otherwise prohibited can be used to achieve these standards. In other words, a specific treatment technology does not have to be used unless the specific method of treatment is specified as the treatment standard.

A treatment standard can be expressed as:

- (1) Concentration Levels - any treatment technology may be used, as long as hazardous constituents in the waste are treated to specific concentration levels
- (2) Treatment Technologies - the standard specifies which technology must be used to treat the waste before land disposal.
- (3) Deactivation - the treatment standard for a number of subcategories of D001-D003 wastes which specifies the removal of the characteristic of ignitability, corrosivity or reactivity. Recommended technologies that may be used to achieve deactivation are referenced in Appendix VI of Part 268.

To date, EPA has set special treatment standards for four categories of mixed waste. They include:

- (1) radioactive lead solids with a BDAT treatment standard of macroencapsulation;
- (2) radioactive elemental mercury with a BDAT treatment standard of amalgamation;
- (3) radioactive hydraulic oil contaminated with mercury and a BDAT standard of incineration and,
- (4) radioactive high level wastes generated during the reprocessing of fuel rods with a BDAT standard of vitrification,

The remaining mixed wastes are subject to those promulgated treatment standards that apply to the hazardous portion of the waste unless EPA publishes specific standards for mixed waste treatability groups in the future. (For further discussion on mixed waste treatment standards see 55 ER 22532 and 22626, June 1, 1990.)

Effective Dates for Land Disposal Restrictions

As soon as EPA sets a treatment standard, wastes subject to that standard are automatically prohibited from land disposal, unless the wastes meet the treatment standard or are disposed in an EPA approved no-migration unit (3004(h)(1)). EPA may through rulemaking revise a treatment standard after the statutory date. If no treatment capacity is available, EPA may defer the effective date of the standard, as explained below. Also, if wastes are generated that cannot be treated to the

Variances From the Prohibition

No Migration Petition

In carrying out the directives of RCRA Sections 3004(d)(1), (e)(1), and (g)(5), EPA will consider petitions to allow land disposal of untreated restricted waste, provided the petitioners demonstrate "to a reasonable degree of certainty that there will be no migration of hazardous constituents from the disposal unit or injection zone for as long as the wastes remain hazardous". For underground injection wells, EPA has interpreted this to mean the concentration of hazardous constituents must not exceed safe levels at the unit boundary. (EPA has not yet formally interpreted the statutory standard with respect to surface disposal units, although regulations for non-migration petitions currently exist at 40 CFR 268.6.) This demonstration can be made through site-verified modeling and monitoring, and must include an evaluation of air, surface water, ground water and soil exposure scenarios.

EPA expects that there will be relatively few cases in which this demonstration can be made, however, EPA is proposing to grant a conditional variance for ten years to the Department of Energy's (DOE) Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico. This is the first such proposal to grant a no-migration petition to a unit other than an underground injection well. If granted, the conditional variance will allow DOE to place transuranic or alpha-emitting mixed radioactive waste in the WIPP (an underground salt formation) without regard to LDR treatment standards for testing and experimentation purposes only.

Petitions for surface land disposal units are to be submitted to EPA Headquarters and petitions for underground injection wells to the Regional Administrator. EPA draft interim final guidance on no migration petitions for surface units is available for petition applicants.² A notice of availability for this document will be published around October 1990 concurrently with a proposed rule on no-migration variances for surface units. A final version of the guidance is scheduled for release around October 1991 concurrently with the final rule on no migration variances.

Variance From the Treatment Standard

EPA recognizes that wastes may exist that cannot be treated to the levels specified as the treatment standard (or, in some cases, by the method specified). In such cases, a petition may be submitted requesting a variance from the treatment standard. EPA envisioned that wastes may be subject to a treatability variance in cases where the treatment standard for a particular waste cannot be met because the waste does not fit into one of the BDAT treatability groups. A particular waste, such as a mixed waste stream, may be significantly different from the wastes considered in establishing treatability groups because the waste contains a more complex matrix, making it more difficult to treat. Variance petitions must demonstrate that the treatment standard established for a given waste cannot be met. This demonstration can be made by showing that attempts to treat the waste by available technologies were not successful, or through appropriate analyses of the waste, which demonstrate that the waste cannot be treated to the specified levels. Variances are not granted based on a showing that adequate BDAT treatment capacity is unavailable.

Treatability variances can be divided into two categories; a national treatability variance and a site-specific variance. A national treatability variance must be based on a demonstration that the waste is significantly different (physically or chemically) from the waste or treatability group used to set the treatment standard, such that the existing treatment standard cannot be met. The national treatability variance:

- (1) Establishes a new treatability group and treatment standards for a waste and all similar wastes.

Dilution as Treatment

Under the LDRs, dilution is prohibited as treatment for both listed and characteristic wastes (see 40 CFR 268.3). However, exceptions to the prohibition were made for:

- (1) Certain characteristic wastes generated and managed in waste treatment systems regulated by the Clean Water Act (See 40 CFR 268.3(b)). (Note that prohibited wastes treated by inappropriate methods are considered impermissibly diluted.)
- (2) Listed and characteristic wastes that are aggregated for legitimate treatment in centralized treatment systems. (Note that centralized treatment of incompatible wastestreams is not considered legitimate treatment and is viewed as impermissible dilution.)
- (3) Characteristic wastes that are disposed into hazardous or non-hazardous Class I injection wells regulated under the Safe Drinking Water Act and do not exhibit any prohibited characteristic of hazardous waste at the point of injection.
- (4) Prohibited non-toxic ignitable, reactive and corrosive wastes that are treated by dilution to meet a treatment standard.

Storage Prohibition

In addition to prohibiting the land disposal of hazardous wastes, Congress also prohibited the storage of any waste which is prohibited from land disposal unless "such storage is solely for the purpose of the accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal" [RCRA Section 3004(j)]. The intent of Congress was to ensure that long-term storage was not used as a means of avoiding a land disposal prohibition. Currently a capacity shortage exists for treatment and disposal of mixed wastes that may cause mixed waste handlers to be in violation of the storage prohibition. As a result, EPA plans to issue a policy statement regarding this matter in the fall of 1990. (For further discussion on storage issue see 55 ER 22673, June 1, 1990.)

The implementing regulations that address the prohibitions on storage of LDR waste are found in 40 CFR 268.50. This regulation essentially restates the statutory language.

Allowed Storage Times

It is apparent from the language in HSWA that Congress wished to prohibit extended storage of a LDR waste in lieu of treatment. There are, however, a few instances that allow for the storage of LDR waste in tanks or containers:

- (1) Continued storage of wastes first placed in storage prior to the applicable effective date of a LDR, until the wastes are removed from storage.
- (2) Placement of wastes in storage after the applicable effective date, only if the untreated wastes are stored solely for accumulation in the amounts necessary to facilitate proper treatment, recovery or disposal.
- (3) Storage of restricted wastes that are not prohibited from land disposal because they are exempt from the land disposal restrictions by statute or EPA regulation. (see 54 ER 36968, September 6, 1989.)

compounds, and codified the statutory prohibitions on liquid corrosive wastes. Also on this date, statutory prohibitions went into effect for liquid hazardous wastes containing certain metals and free cyanides. The California list standards were set up as interim treatment standards until more waste-specific standards could be established.

These two rules prohibit the land disposal of mixed waste that contains RCRA solvents or dioxins or California list wastes unless treatment standards developed for the hazardous waste portion are met. In other words, a spent solvent, dioxin or California list mixed waste must be treated to those concentrations or using the treatment method specified for its hazardous component prior to land disposal. For example, if a non-liquid mixed waste is identified as hazardous under 40 CFR Part 261 and it contains greater than 1000 mg/kg halogenated organic compounds (i.e., it is a California list waste), it must be incinerated as specified in Section 268.42.

HSWA also required EPA to prepare a schedule for restricting the land disposal of all hazardous waste listed or identified as of the date of the enactment of HSWA, excluding solvent- and dioxin-containing wastes. On May 28, 1986, EPA published a schedule (51 ER 19300) for setting treatment standards for the listed and identified hazardous waste. This schedule placed each of the listed and identified wastes in one of the "Thirds".

EPA promulgated the final rule addressing the First Third wastes on August 17, 1988 (53 ER 31137). In the First Third rulemaking, EPA postponed establishing treatment standards for mixed waste to the Third Third. (See 53 ER 31137 and amended Section 268.12.) The final rule establishing treatment standards for the Second Third wastes was published on June 23, 1989 (54 ER 26594). As was the case for mixed waste in the First Third, EPA postponed establishing treatment standards for mixed waste covered under the Second Third until the Third Third.

The Third Third rule was published on June 1, 1990 (55 ER 22520). In the rule, EPA granted mixed wastes containing scheduled third hazardous wastes a two-year national capacity variance. EPA also established treatment standards for four categories of mixed waste outlined on page five. After May 8, 1992, the hazardous portion of all mixed waste must meet the appropriate treatment standard for all applicable waste codes prior to disposal.

Effects of the LDR on the Storage and Disposal of Mixed Waste

Consistent with the intent of these regulations, the major impact of the land disposal restrictions on mixed waste disposal is that, on May 8, 1990, all waste must meet treatment standards prior to land disposal unless a variance or extension to the effective date is granted. It may be difficult or impossible to treat land disposal restricted mixed waste because a shortage of mixed waste treatment capacity exists; therefore, variances may be necessary.

Restricted wastes that are exempt from (e.g., wastes granted a national capacity variance) or not subject to a land disposal prohibition (e.g., wastes that meet specified treatment standards) are also exempt from or not subject to the storage prohibition. Wastes that do not meet a specific treatment standard and are not exempt from LDR by statute or regulation are prohibited from storage unless such storage is solely for the purpose of accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal. The storage prohibition does not affect those scheduled third mixed wastes that are disposed or stored prior to May 8, 1992. Instead, the prohibition addresses storage of scheduled third mixed wastes first placed into storage after May 8, 1992 unless these wastes are granted an additional variance.

It is important to note that mixed waste is not the only category of waste where treatment capacity is or may not be available on an LDR effective date. For example, no incinerators are currently permitted to treat already-stored prohibited dioxin wastes.

Summary

All mixed waste was subject to the RCRA land disposal restrictions on May 8, 1990 unless it was disposed of in land based units prior to that date stored, without being removed from storage after the effective date, is in a State that is authorized for RCRA's base program but has not yet received authorization for mixed waste, or is a newly identified or listed waste after November 8, 1984 for which treatment standards have not yet been promulgated. Currently, solvent- and dioxin-containing mixed wastes and California list mixed wastes have to be treated to the treatment standard for the hazardous portion of the waste. Treatment standards for radioactive mixed waste that contains scheduled third wastes are not effective due to a two-year national capacity variance; however, if these wastes are disposed of in RCRA surface impoundments or landfills the units must meet minimum technological requirements. These wastes are also subject to 40 CFR 268.7 reporting and recordkeeping requirements and the California list prohibitions if applicable.

The first step in dealing with LDRs is to determine whether the waste is a RCRA hazardous waste. Next, it must be established whether a treatment standard has been promulgated for the waste. If so, it is a restricted waste and subject to certain recordkeeping requirements of 40 CFR 268.7. Third, it must be determined whether the waste is destined for a prohibited form of land disposal and whether the treatment standard is in effect for the waste. If so, then the waste is a prohibited waste subject to all LDR requirements unless the generator or treater has obtained a variance or extension from the LDRs. However, each mixed waste handler needs to identify the types and quantities of mixed waste he or she currently generates and stores to evaluate the present and future treatment capacity for the waste(s).