ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 266

[FRN–6470–1]

RIN 2050–AE45

Storage, Treatment, Transportation, and Disposal of Mixed Waste

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule; request for comments.

SUMMARY: The Environmental Protection Agency (EPA) is today proposing to provide increased flexibility to facilities that manage low-level mixed waste (LLMW) and naturally occurring and/or accelerator-produced Radioactive Material (NARM) mixed with hazardous waste. The proposal also aims to reduce dual regulation of LLMW, which is subject to Resource Conservation and Recovery Act (RCRA) and to the Atomic Energy Act (AEA). We believe the changes we are proposing will lower cost and reduce paperwork burden, while improving or maintaining protection of human health (including worker exposure to radiation) and the environment.

We are proposing to allow on-site storage and treatment of these wastes at the generator's site. Today's proposal will require the use of tanks/containers to solidify, neutralize, or otherwise stabilize the waste and would apply only to generators of low-level mixed waste who are licensed by the Nuclear Regulatory Commission (NRC) or an Agreement State.

We also seek to exempt LLMW and hazardous NARM waste from RCRA manifest, transportation, and disposal requirements when certain conditions are met. Under this conditional exemption, generators and treaters must still comply with manifest, transport, and disposal requirements under the NRC (or NRC-Agreement State) regulations for LLW or NARM.

DATES: To make sure we consider your comments, they must be received on or before February 17, 2000.

We are seeking comment on this proposed rulemaking from all interested parties.

ADDRESSES: You can send an original and two copies of your comments referencing Docket Number F–99–ML2P–FFFFF to (1) if using regular US Postal Service mail: RCRA Docket Information Center, Office of Solid Waste (5305G), U.S. Environmental Protection Agency Headquarters (EPA, HQ), 401 M Street, SW, Washington, D.C. 20460, or (2) if using special delivery, such as overnight express service: RCRA Docket Information Center (RIC), Crystal Gateway One, 1235 Jefferson Davis Highway, First Floor, Arlington, VA 22202. It would also be helpful, although not mandatory, to include an electronic copy by diskette or Internet E-mail. In this case, send your comments to the RCRA Information Center on labeled personal computer diskettes in ASCII (TEXT) format or a word processing format we can convert to ASCII (TEXT). Please include on the disk label the name and version or edition of your word processing software as well as your name. Protect your diskette by putting it in a protective mailing envelope. To send a copy by Internet E-mail, address it to: rcra-docket@epamail.epa.gov. Make sure this copy is in ASCII format that doesn't use special characters or encryption. Cite the docket Number F–99–ML2P–FFFFF in your electronic file. Commenters should not submit electronically any confidential business information (CBI). An original and two copies of CBI must be submitted under separate cover to: RCRA CBI Document Control Officer, Office of Solid Waste (5305W), U.S. EPA, 401 M Street, SW, Washington, D.C. 20460.

The RCRA Information Center is at Crystal Gateway One, 1235 Jefferson Davis Highway, First Floor, Arlington Virginia. You may look at and copy supporting information for RCRA rules from 9:00 a.m. to 4:00 p.m. Monday through Friday, except for Federal holidays. To review docket materials you should make an appointment by calling (703) 603–9230. You may copy up to 100 pages from any regulatory document at no cost. Additional copies cost $0.15 per page. The index and some supporting materials are available electronically. See the Supplementary Information section for information on accessing them.

FOR FURTHER INFORMATION CONTACT: For general information about this proposed rule, contact the RCRA Hotline, Office of Solid Waste, U.S. Environmental Protection Agency, Washington, D.C. 20460, at (800) 424–9346 (toll free); or TDD (800) 553–7672 (hearing impaired). In the Washington, D.C. metropolitan area call (703) 412–9810 or TDD (703) 486–3323 (hearing impaired). For information on the disposal portion of the proposed rule, contact Grace Ordaz at (703) 308–1130 in the Office of Solid Waste. For information on the storage portion of the proposed rule, contact Nancy Hunt at (703) 308–8762 or Chris Rhyne at (703) 308–8658 in the Office of Solid Waste. To get copies of the reports or other materials referred to in this proposal, contact the RCRA Docket at the phone number or address listed above.

SUPPLEMENTARY INFORMATION: Follow these instructions to access the rule electronically on the Internet: www:http://www.epa.gov/epaoswer/hazwaste/radio.

The official record for this section will be kept in paper form. Accordingly, EPA will transfer all comments received electronically into paper form and place them in the official record, which will also include all comments submitted directly in writing. The official record is the record maintained at the address in **ADDRESSES** at the beginning of this document. Please note, even if you commented on the March 1, 1999 Advance Notice of Proposed Rulemaking (64 FR 10063), for your comments to be considered for the final rulemaking, you must again submit comments on this revised and expanded proposal.

EPA responses to comments, whether the comments are written or electronic, will be in a notice in the **Federal Register** or in a response to comments document placed in the official record for this rulemaking. EPA will not immediately reply to commenters electronically other than to seek clarification of electronic comments that may be garbled in transmission or during conversion to paper form.

Table of Contents

Acronyms Used in This Preamble

AEA—Atomic Energy Act of 1954, as amended
ALRA—As Low As Is Reasonably Achievable
ANPR—Advance Notice of Proposed Rulemaking
ARAR—Applicable or Relevant and Appropriate Requirements
BDAT—Best Demonstrated Available Technology
CBI—Confidential Business Information
CERCLA—Comprehensive Environmental Response, Compensation, and Liability Act
DOD—Department of Defense
DOE—Department of Energy
EEI—Edison Electric Institute
EPA—Environmental Protection Agency (referred to as ''we'' throughout this document)
FFCA—Federal Facilities Compliance Act
FUSRAP—Formerly Utilized Sites Remedial Action Program
GWRL—Groundwater risk levels
HSWA—Hazardous and Solid Waste Amendments of 1984
HWIR—Hazardous Waste Identification Rule
ICR—Information Collection Request
LDR—Land Disposal Restrictions
LLW—Low-Level Radioactive Waste
LLMW—Low-Level Mixed Waste
LLRWDF—Low-Level Radioactive Waste Disposal Facility
MMR—Military Munitions Rule
NAAG—National Association of Attorneys General
NARM—Naturally Occurring and/or Accelerator-produced Radioactive Material
NGA—National Governors' Association
NNPP—Naval Nuclear Propulsion Program
NRC—Nuclear Regulatory Commission
NTTAA—National Technology Transfer and Advancement Act
OMB—Office of Management and Budget
OSW—Office of Solid Waste
RCRA—Resource Conservation and Recovery Act
RFA—Regulatory Fairness Act
RIC—RCRA Information Center
RQ—Reportable Quantity
SARA—Superfund Amendments and Reauthorization Act
SBREFA—Small Business Regulation Enforcement Fairness Act
SQG—Small Quantity Generator
TC—Toxicity Characteristic
TRI—Toxics Release Inventory
TSDF—Treatment, Storage and Disposal Facility
UHC—Underlying Hazardous Constituent
UMRA—Unfunded Mandates Reform Act of 1995
UMTRCA—Uranium Mill Tailings Radiation Control Act
USWAG—Utility Solid Waste Activities Group
UTS—Universal Treatment Standards

Definition of Terms Used in the Preamble

Agreement State—means a state that has entered into an agreement with the NRC under subsection 274b of the Atomic Energy Act of 1954, as amended (68 Stat. 919), to assume responsibility for regulating within its borders source, special nuclear, or byproduct material

in quantities not sufficient to form a critical mass.

ANPR (Advance Notice of Proposed Rulemaking)—refers in this document to the advance notice published in the **Federal Register** on March 1, 1999 (64 FR 10063) on mixed waste storage.

Appropriately trained—means trained in a manner that ensures that low-level mixed waste is safely managed and includes training in chemical and radiological waste management.

Eligible NARM—for the purpose of this proposal, means NARM that meets the acceptance criteria of a LLRWDF licensed by NRC or an Agreement State in accordance with 10 CFR 61, and is also contaminated by a hazardous waste, and therefore, is eligible for the transportation and disposal conditional exemption.

Hazardous waste—means any material which is defined to be hazardous waste in accordance with 40 CFR 261.3, ''Definition of Hazardous Waste.''

Legacy waste—means waste that was generated by past activities and is in storage because appropriate treatment technologies have not been developed, or treatment and disposal capacity has not been available. It has been stored longer than RCRA regulatory time limits.

Low-Level Mixed Waste (LLMW)—means low-level radioactive waste containing a RCRA hazardous waste component.

Low-Level radioactive waste (LLW)—means radioactive waste containing source, special nuclear, or by-product material which is not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, byproduct material as defined in § 11(e)(2) of the Atomic Energy Act or NARM. (See also NRC definition of ''waste'' at 10 CFR 61.2)

Low-Level Radioactive Waste Disposal Facility (LLRWDF)—means a disposal facility licensed by the NRC or Agreement State for the disposal of low-level waste.

Mixed Waste—defined in RCRA as amended by the Federal Facility Compliance Act of 1992, means a waste that contains both RCRA hazardous waste and source, special nuclear, or by-product material subject to the Atomic Energy Act of 1954, as amended.

Mixed Waste Treatment Facility—means a waste treatment facility permitted by EPA or an Authorized State to treat hazardous waste and licensed by the NRC or Agreement State to manage radioactive waste.

Naturally Occurring and/or Accelerator-produced Radioactive Material (NARM)—means radioactive materials that are naturally occurring or produced by an accelerator. The naturally occurring radioactive material (NORM) is defined below. Currently NARM is not regulated by NRC or EPA. Rather it is regulated by the States under State law, or by DOE under DOE Orders.

Naturally Occurring Radioactive Material (NORM)—is a subset of NARM and refers to materials whose radioactivity has been enhanced (radionuclide concentrations are either increased or redistributed where they are more likely to cause human exposures) usually by mineral extraction or processing activities. Examples are exploration and production wastes from the oil and natural gas industry, and phosphate slag piles from the phosphate mining industry. This term is not used to describe or discuss the natural radioactivity of rocks and soils, or background radiation, but instead refers to materials whose radioactivity is technologically enhanced by controllable practices.

NRC or Agreement State license—means a license issued by the Nuclear Regulatory Commission or an Agreement State under authority granted by the AEA.

NUREG—refers to Nuclear Regulatory Commission publications and documents that include: formal staff reports, which cover a variety of regulatory, technical and administrative subjects; brochures, which include manuals, procedural guidance, directories and newsletters; conference proceedings and papers presented at a conference or workshop; and books, which serve a technical purpose or an industry-wide needs. Many of the NUREG documents are listed on the NRC Home Page (*http://www.nrc.gov*).

On-site—is defined in the RCRA regulations at 40 CFR 260.10, *et seq.*

RCRA program agency—means EPA, or the State agency authorized to implement the RCRA program.

Radioactive waste—is generally classified as source, special nuclear, or by-product material, and is exempt from the definition of solid waste at 42 U.S.C. 6903, 40 CFR 261.4(a)(4).

Tie-down conditions—include NRC guidance documents and policies concerning storage and treatment of LLW which become part of the NRC or Agreement State radioactive materials license by reference.

Who is Eligible for This Rule?

The conditional exemption proposed for low-level mixed waste (LLMW) storage and treatment applies to any mixed waste generator that has an NRC or Agreement State license to possess radioactive material or to operate a nuclear reactor, so long as the waste generator can satisfy the conditions set forth in this proposal.

The transportation and disposal exemption applies to generators of LLMW and eligible NARM so long as they meet all specified conditions. Facilities potentially affected by this action include those identified in Table 1.

TABLE 1.—FACILITIES POTENTIALLY AFFECTED BY THE PROPOSAL

Category	Examples of regulated facilities
Nuclear Utilities	Firms that generate electricity using nuclear fuel as the source of energy and have been licensed by the NRC
Universities and Academic Institutions.	Academic institutions at all levels that are licensed by NRC, or an Agreement State, to use radionuclides for academic, biomedical, and research purposes.
Medical Facilities	Hospitals, medical laboratories, doctors' offices, or clinics that are licensed by NRC or an Agreement State to use radionuclides for health care purposes
Industrial Establishments	Private companies and institutions, including pharmaceutical companies, and research and development institutions
Governmental Facilities	Facilities, installations and laboratories operated by State Agencies, and by Federal Agencies, including, but not limited to, DOE (including the Naval Nuclear Propulsion Program), the National Institutes of Health, the National Institute of Standards and Technology, and the Department of Defense.

The preceding table is not intended to be exhaustive, but rather provides examples of facilities likely to be affected by this proposal. To determine whether you are affected by this regulatory action, you should carefully

examine the applicability criteria in Parts V and VI of this preamble. If you have any questions regarding the applicability of this section to a particular entity, consult the persons listed under **FOR FURTHER INFORMATION CONTACT**.

I. Statutory Authority

The statutory basis for this rule is in Sections 2002(a), 3001, 3002, 3004, 3005, 3006, 3007, and 3013 of the Solid Waste Disposal Act of 1970, as amended by the Resource Conservation and Recovery Act of 1976 (RCRA) and the Hazardous and Solid Waste Amendments of 1984 (HSWA), 42 U.S.C. 6905, 6912(a), 6921, 6922, 6924, 6926, 6927 and 6934.

II. Summary of Today's Action

In today's notice we are proposing a conditional exemption for the storage, treatment, transportation, and disposal of low-level mixed waste (LLMW) pursuant to the Hazardous Waste Identification Rule (HWIR) consent decree (see II. B.) regarding potential regulatory flexibility related to hazardous waste disposal requirements and other relief as appropriate for commercial mixed waste. (See Ref. 1, Consent Decree and Ref. 2, Side-bar Letter.) As an NRC-licensed generator who meets certain conditions we specify, (a) your LLMW would be exempt from some RCRA Subtitle C storage and treatment regulations, and (b) your LLMW and eligible NARM (see definitions and discussion in VI. B. 1.), would be exempt from some RCRA Subtitle C manifesting, transportation, and disposal regulations. However, your LLMW and eligible NARM waste remain subject to RCRA land disposal restriction (LDR) treatment standards under the transportation and disposal exemption.

The ''Diagram of the Storage, Treatment and Disposal Exemptions Under the Proposal'' gives an overview of when waste would be conditionally exempt from certain RCRA hazardous waste management requirements. Briefly, LLMW generated and stored onsite in tanks or containers is exempted as long as the exemption conditions listed in § 266.230 are met. NRC or Agreement State-licensed generators may treat their LLMW on-site pursuant to the limitations imposed by § 266.235. Any generator may send LLMW and eligible NARM waste for disposal to a low-level radioactive waste disposal facility (LLRWDF) licensed by the NRC or an Agreement State, if all the conditions are met. Thus, certain LLMW and eligible NARM waste of NRC licensees may remain exempted from many RCRA requirements through much of the waste management process.

If your LLMW and eligible NARM is not treated to meet LDR treatment standards and is sent off-site for storage, treatment or disposal, your waste remains subject to all RCRA Subtitle C and NRC management requirements. LLMW treated off-site at mixed waste treatment facilities to meet LDR treatment standards may be eligible for the disposal exemption if all conditions for the transportation and disposal exemption are met.

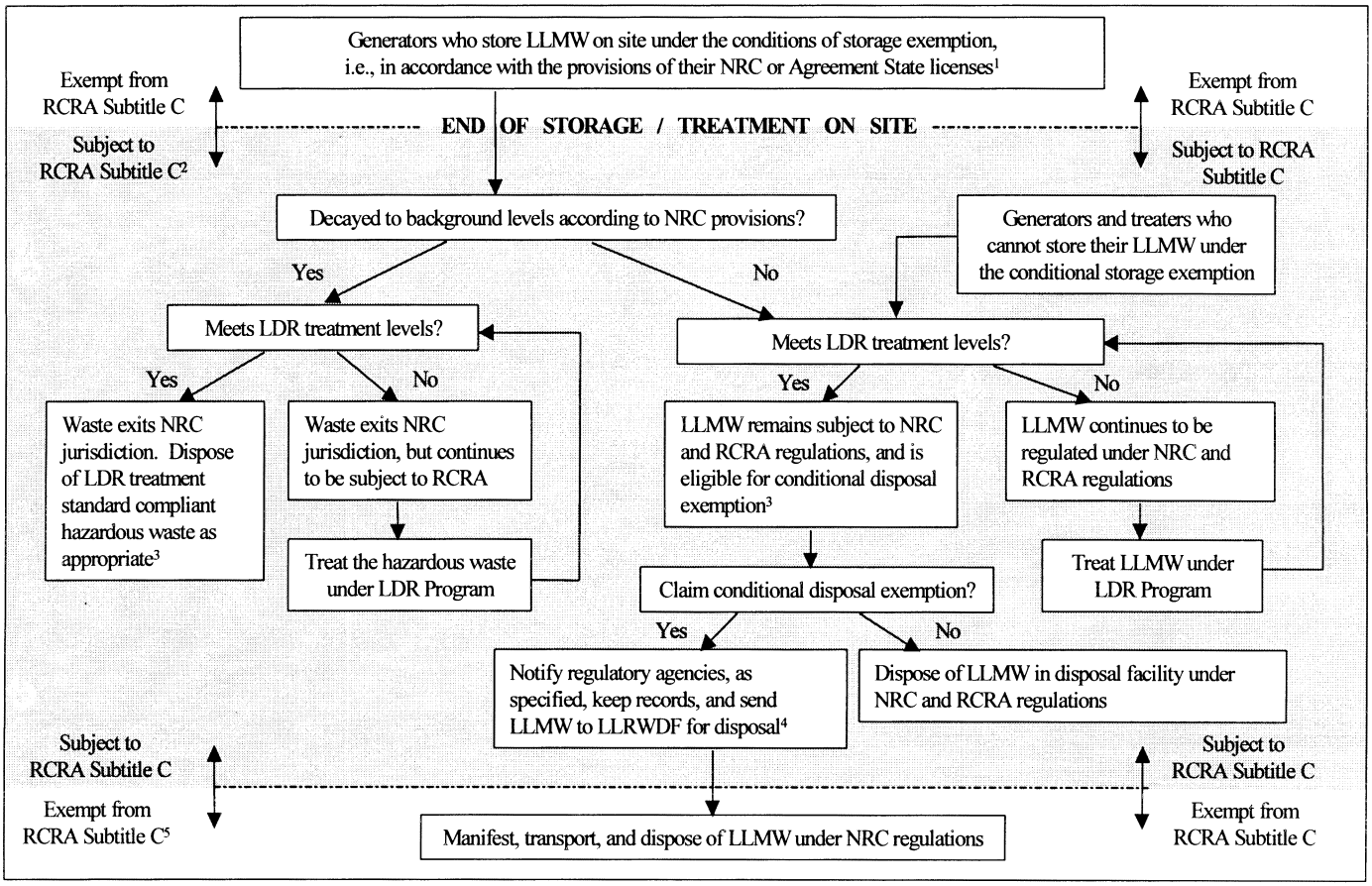
In order to claim a conditional exemption for storage or disposal you must notify the RCRA program agency that you meet the conditions. However, if information you provide on your notification is inaccurate, your claim for a conditional exemption is nullified and you will be subject to RCRA Subtitle C enforcement.

A. What Regulatory Changes are We Proposing for On-Site Storage and Treatment of LLMW?

Our proposal would allow generators of LLMW to claim a conditional exemption from the RCRA definition of hazardous waste for mixed wastes stored on-site (40 CFR 260.10). This conditional exemption acknowledges the protectiveness of storage of mixed waste subject to NRC regulations for low-level waste (LLW). During the storage of LLMW, our proposal would allow the conditionally exempt waste to be treated in tanks or containers to enable neutralization, solidification, or other stabilization of the hazardous portion of the waste. This regulatory flexibility would apply only to generators of low-level mixed waste who are licensed by NRC. Once your LLMW is removed from storage for further management, it is subject to hazardous waste management requirements unless it qualifies for a disposal exemption. In that case, you must show that it: meets the RCRA LDR treatment standards and NRC's LLW disposal requirements; and is destined for disposal at LLRWDFs licensed by NRC.

BILLING CODE 6560–50–P

Diagram of the Storage, Treatment, and Disposal Exemptions Under the Proposal



[1] All licensees (whether NRC or Agreement State) generating LLMW may be eligible for the storage exemption; however, as long as specified applicable conditions are met. Non-licensed entities (e.g., DOE) and commercial treatment, storage, and disposal facilities are not eligible for the storage exemption. They may be eligible for the disposal exemption. Diagram assumes licensees meet all conditions (and administrative requirements) for storing their LLMW under the conditional exemption for storage. LLMW under the storage exemption may be treated (e.g., stabilized), consistent with the generator's NRC or Agreement State license.

[2] Waste becomes subject to RCRA Subtitle C after storage ends (e.g., generator standards at 40 CFR Part 262), as indicated in this diagram.

[3] Ignitable, corrosive, and reactive hazardous wastes exit RCRA Subtitle C when LDR standards are met.

[4] LLMW disposal is restricted to low-level radioactive waste disposal facility (LLRWDF) licensed by the NRC or Agreement State.

[5] LLMW exits RCRA Subtitle C when it is en route to a LLRWDF for disposal.

BILLING CODE 6560–50–C

B. What Regulatory Changes Are We Proposing for Transportation and Disposal of LLMW and Eligible NARM?

We are proposing a conditional exemption from hazardous waste transportation, and disposal requirements for LLMW, and for eligible NARM. (See discussion in VI.B.1.) (Throughout this document when we refer to the conditional exemption for transportation and disposal of LLMW, we also mean eligible NARM.) The transportation and disposal exemption would not take effect until you fulfill all of the following conditions: (1) Treat your waste to meet the RCRA LDR treatment standards; (2) notify appropriate regulatory agencies of your exemption claim; (3) ship your waste according to NRC and DOT shipping requirements for transportation of LLW using an NRC Uniform LLW Manifest (Form 540, 541, and 542) for immediate disposal to a facility licensed by the NRC or an Agreement State; and (4) maintain appropriate records (including LDR records) for required time periods. Meeting all the prescribed conditions will allow your LLMW or NARM-contaminated hazardous waste to be exempt from the RCRA regulatory definition of hazardous waste.

Under this exemption, you may not send your conditionally-exempt LLMW or eligible NARM for disposal to a DOE radioactive waste disposal facility. Such action would make your waste subject to RCRA hazardous waste regulation, and potentially subject you to RCRA enforcement authority. Note that DOE LLMW which meets the conditions of the exemption for disposal may be shipped to an NRC-licensed disposal facility.

III. Why Are We Proposing a Storage, Treatment, Transportation, and Disposal Rulemaking?

Mixed waste is regulated under multiple authorities: RCRA (for the hazardous component), as implemented by EPA or Authorized States; and AEA (for the source, special nuclear, or byproduct material component), as implemented by the NRC or NRC or an Agreement State (for commercially-generated mixed wastes), or the Department of Energy (DOE) (for defense-related mixed waste generated by DOE activities. NARM-contaminated hazardous waste is also regulated under multiple authorities: RCRA (for the

hazardous component); and State law (for the NARM component), as implemented by a State agency designated by State law. We are proposing to make RCRA Subtitle C regulations more flexible so that generators of LLMW and eligible NARM are relieved of some dual regulatory requirements in managing their mixed wastes.

A. Need To Address Dual Regulation Concerns

Members of the regulated community have informed us that the combination of RCRA and NRC requirements for LLMW is burdensome, duplicative, and costly and does not provide more protection of human health and the environment than that achieved under one regulatory regime. We are responding to these concerns about the inefficiencies of dual regulation, as well as concerns about the radiation exposure of workers.

In addition, other mixed waste generators have expressed concerns about limited capacity of LLMW treatment and disposal. These concerns originated because RCRA § 3004(j) generally prohibits the storage of hazardous wastes that are also subject to RCRA land disposal restrictions unless the 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.'' Under EPA's regulation codifying RCRA § 3004(j) we presume that the initial year of hazardous waste storage is for the sole purpose of accumulating a quantity necessary to facilitate treatment and disposal. However, if you store LLMW on-site for more than one year, you have the burden of proving that the storage is for the allowed purpose.

Based on our information collection effort in the ANPR and information from mixed waste generators, we found that capacity for the treatment and disposal of certain LLMW is not always available (that is, LLMW containing certain radionuclides are not allowed to be disposed at the *only* LLMW disposal unit—licensed by the State of Utah, an NRC Agreement State). We also found that commercial mixed waste treatment facilities have not been willing to accept LLMW for treatment without viable disposal options. Since mixed waste disposal capacity is lacking, some generators of LLMW store the waste on-site. In addition, we found that the possibility of siting a new LLMW disposal facility is extremely low. Because of the very limited LLMW disposal capacity and the low probability of a disposal facility being built in the near future, we believe it is appropriate to provide safe and legal alternatives for the disposal of LLMW. We also believe that the availability of alternate disposal capacity would enable disposal of ''legacy'' wastes currently in on-site storage by generators of LLMW.

We have assessed NRC regulations for storage and disposal of LLW and compared them with EPA's regulations for hazardous waste storage, treatment, transportation, and disposal. Our review suggests that given the NRC's regulatory controls, human health and environmental protection from chemical risks would not be compromised if we deferred to NRC LLW management practices. Through this action, we are proposing regulatory relief intended to allow the disposal of certain LLMW (such as legacy waste requiring long-term storage due to lack of treatment and disposal capacity), that have, until now, been stored on-site by NRC licensees as mixed waste subject to both RCRA permitting and NRC licensing requirements.

A similar situation exists at DOE facilities. Available information suggests that currently DOE cannot treat some of its LLMW due to a lack of treatment capacity. DOE operations, therefore, must store their LLMW pursuant to a RCRA storage permit. However, DOE is also subject to state compliance orders and other requirements for treatment of its mixed waste as a result of the Federal Facility Compliance Act of 1992 (FFCA, P.L. 102–386, October 6, 1992). This rulemaking effort may result in removal of some DOE ''legacy'' waste from storage if DOE: increases its own mixed waste treatment capacity or uses commercial mixed waste treatment capacity to meet land disposal treatment standards; and disposes of LLMW treated to LDR treatment standards in a LLRWDF licensed by NRC by meeting the conditions specified to qualify for an exemption from disposal of LLMW as a RCRA hazardous waste.

We seek comment on the ways we propose to address the issue of dual regulation of LLMW storage, treatment, transportation, and disposal.

B. Need To Respond to HWIR Consent Decree

The Edison Electric Institute (EEI), the Utility Solid Waste Activities Group (USWAG), and the Nuclear Energy Institute (NEI)—trade groups representing commercial nuclear power plants—were parties to settlement discussions regarding the deadline for the final Hazardous Waste Identification Rulemaking, *ETC* v. *Browner*, C.A. No. 94–2119 (TFH) (D.D.C.). On April 11, 1997, the court entered a consent decree which requires EPA to propose revisions to the mixture and derived-from rules, 40 CFR 261.3(a)(2)(iv) and (c)(2)(I) and to seek comment on eleven items listed in the decree with respect to those revisions. One of the eleven items concerns an exemption from RCRA hazardous waste disposal regulations for nuclear power plant low-level mixed waste. The proposal must also request comment on other regulatory relief for these wastes, if EPA finds that any other relief would be appropriate. (See ANPR for further information.)

Today's notice requests comment on EPA's proposal to provide regulatory relief to LLMW generators and other regulatory relief as described in this document. In a separate notice (see Docket # F–99–WH2P–FFFFF), EPA is proposing revisions to the mixture and derived-from rules and requesting comment on the other ten items set forth in the consent decree. Those proposed revisions include an exemption for mixed waste that is managed in compliance with the requirements in part 266, subpart N proposed here today.

C. Need To Respond to a Rulemaking Petition From USWAG and Concerns of Other Mixed Waste Generators Regarding Capacity

The Utility Solid Waste Activities Group (USWAG), a national organization of power companies, petitioned the U.S. EPA on January 13, 1992 to request an amendment to RCRA Subtitle C regulations governing storage of mixed wastes. The USWAG organization cited difficulties in complying with RCRA Subtitle C regulations because of limited treatment technology and disposal capacity for some mixed wastes. (See discussion in ANPR for additional information.) We regard today's action as a response to the USWAG petition.

Policy of Lower Enforcement Priority for Mixed Waste

Recognizing this capacity difficulty, we issued a policy on the lower priority of enforcement of the storage prohibition contained in § 3004(j) of RCRA. (See 56 FR 42730; August 29, 1991) § 3004(j) prohibits storage of a land disposal restricted waste (including mixed waste), except for the purposes of the accumulation of such quantities of hazardous waste necessary to facilitate proper recovery, treatment, or disposal. Because treatment technology or disposal capacity was still unavailable for some mixed wastes, we extended this policy on October 31,

1998. The lack of adequate treatment technology or disposal capacity for some mixed waste streams necessitated storage in violation of land disposal restrictions for storage of mixed waste. The policy stated that violators who: were faced with the impossibility of complying with the RCRA regulations; had a RCRA storage permit; and were storing their wastes in an environmentally responsible manner would be a low enforcement priority for EPA. The extension of the policy expires October 31, 2001. (See 63 FR 59989; November 6, 1998.) This proposed rulemaking is expected to replace the current enforcement policy.

IV. Precedent for Regulatory Flexibility in This Proposal

We are proposing regulatory flexibility modeled on the conditional exemption developed for waste military munitions in the Military Munitions Rule (40 CFR part 266, Subpart M) published February 12, 1997 (62 FR 6622–6657).

A. How Does the Conditional Exemption in the Military Munitions Rule Work?

The Military Munitions Rule (MMR) identifies when conventional and chemical military munitions become a hazardous waste subject to RCRA Subtitle C. In the MMR, EPA developed a conditional exemption to provide regulatory flexibility to storers and transporters of non-chemical waste military munitions. Under the conditional exemption, non-chemical waste military munitions that normally meet the definition of ''hazardous waste'' are not regulated under RCRA Subtitle C as a hazardous waste so long as the facilities storing or transporting munitions meet all of the conditions for storing and transporting non-chemical waste munitions listed in the rule. (For the complete text of the Military Munitions Rule, see 62 FR 6621, February 12, 1997.)

The Court of Appeals upheld all aspects of the MMR in *Military Toxics Project* v. *EPA*, 146 F. 3rd 948 (D.C. Cir. 1998). The court agreed that ''Congress has not spoken directly to the issue of conditional exemption,'' and upheld as reasonable EPA's interpretation that § 3001(a), which requires the Administrator to promulgate criteria for identifying and listing wastes that should be subject to Subtitle C requirements, allows the use of conditional exemptions. (Ibid.) The court also agreed with EPA that ''where a waste might pose a hazard only under limited management scenarios, and other regulatory programs already address such scenarios, EPA is not required to classify a waste as hazardous waste subject to regulation under Subtitle C.'' (Ibid. at 958.)

B. What Is Our Rationale for Today's Proposed Conditional Exemption?

In the MMR, EPA conditionally exempted stored waste military munitions and transported from one military owned or operated facility to another. However, waste military munitions treatment, and disposal remain subject to RCRA Subtitle C. We take a comparable approach for generators of LLMW in this proposed rulemaking in that we propose to provide a conditional exemption for the storage, treatment, transportation, and disposal of LLMW that is also subject to NRC or Agreement State regulation. We base this proposal on the NRC or the NRC Agreement State licensing process and regulatory requirements, and their adequacy in addressing risks from radioactivity and RCRA hazardous constituents. By promulgating a conditional exemption, we can eliminate redundant or dual requirements where wastes are managed safely and mismanagement is unlikely; the NRC-required safeguards are in place (for example, inspection, monitoring, record keeping, reporting); and penalties or other consequences may be imposed if the governing regulatory framework is not followed.

In proposing a conditional exemption from RCRA Subtitle C regulation for storage/treatment of NRC-licensee generated LLMW, we evaluated certain key factors. First, we reviewed the licensing requirements and NRC standards for the storage and treatment of LLW to determine whether NRC regulation of stored low-level waste (LLW) adequately protects against possible risks from RCRA hazardous constituents in mixed waste. Although NRC regulation and oversight are designed primarily for radiation risks, the NRC, the regulated industry, and others have argued that these standards largely duplicate RCRA requirements and thus, protect against chemical risks to human health and the environment. Second, we compared NRC low-level waste and EPA hazardous waste storage and treatment requirements. (See Ref. 4, EPA's comparison of storage and treatment requirements, for details.) Our analysis was done independently of similar studies performed by USWAG, the Electric Power Research Institute, and the Nuclear Management and Resources Council, Inc. (who represent members of the power generation industry) regarding applicable NRC standards. (See Ref. 6 and 16 for the industry studies.) These other studies concluded that the technical design and operating standards of the NRC meet or exceed RCRA standards in virtually all respects, though there were differences noted in emphasis (performance based rather than proscriptive requirements) and implementation of NRC licensing requirements. Third, we reviewed the compliance history of licensed facilities. We looked at the documentation of incidents involving the storage and on-site treatment of radioactive wastes by LLMW generators who are NRC licensed users of radionuclides. Our review of documented information suggests that NRC licensed facilities almost universally have good low-level waste management safety records. (See Ref. 3, EPA's compliance record review.) Based on our evaluation of these factors, we concluded that low-level mixed wastes stored and treated at these facilities are not likely to be mismanaged, and that regulation under RCRA Subtitle C does not increase protection to human health and the environment for these wastes during on-site storage and treatment.

In addition to storage and treatment requirements, we reviewed NRC requirements and the practices of low-level waste disposal facilities to determine if they provide human health and environmental protection similar to that achieved upon the disposal of low-level mixed waste at RCRA Subtitle C disposal facilities. (Ref. 7, Technical assessment of LLRWDFs) Our review suggests that NRC regulations for disposal facilities provide adequate protection so long as the hazardous constituents are treated to LDR treatment standards prior to disposal. Therefore, compliance with LDR treatment standards is required to obtain the conditional exemption for disposal of LLMW or eligible NARM. Disposal facilities licensed by the NRC will be accepting for disposal conditionally-exempt LLMW as a low-level waste. We believe that LLMW or eligible NARM disposed at these facilities are not likely to be mismanaged and, therefore, RCRA Subtitle C regulation is not necessary to protect human health and the environment.

V. Low-Level Mixed Waste Storage and Treatment

We are proposing a conditional exemption from RCRA Subtitle C requirements to provide regulatory flexibility related to storage and treatment for (1) the on-site storage of low-level mixed waste if specified conditions are met; and (2) the on-site treatment of low-level mixed waste in qualified tanks or containers (40 CFR 262.34). This regulatory flexibility applies to any generator of LLMW who

is an NRC licensee licensed to manage radioactive materials.

A. What Conditional Exemption for Stored or Treated Low-Level Mixed Waste Are We Proposing?

We are proposing in today's action to conditionally exempt LLMW from the regulatory definition of hazardous waste, found in § 261.3, while the waste is stored and/or treated on-site. The conditional exemption is available only to NRC licensees who generate LLMW. Generators must notify EPA of the storage units for which they are claiming an exemption and meet other conditions listed below. During storage or treatment of conditionally exempted LLMW, the generator will not be required to have a RCRA storage permit for the conditionally exempt waste. The conditional exemption proposed today applies only to LLMW and does not affect other RCRA wastes a licensee may generate. A RCRA permit may be required for management of those other wastes depending on the circumstances. This proposal also describes which wastes are eligible for the conditional exemption (§ 266.225), what a generator must do to qualify for the exemption if specified conditions are met (§ 266.230), and how the exemption will be implemented (§ 266.240 and following).

Under our proposal if you fail to meet any of the conditions, your LLMW is no longer exempted from the definition of hazardous waste. As a hazardous waste, your LLMW would be subject to RCRA Subtitle C regulation. Also, if a release or other incident of waste spill occurs while the waste is being stored, your waste may be subject to regulation as a hazardous waste. For example, you may be subject to the provisions of RCRA § 7003 which specify that in any situation where an imminent and substantial endangerment to health or the environment is caused by the handling of solid or hazardous wastes EPA can order any person contributing to the problem to take steps to clean it up. Violation of RCRA § 7003 orders can result in significant penalties.

1. How Does the Proposal Facilitate Decay-in-Storage?

NRC generally allows research, medical, and other facilities to store low-level wastes containing radionuclides with half-lives of less than 65 days (or more under an amended license) until 10 half-lives have elapsed and the radiation emitted from the unshielded surface of the waste (as measured with an appropriate survey instrument) is indistinguishable from background levels. This process is known as decay-in-storage. Our proposal facilitates decay-in-storage by supporting NRC license provisions related to short-lived radionuclides, and NRC requirements to limit worker exposures to meet ALARA (as low as reasonably achievable). Once the specified radionuclide decay has occurred, the waste may then be disposed of as non-radioactive waste after ensuring that all radioactive material labels are rendered unrecognizable (see 10 CFR 35.92 and 10 CFR 20.2001).

The time frame for LLW decay-in-storage is based on the radionuclides (and half-lives) specified in a low-level waste generator's NRC license. Such management of LLW significantly reduces worker exposures to radionuclides since containerized wastes are not shipped for treatment and disposal while the short-lived radionuclides are held in storage on-site for the purpose of radioactive decay. This outcome is consistent with the proposed RCRA conditional exemption.

Several universities and medical facilities have indicated to us that a conditional exemption during the decay-in-storage time period would be a way of reducing risk, exposures, and regulatory inefficiency in the management of their LLMW. Commenters on the ANPR confirmed this information. We are proposing that the management of LLMW during on-site storage be regulated under NRC's decay-in-storage requirements.

We anticipate that the requirements will provide regulatory flexibility to academic, medical, research, and other facilities by reducing overlapping RCRA and AEA requirements. For LLMW containing short-lived radionuclides, today's proposed conditional exemption would be temporary because it would be in effect only until the radioactive component of the mixed waste has decayed to a point that it is no longer subject to NRC license requirements. After the decay-in-storage process is completed, the waste becomes subject to RCRA Subtitle C requirements. We would appreciate comments regarding the standard to use for determining when the decayed waste would reenter RCRA Subtitle C management.

2. For What Time Period is a Storage Exemption Valid?

We are proposing that an exemption will be valid as long as the mixed waste: (1) Remains on-site and (2) is subject to NRC regulation. We are considering whether a general storage exemption time limit should be imposed. A time limit may affect both facilities with untreatable legacy wastes and future treatment and disposal capacity. We invite comment on whether a time limit may be appropriate, and, if so, on what basis that time limit might be established.

Under a decay-in-storage scenario, LLMW is no longer subject to NRC regulations when the radioactive portion of the waste can be disposed of as non-radioactive material in accordance with the generator's NRC license. At that point the mixed waste would not be conditionally exempt from RCRA Subtitle C. If the decayed waste still exhibits a RCRA hazardous waste characteristic or is a listed hazardous waste, then it must be shipped promptly off-site for treatment to meet LDR treatment standards, if needed, and disposed at a RCRA Subtitle C facility. Thus, the RCRA storage limit for a formerly mixed, now solely hazardous, waste prior to shipment off-site for treatment and/or disposal begins when: (1) The radionuclide with the longest half-life in a container has decayed as specified in the license (generally ten half-lives but sometimes fewer half-lives); and (2) the radiation emitted from the unshielded surface of the waste is not above background levels as measured by appropriate monitoring equipment as specified by NRC.

Some radionuclides take longer than 10 half-lives to decay to levels that are indistinguishable from background. If we limited the time for decay to either ten half-lives or when the waste no longer registers above background levels, then some portion of LLMW that is being stored may still emit radiation levels above background. To minimize radiation exposures we have used ''and'' in the paragraph above to ensure that the LLMW does not emit radiation that is above background levels as measured by appropriate monitoring equipment. [1] We invite comment on how waste being stored for decay under 10 CFR 20.2001(a)(2) and 10 CFR part 35 can be completely decayed while at the same time reenter RCRA Subtitle C without a gap in time during which the waste is not regulated as either hazardous or radioactive. Please indicate in your comment what mixed wastes you generate that have radionuclides with activity levels which would not qualify for the conditional exemption we are proposing if it were based on whichever occurred first—ten half-lives of decay or not registering above background levels.

[1] Note: The NRC licensee is not required to immediately monitor the waste after decay of 10 half-lives. Prior to monitoring there may be an interval when the waste is hazardous only. However, the lower cost of diposing of hazardous rather than LLMW should serve to encourage prompt monitoring and disposal.

Also indicate how this limitation would affect your management of the waste.

3. What Are Your On-Site Treatment Options?

We are proposing to allow the on-site treatment of LLMW during a storage exemption from hazardous waste regulation under the conditions listed above for the storage conditional exemption. In addition, the mixed waste must be: (a) treated on-site; and (b) physically or chemically treated in a tank or container in accordance with the generator's NRC license requirements. If these conditions are met, then a RCRA treatment permit during storage will not be required.

RCRA allows accumulation and treatment of hazardous waste in a tank or container within 90–270 days of generation of the waste without a permit provided generators comply with the standards for storage tanks and containers. An NRC license may allow solidification, neutralization, or other stabilization of LLW in the tank or container. If the waste also includes RCRA characteristic or listed hazardous material, then a RCRA permit is normally required if the waste is not treated within 40 CFR part 262 accumulation time limits. In this proposal, we are not requiring a RCRA treatment permit from a generator if the on-site treatment is allowed for LLW under the facility's NRC license. Such treatment may, for example, allow cement to be added to a legacy waste (see definitions at the beginning of this proposal) stored in a container such that it will then be able to meet LDR requirements. Or a mixed waste may be treated chemically to neutralize its corrosivity so that it may be safely stored in a tank or container.

EPA's regulations governing on-site storage and treatment in tanks and containers are generally the same as NRC's. Without the proposed conditional exemption, treatment of legacy waste would require a generator to obtain a permit to address an expired RCRA Part 262 accumulation time limit. We are proposing to allow the types of treatment included in NRC licenses to manage the radioactive material in the waste. We believe that additional RCRA requirements would not increase protection of human health and the environment. Nevertheless, more specific controls are appropriate for some forms of treatment, such as thermal treatment (as defined in 40 CFR 260.10) or incineration, because of the complexity of the treatment and the specificity of RCRA requirements. (Thermal treatment is not now allowed under RCRA without a permit even if done within 90 days of generation.) For that reason, under the conditional exemption for on-site storage of LLMW, we are not including on-site thermal treatment of LLMW by generators without an appropriate RCRA permit.

B. What is Our Low-Level Mixed Waste Storage and Treatment Proposal?

We describe our proposal in the following sections which cover what generators and wastes are eligible, what conditions must be met, and how an exemption is claimed.

3. Which Generators and Wastes Will be Eligible for the Storage and Treatment Exemption?

Generators of LLMW regulated by the NRC will be eligible for the proposed storage exemption. The types of facilities that may be affected include nuclear power plants, fuel cycle facilities, pharmaceutical companies, medical and research laboratories, universities and academic institutions, hospitals, and some industrial facilities. We describe eligible wastes in § 266.225 of this proposal.

4. What Conditions Must You Meet as a Generator?

Conditions in § 266.230 which you, as a generator, must meet to qualify for the exemption include the following:

(a) You must have a valid NRC license. Our proposed exemption is predicated on our finding that NRC oversight provides the regulatory control necessary to ensure that the hazardous portion of an exempted waste will not be mismanaged. It is the NRC license, issued and enforced by an independent government agency, that is the basis of the proposed exemption.

(b) You must comply with the requirements of your NRC license for storing low-level mixed waste. We believe that adherence to NRC licensing conditions is important to the safe storage of the hazardous portion of the LLMW stream. As a result of comments we received on the ANPR, we are now requesting comment on whether we should increase the specificity of this condition by limiting it to the kinds of NRC requirements that if violated may result in endangerment of human health or the environment. For example, we could include violation of those terms and conditions that result in filing a report under 10 CFR Subpart M, Section 20.2201–2203. We seek comment on whether this condition should be: broad (and include the loss of the exemption if any LLW storage requirement of the NRC license is not met); or more specific (and limit the loss of the exemption to those violations which may result in an environmental impact).

(c) You must comply with § 266.225 which requires that the eligible waste be subject to regulation by the NRC. The proposal also requires that the waste be generated ''on-site'' at the facility seeking the exemption. (See 40 CFR 260.10 f.) For the purposes of this conditional exemption, we consider your mixed waste to be on-site if you can move your waste without a RCRA manifest from a storage unit at the point of generation to another storage/accumulation area which you own or operate (with the same RCRA ID number). For example, a LLMW generator may transfer waste from one location to another storage location so long as both the locations are owned by the same entity such as a university, or pharmaceutical firm, and are operated under the same RCRA ID number or same NRC license. Thus, under our proposal, commercial mixed waste processing facilities will not be eligible for this exemption for wastes received from their customers. Finally, the proposal requires that the waste be compatibly stored in tanks, or containers. We do not believe other storage units (for example, surface impoundment units) are appropriate storage devices under this proposal. Commenters on the ANPR suggested we extend the conditional exemption to wastes stored ''off-site.'' We request comment regarding both the definition of ''on-site'' and the appropriateness of extending a conditional exemption to facilities that own/operate storage units that do not meet our current definition of ''on-site.'' This conditional exemption applies only to stored waste which is generated and owned by the same facility. We also seek comment on whether the conditional exemption should include a storage facility which serves as a consolidation point for a single entity. For example, a university storage facility that serves several noncontiguous laboratories on a campus which have the same NRC license, or which have the same RCRA hazardous waste generator identification number.

(d) You must notify us (the EPA Region or the RCRA Subtitle C Authorized State Agency) by certified mail, return receipt requested, that you claim the exemption for a storage unit containing low-level mixed waste. Your notification must be signed by the owner, operator, or other appropriate official of your facility. Notification of your claim should be made either within 90 days of the effective date of this rule in your State or within 90 days of when a storage unit is first used to store low-level mixed waste for which

you claim a conditional exemption. This requirement provides us with a record of who has made a claim for the exemption. Your notification is self-implementing. You will not receive a notice of approval from EPA or your State Agency.

(e) You must certify that facility personnel who manage stored LLMW are appropriately trained. Personnel managing the hazardous portion of the waste should be trained in identifying and providing initial response to a release of chemical constituents as well as in radioactive waste management. As part of the notification process, you must certify that personnel managing the hazardous portion of stored LLMW are appropriately trained. We are proposing that the basic personnel training requirements found at 40 CFR 265.16(a)(3) satisfy the training condition for chemical waste management.

(f) You must: inventory the LLMW at least annually; inspect the mixed waste at least quarterly for compliance with the conditions of this section; update your records of conditionally exempt LLMW at least quarterly; and keep records of the findings of these inventories and inspections. You must maintain records for three years after the waste is sent for disposal or in accordance with NRC requirements whichever is longer. An important part of assuring that you comply with the conditions proposed in today's rule is our requirement that you perform regular inspections of the facilities storing exempted waste, as well as inventory the waste to prevent loss or other mismanagement. Records of these activities must be kept long enough to assure us of consistent compliance with exemption conditions.

(g) You must maintain an accurate emergency contingency plan which you develop and provide to all local authorities who may have to respond to an emergency. Your contingency plan must describe emergency response arrangements with local authorities, describe evacuation plans, list the names, addresses and telephone numbers of all facility personnel qualified to work with local authorities as emergency coordinators, and list emergency equipment. (The majority of mixed waste generators have a plan that describes many of these emergency response arrangements, see 40 CFR part 265, subpart D.)

We propose these conditions as the minimum necessary to ensure that LLMW is properly managed, so as to avoid potential adverse impact on human health or the environment. We believe that these conditions will provide a strong incentive to properly manage the waste, and that the regulatory framework imposed by the NRC makes mismanagement of these wastes unlikely. Because of the importance of the conditions, we propose that if you (as a generator) fail to meet any one of them, then your waste will no longer be conditionally exempt and will be subject to full RCRA Subtitle C regulation.

The exemption does not replace the permitting requirements currently required for treatment, storage, and disposal facilities (TSDFs) who manage other generator's wastes and who typically manage much larger volumes of waste. By limiting the exemption to generators, we believe that the likelihood of significant human health or environmental consequences of mismanagement will be minimal due to the amount of waste generated at these sites. Nevertheless, we request comment on whether we should include in the conditional exemption for storage those mixed waste treatment facilities that manage wastes from other generators. Comments received on the ANPR generally did not agree with including such a TSDF in the entities eligible for a conditional exemption for storage of LLMW. (See docket for summary of ANPR comments.) We are interested in additional information regarding the safety of commercial TSDFs that could provide a basis for expanding the scope of the exemption to include off-site storage at commercial TSDFs.

3. Whom Should You Notify if You Want to Claim an Exemption?

To claim a conditional exemption for stored low-level mixed waste you, as the generator, must certify that the facility and waste meet all the proposed conditions in § 266.230 and must notify us (EPA or the Authorized State Agency) of each storage unit where waste will be stored for which you claim a conditional exemption. Such notification will enable us to know which wastes and which storage units are conditionally exempt. We propose that you, the owner or operator of a facility generating low-level mixed waste, notify us in writing either within 90 days of the effective date of the final rule in your State, or within 90 days of when a storage unit is first used to store LLMW for which you claim a conditional exemption. (See the list of conditions a generator must meet to qualify for a conditional exemption for stored LLMW.) This notification is self-implementing, although we may use our inspection and information collection authorities to verify whether you are meeting the conditions.

You must report in writing to us (or a RCRA Authorized State Agency), with a copy to NRC, any failure to meet a condition within 30 days of learning of the failure. If the failure to meet the conditions has the potential for endangering human health or the environment then you, the generator, must notify us orally within 24 hours and take steps outlined in your emergency contingency plan. This requirement is to ensure the timely notification and response of emergency personnel. An oral or written report regarding failure to meet the conditions does not relieve you, the generator/licensee, of NRC requirements. You must also notify the NRC if the failure triggers notification requirements under NRC regulations for the radioactive material.

4. What Records Must You Keep for the Exemption?

You must keep records of your initial notification, as well as your LLMW inventories and inspections. Records must be kept for three years after the stored waste is sent for treatment or disposal, or in accordance with NRC requirements, whichever is longer. You must update your records regularly. At a minimum, you must inventory the waste annually, inspect the waste quarterly, and update records of conditionally exempt LLMW quarterly. An important part of assuring that a generator is complying with the conditions proposed in today's rule is requiring the generator to perform regular inspections of the units storing exempted waste, as well as inventorying the waste to prevent loss or other mismanagement. Records of these activities must be kept to assure us of consistent compliance with exemption conditions.

5. How Can Your Stored Waste Lose the Exemption?

Your stored waste will lose a conditional exemption if, after claiming a conditional exemption, you subsequently fail to meet one or more of the conditions. If your stored waste no longer meets one or more of the exemption conditions, your mixed waste may be fully regulated under RCRA Subtitle C as a hazardous waste as described in § 266.235. (This consequence and its ramifications for mixed waste management are discussed under the notification, and implementation and enforcement sections of the proposed rulemaking.)

6. Can Your Exemption be Reclaimed if You Fail to Meet a Condition?

This proposed conditional exemption rulemaking envisions a self-implementing process. The exemption is lost at the time of non-compliance. EPA needs to take no action to remove the exemption. However, if your waste loses the conditional exemption, you may reclaim your exemption if you return to compliance with all conditions in § 266.230. You must send the RCRA program agency a written notice that you are reclaiming your exemption. Your notice must do the following:

- Explain the circumstances of the failure which caused your waste to lose the exemption;
- Certify that your waste is in compliance with all conditions as of the date you reclaim the exemption;
- Demonstrate that the failure is not likely to recur because of specific steps (list them) you have implemented in your LLMW-related compliance activities; and
- Include any additional information you would like us to consider regarding your reclaim notice.

If subsequently we find that a reclaimed conditional exemption is inappropriate because it is not protective of human health or the environment, then we may terminate the conditional exemption which was reclaimed.

C. How Will Implementation and Enforcement of the Conditional Exemption for Storage and Treatment of LLMW Take Place?

1. Is This a Self-Implementing Rule?

Yes, a conditional exemption is in effect as of the date of the claim, and is lost automatically when the generator fails to comply with the conditions.

2. How Will We Enforce the Proposed Storage Exemption?

We will consider non-compliant facilities to be subject to RCRA Subtitle C from the time of noncompliance. Utilities or other LLMW generators that claim the conditional exemption, but fail to store and/or treat the LLMW in compliance with the provisions of the exemption, would no longer be exempt from the applicable provisions of RCRA. Moreover, imminent and substantial endangerment provisions under § 7003 of RCRA will continue to apply to conditionally exempt mixed waste as a safeguard in the unlikely event of a release which could pose a health or environmental threat.

We are proposing the storage exemption because of the regulatory framework in place governing low-level radioactive component of LLMW. The NRC has a ''General Statement of Policy and Procedure for NRC Enforcement Actions'' (NUREG–1600) which states the NRC's policy regarding enforcement. This policy provides significant consequences for violating NRC or license requirements and takes into consideration the specific circumstances of a particular case. For example, if a nuclear power plant is found to have violated the NRC license, or tie-down conditions of the license (see definition at the beginning of this preamble), the nuclear power plant (and the responsible person) may be subject to substantial civil and criminal penalties. Based on these provisions, licensed facilities have incentives to properly manage stored waste.

D. What Background Information Did we Use for This Proposal?

To determine the protectiveness of NRC management requirements for LLMW, we researched the LLW storage provisions of NRC and material licenses, reviewed NRC compliance data on violations related to storage of LLW, and compared the regulatory framework of EPA and NRC related to waste management. Overall our comparison studies found that safeguards were in place which would ensure the protection of human health and the environment during storage of LLW and LLMW.

Review of NRC License Requirements

We researched NRC's regulatory and licensing framework under which low-level waste (LLW), and therefore LLMW, is stored by waste generators. We examined provisions concerning the on-site storage of LLW to assess whether these requirements are protective of human health and the environment with respect to potential releases of hazardous waste constituents. We found that NRC and Agreement States regulate licensees through the issuance of performance-based regulations, regulatory guides, generic communications (Generic Letters and Information Notices), and NUREGs. NRC uses these tools to guide licensees on how to meet the intent of the regulations. These documents work together to enable the NRC and Agreement States to ensure that nuclear power facilities and other licensees are operating in a safe manner. For example, on November 10, 1981 NRC issued Generic Letter 81–38, ''Storage of Low-Level Radioactive Wastes at Power Reactor Sites,'' and enclosure, ''Radiological Safety Guidance for Onsite Contingency Storage Capacity.'' In this generic letter, NRC discussed its position on proposed increases in storage capacity for low-level wastes generated by normal reactor operation and maintenance and stated that the safety of the proposed increase in capacity must be evaluated by the licensee under the provisions of 10 CFR 50.59. The NRC also attached a radiological safety guide to this letter. This guide was developed for the design and operation of interim contingency low-level waste storage facilities, and stated that necessary design features and administrative controls would be dictated by such factors as the waste form, concentrations of radioactive material in individual waste containers, a total amount of radioactivity to be stored, and retrievability of waste. NRC also noted that this guidance document should be used in the design, construction and operation of storage facilities and that the NRC would judge the adequacy of 10 CFR Part 50.59 evaluations based on compliance with the guidance. (NRC also referenced IE Circular No. 80–19, dated August 22, 1980, as providing information on preparing 50.59 evaluations for changes to radioactive waste treatment systems).

Though NRC regulations found in the Code of Federal Regulations concerning the generation, storage, and treatment of LLW are performance-based (for example, no releases/leaks), rather than prescriptive as in RCRA (where types of drums and waste management are specified to prevent leaks), the NRC-enforceable tie-down conditions found in individual licenses based on our review provide adequate protection to human health and the environment from exposure to hazardous wastes during storage as well as RCRA regulatory requirements. A compilation of the NRC documents that we reviewed can be found in the docket for today's proposal. (See Ref. 3, EPA's compliance history review.) A discussion of our evaluation of NRC's licensing framework and how it provides protection of human health and the environment when compared with the RCRA regulations is discussed in a later paragraph.

Research on Compliance Records of NRC and Agreement State Licensees

In addition to comparing NRC's and our storage requirements, we researched compliance records related to NRC radiation controls for nuclear power plants and other licensees, to determine if there were storage-related releases or mismanagement of LLW. To provide a baseline for the comparison of NRC LLW violations, we queried two of EPA's generator information management systems—the Biennial

Reporting System (BRS) and the Resource Conservation and Recovery Information System (RCRIS)—to obtain the number of RCRA violations.

Using BRS data for 1995, 18,497 facilities were identified as having generated hazardous waste (including small quantity generators). These ''records'' were merged with the information from RCRIS and then sorted by RCRIS violation area codes. The violations were sorted by group (generator, other, treatment, and transporter) and by state. Based on this process, we identified a total of 4,547 violations by a total of 1,352 facilities (or 7.3% of the 18,497 facilities). Of the 4,547 violations, 3,355 resulted from the noncompliance with the generator requirements (manifesting, record keeping, time-in-storage, reporting, etc.), and of the 3,355 generator violations, 142 involved mixed waste.

To review the NRC facility compliance records, we reviewed a number of enforcement reports for both NRC enforced and Agreement State enforced licensing programs. We did not review every licensee's record. However, enough data were reviewed to demonstrate that the number of violations reported (on a percentage basis) by NRC for both nuclear power reactors (directly licensed by NRC) and material licensees (generally licensed by Agreement States) compares favorably with the percentage of violations reported by EPA. Fines, penalties, and other consequences serve to deter violations. Based upon the compliance data, the industries' record is good and mismanagement of stored mixed waste is unlikely. We conclude that regulation under Subtitle C is unlikely to significantly improve that record.

For further information on applicable NRC regulations refer to 10 CFR part 20 subpart I. Information regarding NRC's regulations, or guidance documents may be obtained by either contacting the NRC Public Document Room, at 2120 L Street, NW, Lower Level, Washington, D.C. 20037 (202–634–3273 or 800–397–4209, Monday through Friday, 8:30 a.m. to 4:15 p.m.) or by visiting NRC's Internet web page at *http://www.nrc.gov*.

Comparison of Regulatory and Management Requirements of EPA & NRC

We compared NRC documents used in license preparation with the permitting framework established under RCRA. The technical design and operating standards of the NRC licensing program meet or exceed RCRA standards in virtually all respects, though there were differences in certain procedural requirements and in areas unrelated to actual discharge of hazardous waste from storage (e.g., unit closure requirements). Based on our review, we do not believe these differences undermine protection of human health and the environment, or that the superimposition of RCRA specific standards significantly increases protection. (See Ref. 4, EPA's comparison of EPA and NRC storage requirements). Relevant NRC licensing criteria are in the docket for today's rulemaking, and may also be obtained by contacting the NRC public document room at 202–634–3273 or accessing the NRC web site (http://www.nrc.gov). These criteria, while designed primarily to minimize radiation risk, also address risk posed by byproduct material in general, including hazardous constituents. Because of the unique nature of mixed wastes, migration of hazardous constituents does not occur except in the presence of radionuclides. Therefore, activities performed by a licensee to safely store or address the release of the radioactive portion of the mixed waste will also result in the safe storage of the chemical components of the LLMW matrix.

The applicability of NRC licensing standards to mixed waste in storage is the major reason for our belief that—in specified circumstances—it is not necessary to also subject these wastes to RCRA storage regulation.

Conclusions

These studies demonstrate that the NRC regulatory and licensing program will adequately control risks from hazardous constituents as well as radioactive material. There are safeguards in place based upon the NRC regulatory framework during the conditionally-exempt storage of LLMW. As stated by the court in the MMR ''where a waste might pose a hazard only under limited management scenarios, and other regulatory programs [the NRC] already address such scenarios, EPA is not required to classify a waste as hazardous waste subject to regulation under Subtitle C.''

E. What Was the Response of Commenters to the ANPR?

On March 1, 1999, we published and advance notice of proposed rulemaking (64 FR 10063) for three reasons. First, we wanted to introduce potential strategies for making our regulations more flexible for generators that treat and/or store LLMW on site. Second, we asked members of the regulated community and general public for feedback on our strategies and whether we should consider other approaches for providing relief from the dual, EPA and NRC, regulation of mixed waste. Lastly, we asked LLMW generators to provide us with additional information on the volumes, composition, and management practices (including procedures and associated costs of treatment and storage) of their mixed waste.

We received comments from 69 commenters who represented academia, TSDFs, contractors, federal agencies, medical institutions, industrial users, the nuclear power industry, the public, state governments, and trade groups/law firms.

Availability of Comment Summary

Copies of all the public comments received by EPA, along with our comment summary document are available for viewing in either hard copy or electronic format by following the instructions presented in the beginning of this document. (See Ref. 5, a summary of comments received on the ANPR.) A detailed response to significant comments received on the ANPR and the proposal will be available in the docket for the final rulemaking.

1. What Comments Did We Receive Concerning a Conditional Exemption for Storage?

We received a favorable response from most commenters concerning a conditional exemption for storage. The vast majority (87%) of the commenters supported the concept of providing regulatory flexibility to generators of LLMW. Many of these commenters made suggestions for either increasing or decreasing the level of flexibility and the degree to which EPA should remain involved in the implementation and enforcement of any conditional exemption. Other commenters (6%) provided suggestions for improving the effectiveness of the proposed approaches, but remained silent as to whether they supported the overall concept. The remaining commenters (7%) opposed EPA's concept for various reasons.

We received 47 comments supporting the concept of a conditional exemption for on-site storage of LLMW at nuclear power plants. Several commenters, primarily universities, suggested the conditional exemption should be extended to wastes stored ''off-site.'' Thirty-four (72% of the supportive commenters) commenters believed that the scope of the conditional storage exemption should include all material licensees that have either a NRC or Agreement State license for LLMW. Several commenters noted that non-reactor facilities generate most of the mixed waste in the United States and

are faced with the same compliance and management issues as reactor facilities.

We also received comments from six commenters that the conditional exemption for storage should not be extended to commercial TSDFs because these facilities provide such services and have RCRA Subtitle C permits to do so. As such, they require no relief. Commenters stated that: such facilities are in the business of managing LLMW for compensation and should be regulated accordingly; and the duration of storage at such facilities may be driven by the time requirements under the facility's RCRA permit and an exemption that would void those time frames could potentially affect the facility's ability to control waste inventory.

2. What Were the Comments on Decay-In-Storage?

We received 32 comments on the proposed conditional exemption for Decay-in-Storage (DIS). All commenters supported relief in this area. Two commenters opposed the DIS proposal laid out in the ANPR. Both of these commenters, stated that they preferred a strategy with more flexibility to manage wastes that (1) have longer half-lives than those prescribed by the NRC, (2) are difficult to dispose of, (3) do not yet meet NRC's criteria of ''cannot be distinguished from background'' after 10 half lives, and (4) begin decay at different times.

We received 23 comments on when LLMW would reenter the RCRA system. Seventeen commenters supported the strategy to bring waste back into the RCRA system once the LLMW had either ''decayed'', ''decayed to background levels'', or ''decayed to insignificant levels.'' One commenter noted that often non-detectable background levels are not specifically established by the NRC and vary from state to state, so background levels at one facility may be different than background levels at another facility. This commenter also stated that since AEA low-level waste requirements protect the waste after it decays, as well during the decay process, there should be no urgency to revert back to RCRA management. A different commenter echoed the same concern that often ''indistinguishable from background'' is not the same as ''no radioactive material in waste'' which is a requirement prior to acceptance at many commercial waste treatment facilities. This commenter added that EPA should make sure that once the waste decays to NRC license levels (indistinguishable from background) it must be accepted by commercial treatment facilities, even if the radiation survey finds extremely small concentrations of radioactive material in the waste.

3. What Comments Did We Receive Concerning Treatment of Waste in Storage?

We received 36 comments regarding the scope of the exemption. Of these comments, 11 commenters supported the conditional exemption, 23 supported the conditional exemption with recommendations to expand the exemption, and two specifically opposed the conditional exemption. One commenter believed that the treatment of mixed waste should be performed on-site in a tank, container, or containment building in accordance with the generator's NRC license requirements. Other commenters believed that EPA should not limit the exemption to treatment in containers, tanks, or containment buildings. One such commenter supported a treatment exemption for treatment in enclosed units with filtered exhaust systems. Other commenters noted that simple treatments, such as neutralization of acids and bases, ion exchange, small scale distillation, and similar measures performed by qualified and authorized personnel should be included without restriction. Another commenter noted that the definition of ''tank or container'' should include, but not be limited to, small-volume containers such as carboys, liquid scintillation vials, and other commonly-used containers.

4. What Comments Did We Receive Concerning Possible Conditions for a Storage Exemption?

We received numerous comments regarding the possible conditions that must be met to qualify for an exemption. The most significant conditions discussed by the commenters involved the notification and identification of units, and noncompliance. We discuss these categories of comments below.

a. What did commenters say concerning notification and identification of units?

We received comments from 22 commenters regarding the proposal to establish notification requirements for LLMW facilities applying for conditional exemption from RCRA hazardous waste regulations. Eleven commenters endorsed the proposal. Another seven commenters recommended modifications to the proposal. Four commenters opposed the proposal, maintaining that the Agency identification number in RCRA or facility designation in existing NRC licensing requirements served this purpose. (See ''Summary of Comments from March 1, 1999 ANPR'' in docket.)

Of the 11 commenters who endorsed the proposal, two commenters agreed that requiring the owner/operator to notify EPA within 90 days is a reasonable requirement. Another commenter pointed out that notification was essential to help prevent confusion regarding the regulatory status of a particular unit, particularly during an EPA inspection. The other nine commenters contended that the proposal establishing the notification requirement and the proposal requiring the owner/operator to possess a valid NRC and Agreement State license are the only two conditions that are necessary to exempt facilities from RCRA regulations. Of the seven commenters who suggested modifications to the proposal, four believed that the notification requirements should be kept as simple as possible.

b. What were commenters views concerning non-compliance and RCRA enforcement?

Sixteen commenters addressed the proposal dealing with violations and the related proposal to include a reporting requirement as a condition of the exemption. One commenter endorsed the overall proposal, while seven commenters either sought clarifications about the proposal or suggested modifications to it. Eight commenters opposed the proposal.

Of the seven commenters who sought clarifications about the proposal, four commenters said we should consider revocation of the conditional exemption only for serious or repeat violations, and especially in instances where environmental and health and safety issues were involved. Of the eight commenters who opposed the proposal, six believed that notifications should be limited to events that are reportable under the conditions of the applicable NRC license.

c. What did commenters say about notification of violations & reporting requirements?

Two commenters supported reporting of noncompliance with the conditions of the exemption. One commenter agreed that any releases with potential for significant environmental impact should be reported to EPA as is currently required for radionuclides and other hazardous materials. One commenter agreed with the proposed requirement for oral reporting within 24 hours for violations of the NRC license that results in endangerment to human health and the environment, noting that

this provision is consistent with existing NRC requirements. However, this commenter did not agree with the requirement for a written report within 5 days, noting that the standard NRC requirement for submitting a written report to NRC is 30 days. The commenter recommends that the reporting requirements should not be more stringent than NRC requirements.

VI. Transportation and Disposal Conditional Exemption For Mixed Waste and Eligible NARM

Regarding transportation and disposal, we are proposing regulatory flexibility related to the manifest, transportation, and disposal of treated LLMW or eligible NARM. In the sections below, we will discuss the following topics: the regulatory relief we are proposing; the applicability of the proposal; the point at which the exemption would apply; implementation and enforcement aspects of the proposal; the rationale behind the requirements that we are proposing; the technical analysis we have conducted on the proposed option; and stakeholder issues.

A. What Regulatory Relief are we Providing for Transportation and Disposal?

We are proposing to conditionally exempt LLMW or eligible NARM from RCRA Subtitle C hazardous waste manifest, transportation, and disposal requirements if all of the proposed conditions are met. To be eligible for the exemption, the RCRA Subtitle C exempted waste must be managed as a low level radioactive waste (LLW) or NARM waste in accordance with NRC, or Agreement State regulations. This proposal is based on our determination that LLMW or eligible NARM mixed waste, if managed pursuant to the NRC or Agreement State regulations for manifest, transportation and disposal of LLW, would provide sufficient protection of human health and the environment during the manifest, transportation and disposal of a treated RCRA hazardous waste (See section VI. G. for details).

With today's action, we anticipate that MW generators and treaters would have considerably more disposal capacity available to them. Currently, there is only one commercial mixed waste disposal facility while there are three LLRWDFs licensed by the Agreement States. Consequently, commercial MW generators, with an estimated annual waste generation rate of approximately 140,000 cubic feet of LLMW, would be able to move those wastes that can be treated to meet LDR standards to disposal.

The conditions for the transportation and disposal exemption are listed in § 266.315 which includes the following:

- Meet LDR treatment standards in accordance with one of the following:
- Treatment at a RCRA-permitted mixed waste treatment facility;
- Treatment on site under the provisions of the conditional exemption from the RCRA storage and treatment requirements proposed today for NRC or Agreement State licensees; or
- Without treatment, if the ''as generated'' hazardous waste mixed with LLW or eligible NARM meets the LDR treatment requirements.
- Send a notification package to the following agencies and receive written confirmation that they have received the package:

—The RCRA program agency with jurisdiction over your MW;
—The RCRA program agency in the State where the NRC or Agreement State-licensed low level radioactive waste disposal facility (LLRWDF) receiving your waste is located; and
—NRC or Agreement State Agency regulating/licensing the LLRWDF receiving your waste for disposal.

- Meet NRC 10 CFR 71.5 or Agreement State transportation requirements, and NRC 10 CFR 20.2006 or Agreement State manifest requirements even if you self-regulate under the authority of Atomic Energy Act.
- Ensure that the exempted waste (meeting LDR treatment standards) is disposed at a LLRWDF pursuant to NRC or Agreement State regulations in accordance to 10 CFR 61. (We are requiring that the RCRA-exempt LLMW, or eligible NARM, be disposed in containers that meet the waste packaging, waste form and waste integrity requirements of NRC.)
- Retain all records related to the conditional exemption (including the necessary LDR records) as specified in § 266.365.

Exempted waste would continue to be regulated by NRC or Agreement State during subsequent transportation and disposal. We believe NRC or Agreement State regulations for the manifest, transportation, and disposal provide adequate protection for human health and the environment from the risks posed by LLMW treated to LDR treatment standards. For transportation, as discussed in VI.E.3., treating waste to LDR treatment standard levels reduces toxicity and mobility of hazardous constituents remaining in the waste. Thus, transportation of the treated waste according to the requirements for low level radioactive waste would be adequate. In addition, the exempted waste must not be in a liquid form, as specified by NRC or Agreement State regulations for the disposal of LLW. Therefore, if spilled during transportation, the exempted waste could be contained relatively easily. As a result, the likelihood of exempted waste contaminating the environment and endangering human health during transportation would be low.

We also believe that LLMW, or eligible NARM, meeting LDR treatment standards poses insignificant risks when disposed of in LLRWDFs according to the requirements set by NRC or Agreement State according to 10 CFR 61. Our technical analysis showed that NRC or Agreement State requires adequate controls to protect against radiation hazards at LLRWDFs. We believe that these landfills would also protect against the chemical hazards of LLMW in the absence of RCRA disposal requirements, so long as the LLMW, or eligible NARM, meets the LDR treatment standards and is disposed at a LLRWDFs licensed by NRC or an Agreement State. (See discussion in VI. G.).

B. Applicability of the Proposal

1. To What Types of Waste Does This Rule Apply?

The conditional exemption for disposal applies only to LLMW (a RCRA hazardous waste as defined in 40 CFR part 261 mixed with a low level radioactive waste as defined in 10 CFR 61.2) or eligible NARM (as defined in this proposal—a RCRA hazardous waste mixed with a NARM waste which meets the acceptance criteria of a LLRWDF licensed by NRC or an Agreement State). The exemption does not apply to a RCRA hazardous waste mixed with high level radioactive waste, or transuranic waste.

We are proposing to include eligible NARM waste in the conditional exemption at the request of a state agency regulating the radioactive material. (See Ref.11.) NARM waste is not regulated by NRC. Neither is NARM currently regulated under RCRA Subtitle C authority. In practice, NARM waste has been regulated by the States under State law, or by DOE under DOE Orders. Most of the states are currently regulating NARM waste under their radiation control program. NARM waste mixed with a RCRA hazardous waste is managed under both RCRA and state radiation control programs in most states. Because of this dual regulation, we are proposing that the exemption

also apply to eligible NARM waste. However, we are requiring that the NARM waste meet the acceptance criteria of a LLRWDF licensed by NRC or an Agreement State in accordance with 10 CFR 61. This restriction is necessary because our technical analysis is based in part on licensing requirements under 10 CFR 61. We are seeking comments and supporting information concerning the applicability of this transportation and disposal proposal to eligible NARM waste.

2. Who Could Benefit From this Proposal, and What is the Profile of Their Waste?

All generators of LLMW or NARM waste can potentially benefit from this proposal, if their MW meets all the specified conditions. Some examples of these generators are listed at the beginning of the preamble in Table 1 under ''Who is Eligible for This Rule''. We estimate that this rulemaking could apply to the LLMW generated and stored by over 1,000 industrial facilities and laboratories in the U.S. Approximately 108,000 cubic feet of LLMW is generated annually by these facilities, and an additional 4,000 cubic feet of legacy waste is currently in long-term storage without options for treatment and/or disposal. In addition, DOE generates approximately 400,000 cubic feet annually, with 4.4 million cubic feet of legacy waste in storage. (See Ref.14 and 17 for details on waste volumes and cost-benefit analysis.)

According to the available information, DOE operations currently face mixed waste disposal capacity issues similar to those experienced by the commercial sector. This proposal would only provide partial relief for DOE due to concerns expressed by the States regarding disposal of the RCRA-exempted LLMW at DOE's LLRWDFs (see VI. H). However, DOE has been working with the States to establish additional disposal capacity for its LLMW.

3. What Other Regulatory Relief Provisions May Apply?

Generators of LLMW or NARM that is not eligible for the proposed conditional exemption for transportation and disposal may petition EPA to get their specific waste stream delisted from RCRA Subtitle C under the RCRA Delisting Program (Contact the EPA Regional delisting coordinator for details.)

C. What is the Point of Exemption?

We are proposing that LLMW or eligible NARM be exempted from RCRA Subtitle C requirements once the generator has met all pre-transport requirements under § 266.315. Specifically, the point of exemption occurs when the waste is placed on the transportation vehicle bound for disposal at an NRC or Agreement State-licensed LLRWDF. A shipment ''bound for disposal'' includes any shipment originating from the generator that is transported by one or more transporters. However, the shipment must not go to any other facility en route to the designated LLRWDF, other than to a transfer facility meeting the requirements of 40 CFR 263.12. The exempted waste would not have to be managed according to RCRA Subtitle C requirements during transportation and final disposal at the LLRWDF. We are proposing the point of exemption as described above for the following reasons:

- The exempted waste will continue to be managed in accordance to the AEA because of the radioactive component of the waste.
- The risks posed by exempted waste when transported and manifested are adequately addressed by the NRC transportation and manifest requirements.
- The risks posed by the exempted waste when disposed of in a LLRWDF are adequately addressed by the requirements set by NRC or an Agreement State in accordance with 10 CFR 61.
- The exemption would reduce the generator's requirements to comply with duplicative regulations during transportation and disposal, in that NRC regulations have been shown to be as protective as RCRA regulations.

In conclusion, we set the point of exemption as proposed primarily because we believe that transportation, tracking, and disposal of waste meeting the LDR treatment standards can be safely managed according to similar regulations of NRC. The end result is that regulatory burden can be reduced because NRC regulations provide comparable protection.

D. Implementation and Enforcement

1. How Will the Transportation and Disposal Conditional Exemption Be Implemented?

We are proposing that the transportation and disposal conditional exemption be self-implementing. No prior governmental approval or review of documentation is required before a generator's qualified waste exits RCRA Subtitle C manifest, transportation, and disposal requirements. This basic framework is consistent with most other hazardous waste exemptions and exclusions, such as the LDR program, where generators and treaters can certify that their hazardous waste meets LDR treatment standards and qualifies for land disposal, without prior governmental approval. Furthermore, it is also consistent with provisions discussed in the HWIR99 notice related to the concentration based exemption and exclusions from the definition of solid waste found in 40 CFR 261.4(b).

We are proposing self-implementation for the transportation and disposal conditional exemption because we believe that there is no substantial advantage to be gained from requiring approval for an exemption. Furthermore, the waste exiting RCRA requirements would continue to be managed under an alternate regulatory program (NRC or Agreement State regulations) that would provide comparable protection for human health and the environment. This would also be true for generators like DOE who self-regulate under the AEA, because their waste would also be disposed at a LLRWDF regulated by NRC or Agreement State. Therefore, we believe that under the proposed self-implementing method, the waste will continue to be properly managed while the regulatory burden is reduced. In addition, self-implementation has the following advantages:

- The exemption can take effect more quickly since approval from the RCRA program agency is not necessary;
- It reduces the generator's burden in claiming the exemption;
- It does not impose burden, or time restrictions on the RCRA program agency to review the notification package while maintaining jurisdiction; and

However, self-implementation does not mean that the RCRA program agency does not have a role in overseeing the conditional exemption. The RCRA program agency will be notified of the exemption, and will have access to all documentation related to a claim (See VI.E.2 of this preamble).

While the RCRA regulatory agencies may review a generator's exemption claim, the lack of such a review would not be an indication of their approval of the exemption claim. That is, the confirmation that the RCRA program agency has received the exemption notification package would not imply that they have reviewed or approved it. Therefore, the exempted waste will still lose its exemption whenever it is discovered that any of the required conditions is not met.

The RCRA program agency may conduct inspections and review the records to determine whether the

generator is in compliance with the conditions of this exemption. The RCRA program agency can use this information to support enforcement action. Concerned citizens can bring to the regulator's attention any circumstance that might aid authorities in monitoring and enforcement efforts, or file a citizen suit under RCRA section 7002 against a generator for failure to comply with the conditions for exemption.

2. What Happens if Your Waste No Longer Meets the Conditions of the Transportation and Disposal Conditional Exemption?

When any exemption condition is not met, your waste loses its exemption status and may be fully regulated under RCRA subtitle C as a hazardous waste. You could also be subject to enforcement actions which could result in fines and penalties. RCRA subtitle C sections 3008 gives us the authority to commence enforcement actions and assess fines and penalties. Examples of activities that could lead to an enforcement action against you include misclaiming of a conditional exemption, failure to meet the conditions of the exemption, or providing erroneous information to the disposal facility.

3. Are There any Additional Requirements You Must Meet?

Yes, the additional requirements of the transportation and disposal conditional exemption are listed under the proposed sections § 266.325(b) and § 266.330(b). Under these sections, you are required to notify the LLRWDF of the exempt status of your waste before you ship it to the facility for disposal (see VI.E.2.d). These requirements are obligations that you are required to meet at all times. While your exemption status would not change if a requirement was violated, you could be subject to RCRA enforcement actions which could result in fines and penalties.

4. Can Your Exemption be Reclaimed if You Fail to Meet a Condition?

This proposed conditional exemption rulemaking envisions a self-implementing process. The exemption is lost at the time of non-compliance. EPA needs to take no action to remove the exemption. However, if your waste loses the conditional exemption, you may reclaim your exemption if you return to compliance with all conditions in § 266.315. You must send the RCRA program agency a written notice that you are reclaiming your exemption. Your notice must do the following:

- Explain the circumstances of the failure which caused your waste to lose the exemption;
- Certify that your waste is in compliance with all conditions as of the date you reclaim the exemption;
- Demonstrate that the failure is not likely to recur because of specific steps (list them) you have implemented in your LLMW-related compliance activities; and
- Include any additional information you would like us to consider regarding your reclaim notice.

If subsequently we find that a reclaimed conditional exemption is inappropriate because it is not protective of human health or the environment, then we may terminate the conditional exemption which was reclaimed.

Alternatively, we could specify a waiting period for reclaiming a disposal exemption. The waiting period would allow the regulatory agency time to confirm that the violation has been corrected, and is not likely to recur. This may be prudent when a conditional exemption has been lost. Generally, it takes time to schedule and conduct confirmation inspections. Self-implementation of your reclaimed exemption may not allow the RCRA program agency time to confirm that an infraction has been corrected. As a result, waste could be inappropriately shipped off-site for disposal. Therefore, we are seeking comment on whether to provide for a 90-day waiting period before your reclaimed exemption for disposal is final.

5. What Can a LLRWDF do to Reduce the Potential Applicability of RCRA Authorities?

As discussed in VI.G. we believe that disposal of LLMW, treated to LDR standards, in a designated LLRWDF is protective of human health and the environment, and we do not expect the exempted waste to pose a risk once properly disposed. We believe a LLRWDF can greatly reduce the potential applicability of RCRA authorities by taking steps to ensure that the exempted waste has achieved the required LDR treatment standards. During our discussion with the LLRWDFs (Ref.9), they indicated that they would consider conducting independent waste analysis to ensure that the waste accepted do meet the LDR treatment standards. Additionally, we would encourage open communication between the waste generators and the LLRWDFs regarding waste information.

E. What Conditions Must You Meet Prior to Claiming the Transportation and Disposal Exemption?

This section discusses the rationale behind the conditions of the exemption.

1. Why Are we Requiring LDR Treatment?

The hazardous constituents in waste eligible for the exemption must first be treated to meet the RCRA LDR treatment standards specified in 40 CFR 268.40—268.48. The treated waste also must meet the definition of non-wastewater as defined in 40 CFR 268.2(d). We believe that LLMW or eligible NARM waste should meet LDR treatment standards, and be managed in accordance with NRC or Agreement State requirements for LLW to ensure protection of human health and the environment.

Like any hazardous waste destined for land disposal, LLMW must meet LDR treatment standards prior to its disposal at a mixed waste disposal facility (with a RCRA hazardous waste disposal permit and an NRC or Agreement State license for radioactive waste disposal). Compliance with the LDR treatment standards ensures that the toxicity and mobility of the hazardous waste constituents is reduced. Our LLMW transportation and disposal conditional exemption is based upon our determination that the LLMW, or eligible NARM waste, which meets the LDR treatment standards (thereby substantially reducing the toxicity and mobility of the hazardous constituents in the waste) is rendered ''nonhazardous'' when disposed in accordance with NRC or Agreement State regulations.

In the Hazardous and Solid Waste Amendments (HSWA) of 1984, Congress prohibited land disposal of hazardous waste unless the waste undergoes treatment to minimize threats to human health and the environment. The statute requires that treatment standards established by EPA will substantially diminish the toxicity or mobility of hazardous waste such that short-and long-term threats to human health and the environment are minimized. See RCRA section 3004(m) 42 U.S.C. 6912(a), 6921, and 6924. Over the last 15 years, EPA has responded to the statutory mandate by developing through a series of rulemakings treatment standards for hazardous waste based on the best demonstrated available technology (BDAT) for treating the waste. With the promulgation of the most recent ''Phase IV'' Rule (63 FR 28556, May 19, 1998), EPA has promulgated treatment standards for

most hazardous wastes. This effort will continue as we promulgate new hazardous waste listings or otherwise identify new hazardous wastes.

Furthermore, hazardous wastes (other than wastewaters) meeting the LDR treatment standards, with a few exceptions, must be disposed of at a RCRA Subtitle C hazardous waste disposal facility. However, characteristic wastes that are rendered non-characteristic may be disposed of as non-hazardous solid waste provided that they meet LDR treatment standards, including standards for underlying hazardous constituents (§ 268.2(i)). Wastes that have been delisted (§ 260.22) may also be disposed of as solid waste.

Please note: In the following sections the discussion on existing LDR treatment requirements are meant to provide reference information for the reader. We are not taking comment on any existing LDR requirements.

In the following sections of VI.E.1.a, we discuss different types of RCRA hazardous wastes and summarize the existing applicable RCRA LDR treatment standards for them.

a. *What are the existing RCRA LDR treatment requirements for various types of LLMW?*

In the following discussion, we provide information regarding existing RCRA LDR treatment requirements for various types of waste. A table identifying the types of RCRA hazardous waste commonly found in LLMW is provided as background material in the RCRA Docket (Ref. 10)

i. LLMW that is a listed hazardous waste (F, K, P, and U waste)

LLMW that contains, or is mixed with or derived from, a hazardous waste listed in 40 CFR Part 261, subpart D has to be treated to meet the LDR treatment standards specified for these waste streams in 40 CFR 268.40 before it is eligible for the transportation and disposal exemption. Based on the available data, the listed hazardous waste codes most commonly associated with LLMW are F001—F005, the codes for spent solvent wastes.

ii. LLMW exhibiting hazardous characteristics (D001–D043)

Currently, a characteristic LLMW becomes a low-level radioactive waste and is managed as such once it has been decharacterized. Under this situation, a generator would not need to claim the transportation and disposal exemption, nor meet the associated conditions in order to dispose the resulting non-RCRA hazardous, low level radioactive waste in a low level radioactive waste disposal facility. However, if a characteristic MW was treated but not decharacterized, then it continues to be a MW. You would then need to claim the MW transportation and disposal exemption and meet the associated conditions for this resulting MW in order to dispose of it in a LLRWDF. In addition, the underlying hazardous constituents (UHCs) must always be identified and treated to meet the Universal Treatment Standards (UTS) levels specified in 40 CFR 268.48.

Under current regulations, a waste exhibiting the characteristics of ignitability (D001), corrosivity (D002), reactivity (D003), or toxicity (D004–D043) must be treated to the applicable LDR treatment standards specified for those waste codes in 40 CFR 268.40 before it can be disposed on land. If meeting the LDR treatment standards also enabled the treated waste to become decharacterized, then the resulting waste can be disposed as non-hazardous waste. However, if meeting the LDR treatment standards does not enable the treated waste to become decharacterized, then the resulting waste must be disposed of as hazardous waste. (This is the case for some characteristic wastes exhibiting the characteristic of toxicity, such as Selenium.) In order for a characteristic waste exhibiting toxicity to be decharacterized, the toxic constituent must be treated to below the ''Maximum Concentration of Contaminants For The Toxicity Characteristic'' listed under § 261.24. On the other hand, the LDR treatment standards are technology based and therefore do not always achieve the levels listed in § 261.24. Therefore, a decharacterized LLMW becomes a LLW and does not need to claim the MW transportation and disposal exemption. On the other hand, a treated but not decharacterized LLMW continues to be a LLMW and would have to claim the exemption in order for it to be disposed in LLRWDF.

In addition, the UHCs must also be identified and treated to meet the UTS levels specified in 40 CFR 268.48. In 1998, EPA promulgated the LDR Phase IV Rule, revising UTS for nonwastewater forms of 12 metals (63 FR 28559–28572). The rule also required treatment of UHCs reasonably expected to be present in the toxicity characteristic (TC) waste to UTS levels.

iii. Mixed waste debris

Debris, as defined in 40 CFR 268.2(g), contaminated with RCRA hazardous waste and radioactive debris can be treated according to an alternative LDR treatment standards under § 268.45 (57 FR 37221, Aug. 8, 1992). The treated debris can then be disposed on land. The three major types of treatment methods under the LDR alternative treatment standards for debris consist of destruction, extraction, and immobilization. Under LDR regulation, any hazardous debris treated by the destruction and extraction methods are considered non-hazardous waste. As such, a MW debris meeting the requirements for extraction and destruction treatment methods can be managed as radioactive waste alone. Therefore, you would not need to claim the transportation and disposal exemption, nor meet the associated conditions in order to dispose this resulting non-RCRA hazardous, radioactive waste debris in a LLRWDF. However, for a MW debris treated via the immobilization treatment methods, the resulting waste remains a RCRA hazardous waste. Therefore, you would need to claim the exemption and meet the associated conditions in order for you to dispose the immobilized MW debris in a LLRWDF. Alternatively, a listed hazardous debris treated through the immobilization technology becomes a non-hazardous waste under § 261.3(f)(2) if the Regional Administrator determines that it is no longer hazardous, after a ''contained-in'' determination is made. Characteristic debris treated by immobilization technology can also become a non-hazardous waste if you, the generator, can demonstrate that the immobilized debris is no longer hazardous. If your treated debris is no longer hazardous, then you would not need to claim a conditional exemption in order to dispose the waste at a LLRWDF. Also, mixed waste debris treated to meet the treatment standards found in § 268.40 can be disposed of at LLRWDFs if the proposed conditions were met.

iv. Hazardous soil contaminated with radioactivity

Under current LDR treatment requirements, soils contaminated with RCRA hazardous waste must be treated to meet the universal treatment standards at § 268.48 before disposal in a RCRA hazardous waste landfill. In addition, we also promulgated alternative treatment standards for soils under the LDR Phase IV Rule (63 FR 28602–28622, May 26, 1998) to provide flexibility for remediation activities. The alternative treatment standards for soils can be found in § 268.49.

Contaminated soils treated to meet the RCRA LDR treatment standards must be disposed in a RCRA hazardous waste disposal facility, unless they are found to no longer be a hazardous waste. When the treated waste continues to be

a hazardous waste, you would need to claim the exemption proposed today in order to dispose the treated soils at a LLRWDF. However, under current LDR regulations, the treated soils can be disposed in a RCRA non-hazardous waste disposal facility if it is determined that the treated soils are no longer a RCRA hazardous waste. Under this situation, the resulting soils become a radioactive waste, and you do not need to claim the exemption proposed here today in order to dispose it in a LLRWDF.

The alternative treatment standards allow contaminated soil to be treated to remove 90% of the hazardous constituent concentrations, but not below 10 times the UTS level for those constituents. In the LDR Phase IV Rule, we determined that the technology-based ''90 percent reduction capped by 10 x UTS'' treatment standard for contaminated soil is sufficiently stringent to satisfy the core requirement of RCRA Section 3004 (m) that short and long-term threats to human health and the environment are reduced, taking into account the need to encourage remediation of contaminated soil which involves excavation and treatment of the soil. In the case of this exemption, soils placed in a NRC-regulated LLRWDF must be containerized in addition to complying with the applicable LDR treatment standards. We request comment on whether, for any reason, this conditional exemption should apply only to hazardous soils contaminated with radioactive waste and treated to LDR standards derived from the original waste codes, rather than to soils treated to alternative soil treatment standards.

v. *Hazardous and radioactive waste managed in lab packs*

As an alternative to the otherwise applicable LDR treatment standards, lab packs containing hazardous and radioactive wastes are eligible for the exemption provided the following requirements are met:

- The lab packs comply with the applicable provisions of 40 CFR 264.316 and 40 CFR 265.316;
- The lab pack does not contain any of the wastes listed in Appendix IV to part 268;
- The lab packs are incinerated in accordance with the requirements of 40 CFR part 264, subpart O or 40 CFR part 265, subpart O; and
- Any incinerator residues from lab packs containing D004, D005, D006, D007, D008, D010, and D011 are treated in compliance with the applicable LDR treatment standards specified for such wastes.

vi. *LDR variance from a treatment standard*

Today's proposal does not change the provisions for a variance from a treatment standard at § 268.44. You may continue to petition for a variance from the LDR treatment standards as discussed under § 268.44 if the established LDR treatment standards is not appropriate for your specific waste.

b. *How do you determine whether your hazardous and radioactive waste meets the LDR treatment levels?*

You must comply with the same requirements as those required under the current LDR program to determine whether your waste meets the LDR treatment standards prior to disposal. (See the LDR waste determination and testing requirements at sections 268.7(a) and 268.7(b) for hazardous waste generators and treatment facilities, respectively.

c. *What can you do to reduce radiation hazards when testing your hazardous and radioactive waste to show compliance with LDR treatment levels?*

Recognizing the public's concern over potential radiation exposure from mixed waste testing (for example, as noted in public comments on the HWIR95 proposal), we developed, in close coordination with NRC, a mixed waste testing guidance titled ''Joint NRC/EPA Guidance on Testing Requirements for Mixed Radioactive and Hazardous Waste'' to address this concern. [Interested readers can get a copy of the guidance by accessing EPA's mixed waste web site (www.epa.gov/radiation/mixed-waste/).] The primary purpose of this guidance document is to help NRC or Agreement State licensees and others in characterizing their mixed waste in accordance with RCRA regulations while keeping radiation exposure as low as reasonably achievable (ALARA). The guidance emphasizes flexibility in the RCRA testing requirements so that the ALARA concept can be incorporated.

2. Why is Notification a Condition for the Exemption?

a. *Why must you notify the appropriate RCRA program agency of your claim of the exemption?*

The notification package, referred to in § 266.325-§ 266.330 of this proposed rule, lets your RCRA program agency know about your exemption claim. The notification is especially important because as proposed, the regulation would be self-implementing. The information contained in the notification package would provide your RCRA program agency a general understanding of the nature and volume of your waste. The certification that your waste meets the LDR treatment standard provides your RCRA program agency the assurance that one of the critical conditions of the exemption has been met. Information regarding the disposal facility allows your RCRA program agency to confirm such disposal. This information would allow the agency to document, verify, and track your exemption compliance status. They can plan inspections and review exemption-related records to ensure that you are following all the conditions of the transportation and disposal exemption. They can also consider the need for possible enforcement actions if an exemption is improperly claimed. However, your RCRA program agency would be under no obligation to review the notification notice or approve the exemption claim.

b. *Why must you also notify both the RCRA program agency and NRC or Agreement State in the State where your waste will be disposed?*

We require you to notify the RCRA program agency and NRC or Agreement State at the state where the NRC or Agreement State-licensed LLRWDF is located so that they are properly informed and can take prompt and informed action, when necessary. Further, we believe that knowledge of the exemption claims should enable the regulatory agencies, in the state where the LLRWDF resides, to take a more proactive role in protecting their interests. The state regulators expressed concerns that disposal facilities might receive shipments that do not meet the transportation and disposal exemption conditions (Ref. 11).

In the event that they need to investigate any problem at the disposal facility in their State, knowledge of the exemption would allow them to communicate with the appropriate regulatory agencies and obtain additional information necessary for their investigation. Knowledge of the exemption would also facilitate and expedite communication among regulatory agencies in different states and under different regulatory authorities. LLRWDFs are licensed and regulated by NRC or Agreement State, which in some instances can be a separate regulatory agency from the RCRA agency within a state. Therefore, we are proposing that notification packages be sent to NRC or Agreement State and the RCRA program agency in the state where the RCRA-exempted waste is to be disposed. We believe this condition will not create much additional burden for you because you

already have to prepare the same notification package for their RCRA program agency. This additional notification would only require you to make and send copies of the same paper work that has already been created. Therefore, we believe this notification condition can be accomplished with minimum cost and burden while providing substantial benefit.

c. *Are you required to include the LDR test results and other related material in your notification package?*

No, we believe it is not necessary to submit detailed LDR compliance data, such as the waste analysis plan and testing data, in your notification package. The purpose of the notice is simply to inform the regulatory agencies of the exemption claim and provide a general description of the claim (for example, your identity, description and volume of the waste, and disposal location). In addition, because this rule is self-implementing, we do not see the advantage of including detailed information such as the waste analysis plan and laboratory testing results in the notification package. This is because the implementing authority is not required to make a formal decision regarding the exemption under the self-implementing scheme. The inclusion of detailed LDR compliance data would unnecessarily create additional burden and increase the cost of the regulation.

This aspect of the proposal is consistent with the existing RCRA program. The LDR program does not require generators to submit detailed waste testing information to the States. Rather, these types of information must be kept at the generator's site for at least three years. Under the transportation and disposal conditional exemption, the LDR compliance testing data would also be kept on site for three years from the time the exemption is claimed. Therefore, the RCRA program agency would always have access to the detailed information regarding LDR compliance.

d. *Why do you have to notify the LLRWDF receiving your exempted waste of the exempted status of your waste?*

We are requiring you to notify the LLRWDF for two reasons. The first reason is to let the LLRWDF know that the shipment contains the exempted waste so that they can take actions that they deemed necessary to protect their facilities. The second reason is to allow future identification of a shipment that had contained an RCRA-exempted waste.

Clearly, a LLRWDF's willingness to receive the exempted waste is essential in achieving regulatory relief for the disposal of hazardous and radioactively contaminated waste under this proposal. One major input that we received from the owners/operators of LLRWDFs during our meeting with them in December 1998 (Ref. 9) is that they want to screen out potentially problematic shipments by testing for chemical constituents. They also want to ensure that the exempted wastes meet the LDR treatment standards and other conditions for exemption proposed today. The notification procedure would allow them to protect their facilities from non-compliant wastes.

Secondly, we are requiring that the generator record the shipment number, from block number 5 of NRC's Uniform Low-Level Radioactive Waste Manifest Form 540, of a radioactive waste shipment that contains RCRA-exempted mixed waste on the notification letter to the LLRWDF receiving the RCRA-exempted waste. We want to provide the LLRWDFs and any regulatory agency a method of identifying, if necessary, a batch of LLW shipment that contained or contains RCRA-exempted waste. After meeting LDR treatment standards, a RCRA-exempted mixed waste would be managed as a radioactive waste. Therefore, without proper documentation, it would not be possible to identify, when necessary, whether a given radioactive waste transported to a LLRWDF contained the RCRA-exempted waste. We believe this identification is necessary to facilitate any actions regarding the RCRA-exempted waste at LLRWDF.

3. What Are the Conditions for Manifesting and Transporting the Exempted Waste?

a. *Why is it appropriate to manifest and transport the RCRA-exempted mixed waste only according to NRC, or an Agreement State's, manifest and transportation requirements?*

We are proposing that only NRC or Agreement State's manifest and transportation requirements be followed for the shipment of the exempted waste. We are proposing to conditionally exempt LLMW or eligible NARM which meets the LDR treatment standards from RCRA hazardous waste manifest and transportation requirements because we believe transportation of this waste according to the requirements for transporting a low level radioactive waste is protective of human health and the environment.

The waste first must be treated to meet LDR treatment standards before it is exempted. During treatment most of the organics in the waste will have been destroyed and the metals stabilized. The LDR treatment standards compliant waste would also no long exhibit any of the ignitible, reactive, and corrosive characteristics. Thus, we believe that the packaging and transportation requirements for a radioactive waste would be adequately protective for the transportation of a waste meeting LDR treatment standards. The Department of Transportation (DOT) supports this assessment. NRC or Agreement State's transportation regulations for low level radioactive waste incorporate the DOT requirements for transporting radioactive material. The DOT's Hazardous Material Regulations (HMR; 49 CFR 100–199) contain requirements for the transportation of hazardous materials. This regulation include packaging, labeling, documentation, placarding, and other requirements. The HMR contain criteria for 9 hazardous classes, some of which are subdivided into divisions. Hazardous materials subject to the HMR, must at least be packaged in strong tight containers that can survive transportation. Performance-oriented packaging is usually required for most hazardous materials. In our discussion with the DOT, they agree that when the RCRA component has been treated thus removing the flammable, corrosive, and reactive properties, then the radioactive waste component would be the primary hazard present and the waste would be shipped accordingly. Therefore, we believe the transportation of the LDR treatment standards compliant waste according to the requirements for radioactive material is appropriate.

We also believe the NRC or Agreement State's manifest requirements for low level waste satisfy the tracking needs for the RCRA exempted waste and ensure the arrival of the exempted waste at the appropriate LLRWDF. Even though the RCRA exempted waste is not required to be manifested as RCRA hazardous waste, a mechanism is still needed to track the movement of this waste. This is because disposal of the RCRA exempted waste in NRC or Agreement State-licensed LLRWDF is a critical condition of the exemption. We must be able to track this waste from the generator to NRC or Agreement State-licensed LLRWDF.

Since the exempted waste remains subject to NRC or Agreement State's manifest regulations, we conducted a detailed comparison between the RCRA and NRC's manifest regulations for the purpose of tracking the movement of the RCRA exempted waste. (Ref. 12) We determined that NRC's waste tracking requirements are at least as stringent as

the RCRA requirements. Most notably, both the RCRA and NRC manifests were developed to be consistent with the shipping paper requirements of DOT (See 49 CFR 172.200). Therefore, the RCRA and NRC manifests share many basic elements. In addition, both manifest regulations require closed-loop notification and tracking, exception reporting, and mandatory record keeping of manifests. NRC's regulations, however, go beyond RCRA requirements in several areas, such as requiring longer manifest retention times in certain cases and specifying more stringent schedules for generators to investigate shipments for which they have not received the LLRWDF's acknowledgment of receipt. Given these observations, we believe that NRC's requirements for tracking of low-level waste would more than meet our needs to ensure that the exempted waste arrives at NRC or Agreement State-licensed LLRWDF. Therefore, we are not imposing additional RCRA tracking requirements in this proposal.

b. *Why do generators who self-regulate under the AEA have an additional condition to meet?*

We are requiring generators who self-regulate their radioactive waste management activity under the AEA authority, such as DOE, to follow 10 CFR 71, and 49 CFR 100–199 transportation requirements and 10 CFR 20 manifest requirements as an additional condition to claim the exemption. Generators and transporters regulated by NRC, or an Agreement State, and DOT are already required to follow these transportation and manifest regulations. For generators who self-regulate under the AEA, this additional condition would ensure the consistent application of the manifest and transportation requirements for the RCRA-exempted radioactive waste.

Secondly, this condition provides a vehicle for taking enforcement action against a facility who self-regulates under AEA if NRC or DOT manifest and transportation regulations are violated. By self-regulating under AEA, DOE is not subject to NRC, or DOT enforcement authority for the management of radioactive material, although we understand that DOE works with both agencies to resolve issues of concern. We believe, however, that enforcement is an important aspect of this regulation. By establishing transportation and manifest requirements as a condition for generators who self-regulate under AEA, we are providing an external enforcement mechanism for the RCRA-exempted waste that would otherwise not exist. Therefore, facilities like DOE would be subject to RCRA enforcement actions if they violated this condition. We did not place this requirement as a condition for the exemption for generators subject to NRC or DOT regulations because they would be subject to NRC or DOT enforcement actions if they violated NRC or DOT manifest or transportation requirements.

As the exemption is contingent upon waste disposal in a NRC or Agreement State licensed LLRWDF, it is important that a mechanism is in place to track all exempted waste in transit and confirm that the exempted waste arrived at the appropriate disposal facility. We do not believe this condition would impose an unreasonable burden on these facilities, as other generators and transporters are all required to comply with these manifest and transportation requirements. In addition, it is also critical that the mechanism used is enforceable. Therefore, we believe this proposed condition provides these facilities with an opportunity to take advantage of the proposal while bearing a reasonable regulatory burden.

4. Why Must the Exempted Waste Be Disposed Only in a LLRWDF Licensed by NRC in Accordance with 10 CFR 61?

We are proposing that the RCRA-exempted waste be disposed of only in a LLRWDF licensed by NRC or Agreement State in accordance to 10 CFR 61 to ensure the protection of human health and the environment from the disposal of the RCRA-exempted waste at these facilities. This is because our evaluation is based on the review and analysis of LLRWDFs licensed and operated by NRC or Agreement State in accordance to 10 CFR 61.

We limited our evaluation of the LLRWDFs to only those licensed by NRC or Agreement State due to concerns raised by the States. The States were concerned about DOE's self-regulating status under AEA. Under such regulatory framework, state radiation control programs do not have regulatory oversight authority for the RCRA-exempted radioactive waste. The NRC or Agreement State has primary responsibility for exercising regulatory authority over the possession and transfer of radioactive material by commercial entities, and some non-DOE Federal facilities. In contrast, DOE is responsible for regulating its own activities under the AEA. The States are concerned that they would lose control over the management of the RCRA-exempted radioactive waste, and lose enforcement authority once it exits RCRA Subtitle C jurisdiction (see VI. H. for further discussion). In most cases, this proposed regulation would need to be adopted by the States before it can be implemented, so it is necessary to ensure that the States' concerns are addressed. We believe that restricting the disposal of the RCRA-exempted radioactive waste to a NRC or Agreement State licensed LLRWDF would address the States' concern regarding DOE's self-regulating status. This approach would ensure that all RCRA-exempted radioactive waste would remain under an external regulatory framework and enforcement authority. In addition, this approach would not exclude DOE from taking advantage of the transportation and disposal exemption if DOE disposes of its exempted waste in LLRWDFs licensed by NRC or Agreement State. This approach allows us to accommodate DOE's waste while addressing the States' concern.

Alternatively, DOE can consider petitioning the States for developing site-specific, risk-based exemption levels through the site-specific risk-based variance approach, if adopted, discussed in section VI.F.2 of this preamble. A site-specific risk-based variance would enable DOE to work directly with mixed waste authorized States to develop appropriate risk levels and exemption conditions.

In addition, this exemption does not apply to disposal at on-site disposal units at environmental clean up activities sites such as disposal units at Uranium Mill Tailings Remediation and Control Act (UMTRCA) sites and Formerly Utilized Sites Remedial Action Program (FUSRAP) sites. This is because the technical analysis that was conducted for this proposal was based on the LLRWDFs that are designed and operated according to 10 CFR 61 and associated technical guidance documents prepared by NRC. The disposal units at UMTRCA or FUSRAP sites are not subject to 10 CFR 61 requirements and NRC or Agreement State licensing process for LLRWDFs. However, the proposed exemption is applicable to remediation wastes from UMTRCA and FUSRAP activities that are hazardous wastes contaminated with radioactivity, and are disposed at LLRWDFs licensed and operated in accordance to 10 CFR 61. provided that the generators meet all the proposed conditions for exemption.

5. What Is the Purpose of the Records That You are Required To Keep?

The records would provide your RCRA program agency with information during inspections and audits to determine whether you are complying with all of the conditions of the exemption. These records could also be

used in possible enforcement actions. Since the exemption is self-implementing, it is particularly important that you keep all of the required records and make them available to the regulatory agency, when requested.

6. How Is the Public Involved?

a. *What Is the role of the public in the proposed transportation and disposal exemption?*

The public can play an important role under today's proposal. During the rulemaking process, the public will have the opportunity to provide comments on the proposal. We welcome and encourage the public to provide comments on today's proposed rule to help us address their concerns. In addition, the public will also have an opportunity to voice their opinions when a state develops regulations to adopt a final rule. At any time, the public can also participate by bringing to the RCRA program agency's attention any circumstance that they are aware of which might aid oversight authorities in their monitoring and enforcement efforts. Furthermore, the public can request information concerning a particular facility's operational records from a state regulatory agency if they have a reason to believe that mismanagement at a facility may pose a risk to human health or the environment. The public can also bring a citizen suit against a generator for failure to comply with the conditions of the Rule.

b. *How can the public obtain information about the exemption and stay involved?*

We recognize the need to enable communities to become more active participants in local environmental issues by providing easy access to information. As the exemption is self-implementing, we do not see the advantages of notifying the public since there is no formal decision-making opportunity, prior to the exemption, that the public could participate in.

Many State environmental agencies have mechanisms, such as telephone hotlines, printed or electronic media, to keep the public informed and to answer questions about public safety and environmental issues. We believe these established procedures and information repositories are sufficient to keep the public informed of the disposal activities of LLRWDFs, and encourage state environmental agencies to utilize these mechanisms. Depending on the structure of the State program, the State agencies may decide to provide public access to relevant information at the State or local level (for example, public libraries, or fire stations).

F. What is EPA's Site-Specific, Risk-Based Variance Alternative for Disposal?

We are proposing an alternative approach which would be based on site-specific risk modeling. We are proposing this alternative because the States have expressed interest in site specific risk-based exemption levels which are more suitable for an individual disposal site. By using a site-specific risk-based approach, a state can choose to customize and establish the exemption levels for a LLRWDF under consideration based on the specific characteristics of the disposal site. Under this approach, we are proposing that the regulated community work directly with the States in developing the site-specific risk-based exemption levels using the risk target level specified by EPA.

For the transportation and disposal conditional exemption, we are proposing to use the current LDR treatment standards instead of modeling to develop new national risk-based levels. However, under RCRA, we can generally grant exemptions and variances from RCRA requirements, if an alternate practice will not adversely impact human health and the environment.

We are asking for public comments on the approach of a state approved site-specific, risk-based alternative to allow the disposal of hazardous waste contaminated with radioactivity in any LLRWDFs including DOE's LLRWDFs. This approach could be pursued by States, an owner/operator of a LLRWDF (NRC or Agreement State licensee or DOE sites), or a consortium of generators of LLMW or eligible NARM. In pursuing this option, a petitioner must demonstrate that the site-specific risk-based exemption levels are protective of human health and the environment as defined by EPA at the disposal location. In these situations, a site-specific risk-based variance petition developed in consultation with and approved by the State RCRA agency may be a desirable alternative to the conditional exemption proposed today.

When developing the site-specific risk-based levels, the petitioner should account for the following factors:

- Climatological and hydro-geological information;
- Information on hazardous constituents of concern in the LLW, or NARM contaminated waste (the number of constituents can be targeted by restricting the RCRA waste codes);
- Potential human and environmental receptors;
- At a minimum, national risk protection goals identified by EPA;
- Potential routes of exposure (i.e., direct and/or indirect); and
- Potential exposure media:

—Groundwater (at a minimum);
—Air, if disposing of bulk waste instead of containerized waste; and
—Surface water, if groundwater-to-surface water connectivity is a concern.

When developing the site-specific risk-based variance approach, the public participation process found at § 268.44(e) would be necessary to provide an opportunity for the public to understand and comment on the site-specific risk levels. (See 62 FR 64507, Dec. 5, 1997 for additional discussion for public involvement.)

Today, we are soliciting comments on whether the States, the regulated community, or non-NRC or Agreement State licensees (for example, DOE) would be interested in pursuing the development of site-specific risk-based exemption levels. We seek comments on the site-specific risk-based variance approach, and the types of guidance documents needed by EPA for site-specific risk modeling. We also seek comments on whether this approach would be preferred over the proposed conditional exemption.

G . How Did we Conduct our Technical Assessment for the Disposal of Treated Waste at Low-Level Radioactive Waste Disposal Facilities?

Our proposed conditional exemption for disposal relies on the benefit derived from the LDR treatment requirements, and the protection offered by LLRWDFs licensed pursuant to 10 CFR 61. Our evaluation of NRC regulations at 10 CFR 61, NRC technical guidance documents, and NRC or Agreement State licensing requirements for LLRWDFs (see Technical Background Document, Ref. 7) forms the basis of our finding that the NRC or Agreement State disposal requirements per 10 CFR 61, and EPA disposal requirements provide comparable protection for human health and the environment. This finding is based on the following:

- The reduced toxicity and mobility of RCRA hazardous constituents when LLMW or eligible NARM wastes are treated to LDR treatment standards.
- Our analysis of NRC regulation licensing requirements for ''near-surface'' disposal of LLW.
- Protection provided against chemical risks to human health and environment when LLMW or eligible

NARM meets the LDR treatment standards and is disposed of in LLRWDFs subject to 10 CFR 61 regulations and the NRC licensing requirements.

Based on this analysis, we concluded that disposal in a LLRWDF would be protective in lieu of RCRA regulation so long as the waste meets RCRA LDR treatment standards and is disposed at a facility meeting the NRC or Agreement State low-level waste disposal regulations according to 10 CFR 61.

The following sections discuss our evaluation of low-Level waste disposal requirements of LLRWDFs, licensed by NRC, for the disposal of LLMW or eligible NARM that has met RCRA LDR treatment standards. For additional discussion, see the Technical Background Document in the RCRA Docket for this proposal. (Ref. 7)

1. How Did We Assess Low-Level Radioactive Waste Disposal Facilities?

We compared low-level mixed waste disposal of hazardous waste in the RCRA Subtitle C program to disposal at LLRWDFs licensed by NRC or an Agreement State. Hazardous waste under RCRA must first be treated according to the LDR treatment standards before the hazardous waste can be placed or managed on the land, and the treated waste continues to be managed as a hazardous waste.

The suitability of disposal of eligible hazardous waste contaminated by LLW or NARM as part of this technical assessment, relies on waste treatment and the placement of waste in an engineered disposal cell meeting the waste disposal facility performance standards specified under 10 CFR Part 61. Our approach recognizes that compliance with LDR treatment standards is integral to the overall protection scheme developed for disposal of eligible hazardous waste contaminated with NRC or Agreement State-regulated radionuclides. In our technical assessment, we also consider disposal facility siting-engineering design-management-control factors that will provide sufficient protection against chemical risks for eligible hazardous waste contaminated by LLW or NARM meeting RCRA LDR treatment standards. In evaluating risks, we considered whether the NRC requirements (10 CFR Part 61) for low-level waste disposal could meet the same general criteria of protection from chemical hazards as a hazardous waste meeting Subtitle C landfill requirements in 40 CFR Part 264. The technical analyses we conducted between RCRA hazardous and low-level waste landfills considered many practices including the following: siting/location, waste packaging/containerization, landfill engineering design, disposal cell/unit management requirements, post-closure care, and institutional controls.

Numerous possible exposure pathways exist based on the combination of sources, exposure medium, exposure routes, and receptor types. For this analysis, we evaluated many possible exposure combinations, selecting the most plausible ones (for example, ground water)based on unit, media, and exposure combinations (landfill ⇻ ground water ⇻ drinking water) and eliminated other pathways based on waste form, unit, and management for example, the least plausible ones (landfill ⇻ overland ⇻ human ingestion).

The proposed requirement of complying with LDR treatment standards and disposal of waste in low-level radioactive waste landfills licensed by NRC or Agreement State were the main factors leading to the elimination of all but groundwater pathways for human exposure. Under the LDR requirements, hazardous waste must meet constituent-based concentrations or technology standards. These requirements result in either reduced constituent concentration, toxicity, and mobility. We believe that the RCRA LDR treatment standards for LLMW or eligible NARM waste and the NRC or Agreement State requirements for LLW disposal including the limit on liquid content of LLW disposal in LLRWDFs, chemical compatibility requirements for disposal, and cover system minimizes the possibility of leaching, volatilization, and gaseous diffusion. In addition, containerization of low-level waste (the waste form and structural integrity requirement of NRC or Agreement State) inhibits leachate generation, particle air dispersion, and run on-runoff from landfill. Also, NRC or Agreement State siting requirements restrict siting of disposal facilities at locations where presence of onsite water bodies and off-site groundwater and surface water connectivity would be of concern.

2. What Was the Technical Assessment we Conducted?

a. *Which low level waste disposal facilities were considered for this analysis?*

Our technical assessment analyzed five disposal facilities under NRC or Agreement State or Agreement State regulation that could be candidates for accepting LLMW or eligible NARM which meets the LDR treatment standards:

- The Chem-Nuclear Systems disposal site in Barnwell, South Carolina (available to all States except North Carolina and those belonging to the Northwest and Rocky Mountain Compacts).
- The U.S. Ecology disposal site in Richland, Washington (available to States in Northwest Compact and Rocky Mountain Compact).
- The Envirocare disposal facility in Clive, Utah (commercial facility not belonging to any Low-Level Waste Compact).
- The U.S. Ecology disposal facility in Ward Valley, California (future site for states in Southwest Compact).
- The Hudspeth County, TX facility in Sierra Blanca, Texas (future site for Texas Compact).
- The disposal status at the last two facilities is currently uncertain. However, as part of our technical assessment, we evaluated them along with the three existing licensed low-level waste disposal facilities.

b. *How were the sites evaluated?*

We evaluated these sites using technical and administrative criteria. The administrative criteria include NRC regulations, guidance, and actual license conditions for site operation and management. The technical portion of the analysis considered climatological, geological, and soil properties. In addition to the site environmental properties, they were also evaluated for siting, landfill unit engineering and construction criteria, closure, and institutional post closure controls (Ref. 7).

i. Are the locational requirements comparable between EPA and NRC regulations?

The locational requirements between RCRA and NRC are generally comparable, with NRC being more restrictive in specific areas. Both programs have very similar restrictions for seismic areas and flood plains. The NRC also bans location of disposal facilities in environmentally sensitive locations, such as wetlands and coastal high hazard areas (10 CFR 61.50(a)(5)). The NRC does mandate restrictions for ground water surface water connectivity on-site and potential restrictions on off-site surface water impact from either ground water connectivity or overland mechanisms (10 CFR 61.50(a)(8)). The NRC also ensures that the disposal facility should not exploit natural resources that would result in not meeting performance objective (for example, potable ground water). The NRC required performance analysis of the disposal site for radiation hazards

factors in: presence of a receptor, duration of transport, and dose to the receptor. The NRC also requires the ability to characterize, monitor, and model the facility (10 CFR 61.50(a)(2)) leading to avoid siting of a disposal facility in areas of complex subsurface geology (e.g. active karst or fractured rock).

ii. Are the treatment and liner/container requirements comparable between EPA and NRC?

In general, the treatment and container requirements are comparable between RCRA and NRC. LLW that is Class A waste must be stabilized according to 10 CFR 61.56(b). NRC also requires that the Class A waste be treated to reduce the potential hazards from the non-radiological constituents to the maximum extent practicable (10 CFR 61.56(a)(8)). These requirements are similar to RCRA hazardous waste treatment requirements applicable to some hazardous waste streams (for example, metal-containing waste, and macro/micro encapsulated debris). Also, as noted earlier, RCRA requires that hazardous waste be treated to LDR treatment standards before the hazardous waste can be landfilled. Both NRC and EPA restrict the liquid content of the waste destined for disposal in landfills. The NRC restricts the free liquid contents to 1% by volume or less. The EPA regulations require use of a specified test showing that under the specified pressure, there is no visible sign of liquid release.

In some instances, the NRC is more restrictive by requiring disposal of waste as containerized waste. NRC regulations require that waste be packaged such that waste form and structural integrity be maintained until the Class A radionuclides decay. However, except for liquid waste disposal, EPA does not require containerization of waste. NRC container requirements require that steel drums or high-integrity containers (HICs) be used to store and dispose LLW and must meet the American Society of Testing Methods (ASTM) performance requirements related to, among other things, structural integrity and resistance to corrosion. In addition to minimizing contact with water, NRC requires disposal of a containerized waste in a disposal cell. RCRA does not require disposal of hazardous waste as containerized waste. However, RCRA requires that landfills be constructed with a double liner and leachate system that at least include a 3-foot thick (91cm) 1×10^{-7} permeability lower liner soil component, and requires that the cover be no more permeable than the landfill's liner system. These RCRA requirements would likely achieve the purpose of the NRC containerization requirements to prevent contact between waste and water and to reduce the potential generation of waste leachate.

iii. Are the landfill design requirements comparable between EPA and NRC regulations?

EPA and NRC take different approaches to landfill design. While EPA relies on prescriptive regulations for cover and liner design and construction, NRC relies heavily on the performance requirements of its cover system, containerization, and environmental setting. The NRC mandate requires that the engineered landfill design system integrates both the site properties (climate, soil geology) along with the performance of the cover system. This integration grants flexibility to the final engineering design, resulting in site-specific landfill unit designs. The integrated disposal systems might include concrete vaults (especially in humid environments of the country—for example, Chem-Nuclear facility at Barnwell, SC) which have a thick cover that might include geo-materials or even a liner. Overall, our analyses indicated a grouping of the cover systems by their performance and that the Subtitle C and LLRWDF engineered systems are comparable (Ref. 7).

NRC requires that the landfill be designed to limit human exposure to a specified level of radioactivity. Unlike RCRA, NRC does not set detailed design specifications for liners, covers, or monitoring in order to prevent releases to groundwater. Instead, AEA landfills are designed to provide assurance that concentrations of radioactive material which may be released to ground water, surface water, air, soil, plants, or animals must not result in exposures to humans above specified health-based levels (10 CFR 61.41). NRC has landfill performance requirements which include that the landfill must be designed to limit human exposure to a specified level of radioactivity and intrusion by humans and animals (10 CFR 61.14(b)). Unlike RCRA, NRC does not set detailed design specifications for liners, covers or monitoring in order to detect and mitigate releases to groundwater. Instead, LLRWDFs are designed to provide assurance that concentrations of radioactive material which may be released to the general environment in ground water, surface water, air, soil, plants or animals must not result in exposures to humans above specified health-based levels (10 CFR 61.41).

RCRA has certain minimum technical design requirements for landfill covers and liners. These requirements were established to help ensure that disposal requirements of hazardous wastes would limit potential human exposure to hazardous constituents and provide for protection of human health and the environment (3004(a)). For example, RCRA requires that the liner system be composed of an upper liner component such as a geomembrane, a 3 foot thick (91cm) 1×10^{-7} permeability lower liner soil component, and a double leachate collection systems between these liners (40 CFR 264.301(c)), and that the cover be no more permeable than the landfill's liner system (40 CFR 264.310(a)(5)). Because the cover can be no more permeable than the liner, RCRA requires that the cover will at least be of a 3-foot thick layer with 1×10^{-7} permeability.

Some of the chemical constituents in LLMW or eligible NARM could have physical/chemical properties indicating a high potential for mobility in the subsurface or in groundwater. While this situation is theoretically possible, our analysis indicates that LDR requirements and NRC waste disposal requirements (and NRC guidance) for minimizing water infiltration through the cap and contact with the waste (10 CFR 61.50(a)(4), 10 CFR 61.51(a)(4)) will prevent significant releases of chemical constituents from the waste into the groundwater and thus provide for sufficient protection of human health and the environment. The protection of groundwater against chemical releases at LLRWDFs through requirements of this proposed rulemaking is further described below in section v.

iv. How do institutional controls minimize long-term risks?

Post-closure care under RCRA regulations can last for 30 years or more, during which time the ownership of the property remains in private hands. After the post-closure period, the site is available for redevelopment. Under AEA, facility maintains active care for up to 100 years and the facility is in governmental control. The longer active institutional control under AEA should result in better maintenance of the facility and governmental control is a source of long-term control. In some states (for example, New York,) RCRA post closure and financial assurance are required for up to 100 years, much like that required under AEA.

The post-closure monitoring requirements differ between NRC and EPA. RCRA requires that post-closure groundwater monitoring be conducted at all RCRA landfills to assess the potential release of chemical

constituents from the landfill, and that groundwater monitoring be able to allow for the detection of chemical contamination at the point where the constituents could migrate from the landfill to the hydraulically down gradient limit of the landfill which extends down into the uppermost aquifer under the landfill (40 CFR 264.95, 264.97(a)(3)301(c)). NRC also requires that groundwater monitoring be conducted to allow for early detection and mitigation of radiological contamination. However, the regulations are flexible regarding the location of ground water monitoring wells and the extent of the buffer zone surrounding the unit (10 CFR 61.12(b) and 10 CFR 61.53(c)). In practice, ground water monitoring wells are located throughout the facility and not only at the property boundary. The number and exact locations of monitoring wells might not be the same as specified in RCRA (10 CFR 264.95(a)), but they are located in a manner allowing early detection of radionuclides release and appropriate mitigation to provide sufficient protection against contamination of groundwater.

Because the NRC monitoring requirements may only require analyses for radiological constituents (and not for chemical constituents), releases of chemical constituents may not be detected (on-site or off-site). If a joint release of radiological and chemical contamination occurs from an LLRWDF into the groundwater, by the time the radiological release is detected, the chemical release may have traveled farther and be beyond the site boundary, if the chemical constituents are more mobile in the subsurface environment than the radiological constituents. While these situations are theoretically possible, we concluded that the various NRC waste disposal requirements, coupled with LDR requirements would minimize releases of chemical constituents from the waste into the groundwater and thus provide for protection of human health and the environment. The protection of groundwater against chemical releases at LLRWDFs through requirements of this proposed rulemaking is further described below in section v.

v. How is the protection of ground water against chemical release at LLRWDFs addressed in this proposal?

Low-level radioactive waste disposal facilities licensed by NRC or Agreement States are not required to do groundwater monitoring for chemical constituents. These facilities, however, require monitoring of groundwater for release of radionuclides, must report any releases to regulatory agencies, and take action to clean up such releases if of concern.

As discussed above in sections I–iv, low-level radioactive waste disposal facility siting, design, operation and closure are subject to requirements comparable to those for RCRA hazardous waste disposal facilities. Some hazardous waste disposal requirements are more specific than the low-level waste disposal requirements for the potential release of chemical constituents. For example, under RCRA, a double liner and leachate collection system, groundwater monitoring for chemical release, corrective action, and financial responsibility is necessary for hazardous waste disposal. These requirements are not found in NRC regulations. NRC regulations, however, require ground water monitoring, corrective measures, and financial assurance for the disposal of radioactive waste. NRC's facility siting criteria and waste containerization restrictions provide similar outcomes for waste management compared with EPA's requirements for a double liner and leachate collection based on our discussions with NRC and Agreement States. Also, if the radiation hazard becomes a groundwater concern, then the licensed facility must take corrective measures during the operating life of the facility and closure and post-closure care periods. In addition, the disposal facility must provide funds to the regulatory agency overseeing operations of the facility to State to address such concerns once the State becomes responsible for the health and environmental safety at the facility.

In certain instances, 10 CFR Part 61 requirements are stricter (for example, minimizing water/waste contact) thus reducing potential for generation of leachate. Additionally, NRC LLW disposal regulations require that the waste be processed into a form which satisfies the detailed waste characteristics and waste form criteria specified under 10 CFR 61. At a minimum, according to 10 CFR 61.56(a), all wastes disposed at LLRWDFs must be processed into a solid form or packaged in absorbent material ensuring that liquid content of the low-level waste is less than 1.0% by volume found in 10 CFR 61.56(b)(2). A series of technical requirements for these Class B or C LLW, including compressive strength, leach resistance, biodegradation resistance and immersion testing, is found in the NRC Waste Form Technical Position, Revision 1 (January 24, 1991).

We have conducted technical analyses to determine the possibility of a chemical release at the LLRWDFs. We have also conducted a comparison between the drinking water standards and the LDR treatment standards (that is, UTS levels) to determine the potential impact to ground water in the event of a chemical release. Our finding from both analyses indicates that the potential for a chemical release causing a threat to the ground water is not significant. The analysis we conducted was of the screening nature and not all-inclusive for chemical constituents. The analysis was developed for the approximately 90 chemical constituents known to be present in LLMW or eligible NARM waste based on our evaluation of the industry-provided data (Ref. 10). The information is further limited to chemical constituents where values exist for MCL and LDR treatment standards. From the list of 90 MW constituents, 66 have values for MCL and 48 have values for UTS. The constituents lacking UTS values are predominantly pesticides, but also include some chlorinated solvents and inorganics (Ref. 7). We used dilution-attenuation factors (DAFs) to allow for the comparing of waste treatment levels to ground water drinking values. The use of DAFs reflect subsurface transport (for example, advection and dispersion) and fate (for example, sorption on solids and precipitation) phenomena. DAFs were available for 44 of the constituents, with 23 originating from the TC rule and the rest coming from HWIR95 proposal. We used a DAF of 100 for the TC constituents and nationally based values for non-TC constituents from other rulemaking efforts (TC Rule 55 FR 22684, June 1, 1990). We believe that the waste analysis sample population is representative of the mixed waste universe, as identified in the nuclear power industry-provided data , and represents the effectiveness of LDR treatment with regard to the drinking water MCL benchmark. Even though the analysis is not inclusive for all chemicals, the treatment for an identified chemical (for example, incineration of benzene) would be similarly effective for another similar constituent (styrene).

A critical exemption condition under this proposal requires that the LDR treatment standards are met. This requirement will reduce the chemical contents in the waste to a fairly low level. Once disposed, the likelihood of the chemical constituents to leach out to the ground water would be substantially reduced due to the protection provided by treatment and the disposal system.

First, we calculated what the potential concentrations would be in leachate released from LDR treatment standard compliant hazardous waste contaminated by LLW or NARM at LLRWDFs licensed by the NRC or an Agreement State, and assessed what the leachate concentrations would be at receptor wells in the vicinity of these LLRWDFs. We then compared the drinking water standards with the leachate concentrations which we calculated at these receptor wells, and concluded that the potential threat to drinking water would be very low, if any.

Our comparison between the drinking water standard and the leachate concentrations which we calculated for all constituents shows that the two levels compare well (for 75% of 44 constituents the ratio is <1) (Ref. 7). For eight out of 44, the ratio is less than 10, for four constituents (benzo(a)pyrene, ethylene dibromide, hexachlorobenzene, and dioxin), it is greater than 10 and in the case of dibromochloropropane, it is greater than 10, but less than 200. However, based on the mixed waste treatment practices and the available waste volume data (with the LLMW generation rate of 108,000 cubic feet per year), we believe that these constituents with a ratio of greater than 1, are not generally present in these LLMW, and if present the waste volumes are small compared to the quantities of low-level waste disposed of in a disposal cell at LLRWDFs (Ref.7). Furthermore, generally, the volume of the containerized, exempted (solids only) waste disposed at these LLRWDFs licensed by NRC is expected to be quite small relative to the total quantities of containerized LLW that would be disposed in disposal cells at these facilities. (Ref: 7). Therefore, we believe any potential release would be minor.

We evaluated NRC's LLRWDF siting, disposal unit engineering design, containerization requirement, and post-closure care practices. NRC siting regulations require that the disposal site provides long term stability and waste isolation. Final cover requires capping of a disposal unit such that infiltration of rain water and contact of waste with infiltrated water is minimal. The final cover system, consisting of compacted clay, high density polyethylene layer, and a vegetative layer would reduce entry of water into the disposal unit. The requirement for containerization of the waste also controls the potential for waste/liquid contact and subsequent leachate production. In addition, the landfill bottom design promotes short liquid/waste residence time. Thus, the contact of liquid with the waste would be minimal and that would act to minimize any hazardous constituent concentration in the leachate (and hydraulic head—a function of the presence of a water column and its thickness). These requirements significantly reduce the likelihood for potential leachate generation at LLRWDFs licensed by the NRC or Agreement States.

These findings and the technical analysis discussed above led us to conclude that in the unlikely event of a chemical release, subsequent groundwater contamination is not likely to be of significant concern. To further verify our analyses, we discussed with state regulators, in states where the LLRWDFs are located, regarding any past releases from the existing LLRWDFs. Based on our investigation, we understand that there have been no releases of radionuclides, above the regulatory limits, detected in the ground water at offsite, commercial LLRWDFs since 10 CFR 61 has been promulgated in 1982. The LLRWDFs that were operational at that time were required to be upgraded to meet these regulations. Since then, the two low-level waste disposal facilities at Richland, WA and Barnwell, SC (that were operating before the promulgation of the NRC regulations at 10 CFR 61) have been retrofitted, and their licenses have been amended pursuant to 10 CFR 61 required standards. In conclusion, we believe that the disposal of LLMW, meeting LDR treatment standards, in NRC or Agreement State licensed LLRWDFs will not pose a threat to ground water and cause concern for health risks. We recognize that some members of the public may still be concerned about potential chemical releases at LLRWDFs. Therefore, we are soliciting comments on whether we need to consider, as a condition for the exemption, groundwater monitoring for chemical releases. We are also requesting groundwater monitoring data from LLRWDFs.

vi. Why would corrective measures and financial responsibility provisions beyond those under 10 CFR 61 be unnecessary?

We believe NRC's waste form requirements and low-level waste disposal cell design and capping requirements in combination with the condition that the waste meet LDR treatment standards will minimize water entry, leachate generation, and releases. Also, NRC requires corrective measures to address groundwater contamination if of concern. In the event of a release, based on our discussion with an Agreement State, we understand that both the radioactive and chemical components would be remediated because they are mixed together. This is especially true if the concentrations exceed regulatory limits such as safe drinking water levels or other alternate levels. Therefore, we believe that the Agreement States would also require a facility during active life, closure, and post closure phase to be responsive to releases and subsequent health concerns related to chemical constituents. Hence, a ''corrective action'' requirement similar to that required under RCRA Subtitle C is not necessary.

With regard to remediation, NRC's requirements for reporting and taking corrective measures for radiological releases (including mixed waste for the hazardous constituents) specify that a NRC-licensed facility respond to and institute remedial action for a release of radioactive waste. Also, in 10 CFR 61.53(b) a LLRWDF is required to have plans for taking corrective measures. When promulgating the exemption from RCRA Subtitle C for petroleum contaminated media and debris, EPA determined that subjecting contaminated media to RCRA C-based corrective action was not appropriate or necessary because an alternative regulatory program (RCRA Subtitle I) would provide the requisite degree of protection to human health and the environment (55 FR 11836). Our proposal to exempt LLRWDFs that accept exempted waste for disposal from RCRA corrective action requirements is similar to the petroleum contaminated media exemption. Based on our review of NRC corrective requirements for potential radiological releases, including mixed waste, we believe that those NRC requirements for addressing releases associated with mixed waste are adequate. The likelihood of a potential chemical release after the disposal of relatively small quantities of RCRA-exempted waste (especially containing hazardous constituents at or below the LDR treatment levels) of very low concentration is negligible (based on our UTS/MCL comparison) (Ref. 7). We, therefore, would expect imposition of RCRA Subtitle C-type corrective action to be unnecessary.

With regard to financial assurance, the LLRWDFs are financially responsible for clean up of groundwater during operations, if it poses a health threat. In addition, 10 CFR 61 requires LLRWDFs to establish financial assurance that will provide funding for closure and post-closure care. The NRC or Agreement States are unlikely to require clean up of radionuclides alone

in the event of mixed waste contamination. Therefore, we do not believe that additional RCRA-like financial assurance is necessary to address the unlikely event of chemical contamination of groundwater resulting from disposal of the exempted waste at LLRWDFs.

In addition to the NRC-required corrective measures pursued by the LLRWDF or the Agreement State, we retain our broad RCRA authority, specifically, under RCRA 7003. Under this authority, we can bring suit and require the responsible party(ies) to take necessary action. And, under 40 CFR 302.4, we have independent response authority under CERCLA, if a release of a hazardous substance is in excess of a ''reportable quantity.''

We request comment on whether for any reason under this conditional exemption, we should require LLRWDFs to provide RCRA-like financial assurance for cleanup of RCRA hazardous constituents.

vii. What are the uncertainties of our technical analysis?

This section identifies the primary sources of uncertainty associated with the comparative and technical analysis described above, and qualitatively describes how each may influence the results of these analyses. Sources of uncertainty identified in our analyses include the following:

- Much of the data that we used to assess the protectiveness of radioactive waste disposal regulations of NRC and EPA regulations for hazardous waste landfills were not directly measured. For example, we relied on existing reports and waste surveys; no independent field study supported the technical work. Some of the most important and sensitive parameters which we considered in our analyses include those that describe waste composition; waste management practices; and site characteristics. While not specifically addressed in our technical approach, the parameters and exposures considered include physiologic and behavioral exposure characteristics of the receptors; the physical, chemical, and biochemical properties of the hazardous waste contaminants; and toxicological effects indirectly factored in using MCL and DAF benchmarks.
- EPA did not have chemical constituent groundwater monitoring data from wells surrounding LLRWDFs. This information would help us to assess whether chemical constituent releases have occurred at these facilities. While information was available on radioactive constituents, the lack of chemical data results in the inability to evaluate the relationship for fate and transport and the potential risk to receptors for all possible constituent combinations. For example, chemical constituents present could be either more or less mobile than the radioactive constituents present, resulting in either an over-or underestimation of chemical hazards.
- LDR treatment to ground water protectiveness was of the screening nature and not all-inclusive. The information is limited to chemical constituents where values exist for MCL, LDR treatment standards, and DAFs. The gaps in this data for where an MCL, UTS, or DAF does not exist may result in either an overestimation or underestimation of the potential chemical hazard to receptors.
- We did not conduct a quantitative risk-based analysis geared to the sites where disposal may occur. We also did not quantitatively estimate the risk of developing cancer from the potential exposure to chemical contaminants in the waste. The lack of a quantitative risk analysis leads to sources of uncertainty in assessing the most sensitive potential toxicological effects, exposure routes, and constituents of concern within the waste. While our analysis did factor in site-specific data, we did not address future siting of LLRWDFs because of the difficulty of siting new facilities as seen in recent site rejections (for example, Ward Valley in CA, Nebraska site). As a result, our technical analyses might overestimate or underestimate the potential chemical hazard to receptors.
- The technical analysis did not specifically assess risks to sensitive subpopulations and environments. The likelihood that landfills are located in certain environmental areas where constituents might move significantly with groundwater is uncertain. The waste treatment, packaging, waste form requirement, and the existence of physicochemical limitations (e.g., interactions between contaminants and aquifer material), biological and chemical degradability of other constituents that may be present (e.g., sandy or other porous soils), soil organic matter and clay content, soil exchange capacity, dissolved organics or organic acids in the groundwater, competing cations, changes in soil environmental conditions such as organic waste matrix, pH, redox potential or soil solution composition over time, and other physical and chemical characteristics of the ground water and geological medium, might significantly increase/decrease the mobility of chemical constituents in groundwater in the short term (seasonal variation) as well as long term (for example 10,000 years).
- The likelihood that the NRC licensing process will apply more stringent groundwater protection requirements and criteria to mitigate radiological releases to the groundwater is given. With regard to mitigating chemical releases to the groundwater, if any, by the licensing agency we understand that the licensing agency would require remediation of radioactive material in groundwater and work with any other regulatory authorities to ensure that non-radioactive material contamination is also addressed.
- The extent to which State requirements will address some of the key landfill design factors discussed above is uncertain.

There are potentially significant uncertainties regarding whether and how exposure will occur. Also, our comparison between land disposal regulations for NRC and EPA presents simplifications of reality. The different approaches used by the two programs lead to a certain degree of uncertainty in making the comparative analyses used in this study. In addition, the variations in site-specific conditions and implementation of the permit/license are virtually impossible to completely account for when determining protection of human health and the environment. The comparison was intended to approximate real-world conditions and processes, and their relationships. Because of the nature of our technical approach, the analysis we have pursued for this proposal did not include all parameters or equations commonly seen in a detailed risk-based modeling approach. Consequently, the technical approach was based on various assumptions and simplifications, and as a whole could result in either an overestimation or underestimation of the potential comparative protectiveness between the EPA hazardous waste and NRC LLW disposal systems.

3. What Did We Conclude From our Technical Analyses?

We evaluated NRC's LLRWDF siting, disposal unit engineering design, containerization requirement, and post-closure care practices. We found that as a whole these attributes provide comparable protection to that provided by a RCRA hazardous waste landfill. NRC siting regulations require that the disposal site provides long term stability and waste isolation. Final cover requires capping of a disposal unit such that infiltration of rain water and contact of waste with infiltrated water is minimal.

The final cover system, consisting of compacted clay, high density polyethylene layer, and an evapotranspiration (that is, evaporation of water from top layers of cover and water removal by vegetation used as an integral part of the final cover) rate greater than the rate of precipitation would all but eliminate the entry of water into the disposal unit. The requirement for containerization of the waste also limits the potential for waste/liquid contact and subsequent leachate production. In addition, the landfill bottom design promotes short liquid/waste residence time; thus, the contact of liquid with the waste would be minimal, minimizing hazardous constituent concentration in the leachate and hydraulic head (a function of the presence of a water column and its thickness). At the NRC or Agreement State regulated facilities, the likelihood of water and waste contact is highly unlikely and therefore, potential for leachate generation is significantly reduced, thus mitigating the need for a liner and leachate collection. We found many similarities between the two programs (Ref. 7):

- Locational requirements for siting of disposal units;
- Prohibition on the disposal of free liquids;
- Treatment of waste to reduce health hazards;
- Disposal of waste in an engineered landfill; and
- Extended period of institutional control.

There were a few differences between the two programs:

- Hazardous waste landfills must have a liner and leachate collection, while AEA only requires leachate collection;
- Most low-level waste disposal can only occur as containerized waste (in containers with a structural integrity of 100–300 years), while hazardous waste disposal does not specify containers, although the liner could be viewed as a form of containerization;
- Since hazardous waste disposal regulations do not require containerization of solid waste, the potential for particulate emissions exists; and
- NRC-requires institutional control for a minimum of one hundred years under State control; while EPA-requires post closure care for 30 years.

In addition, the adoption and enforcement of both the EPA and NRC regulations by the States tends to make the State programs under both EPA and NRC more protective than the Federal requirements. States generally consider site-specific concerns (such as sensitive populations or the local economy) in the design of their regulations and the implementation of the state programs.

States may also consider site-specific concerns such as protection of surface water, wetlands or endangered species. Thus, a State program may be more stringent than the RCRA federal program or less stringent (depending on the site performance assessment) as allowed under the NRC. As part of the State-implemented conditional exemption, a State may require groundwater monitoring for potential chemical releases or inspect the LLRWDF-generated groundwater monitoring data for detecting releases of radionuclides and use this information as a surrogate or indicator for releases of hazardous constituents with similar fate and transport characteristics.

In conclusion, even though EPA and NRC waste disposal regulations follow different approaches, we believe that both ultimately achieve a high level of protection.

H. Key Stakeholder Issue

In 1995, we published in the **Federal Register**, a notice of proposed rulemaking (referred to as the HWIR95), which, among other things, requested comments on several options for conditional exemption from RCRA Subtitle C management requirements (60 FR 66344; December 21, 1995). One option we suggested (60 FR 66344, 66400–66401) would have exempted mixed waste from Subtitle C hazardous waste disposal regulations if they were treated to meet risk-based chemical constituent concentration levels and were managed in disposal facilities subject to controls imposed under the AEA. In response to the HWIR95 proposal, the Department of Energy (DOE) submitted alternative proposals for our consideration, which would have allowed certain treated mixed wastes generated by DOE to be conditionally exempted from RCRA Subtitle C hazardous waste disposal requirements, if such mixed wastes were disposed in a DOE self-regulated LLRWDF. Several State RCRA Agencies and Attorneys' General expressed concern over DOE's proposals, and also were opposed extending the HWIR95 risk-based exit levels to DOE mixed waste (see public comment in RCRA docket in response to the HWIR95 proposal-Ref. 15). In particular, States were concerned that they would no longer have regulatory jurisdiction over DOE's RCRA-exempted radioactive waste once the wastes are disposed in DOE's self-regulated LLRWDF. We encouraged DOE to work with the States to resolve this issue, since States would be the implementing agencies of a proposed RCRA exemption in most cases. The States and DOE held discussions over a period of one year without reaching a resolution. DOE has subsequently suspended the alternative proposals it had submitted. DOE has also been working with the States to discuss its LLMW disposal options and plan LLMW disposal capacities. The planning of DOE's LLMW disposal facilities would eventually provide DOE with relief to its LLMW disposal dilemma.

Given that the issue between the States and DOE was not resolved, we tried in this proposal to provide some regulatory relief to DOE for its LLMW while respecting the States' need to retain oversight of DOE generated LLMW. We are, therefore, proposing to allow the exemption to be applicable to all generators of LLMW or eligible NARM including DOE. However, we limited the disposal of the RCRA-exempted waste to only those LLRWDFs licensed and regulated by NRC or Agreement State. In this way, DOE could utilize the conditional exemption for disposal while the NRC or Agreement State radioactive material control programs would retain the oversight of the RCRA-exempted waste. In addition, commercial LLRWDFs have indicated that they would be willing to consider accepting DOE conditionally exempt waste for disposal, if such acceptance does not conflict with their agreement with the State low-level waste compacts.

VII. Regulatory Impacts

We anticipate that implementation of this rule will result in incremental benefits (from cost savings and risk reductions) and some incremental costs. These costs are expected to be much smaller than the overall benefits of the rule. (Ref. 14 and 17.)

We have based our assessment on the best data available; full references and details are available in the Regulatory Impact Analysis which accompanies today's proposal. We have also assumed that generators will be willing and able to dispose of their waste in LLRWDFs, within the scope of existing limitations on capacity and acceptance criteria.

Significant uncertainties make it unusually difficult to estimate the impacts of this rulemaking. In addition to uncertainties about the quantities of LLMW generated in the U.S. there are also questions about the eventual disposition of these wastes. Although this rulemaking creates opportunities for disposal of much of this waste, these opportunities also depend on as-yet undetermined action by State regulatory

agencies, LLRW disposal facilities, and the generators themselves. These uncertainties and assumptions, however, do not affect the Agency's assessment of positive net benefits stemming from this rule; they only affect the magnitude of that net benefit. To the extent that any generators can take advantage of storage or disposal provisions of this proposal, net benefits will accrue.

Sections A and B below provide further detail on benefits and costs associated with this rule; Section C addresses economic impacts. We base assessment of benefits and costs on a comparison of waste management after implementation of this proposal as a final rule compared with waste management in the absence of this rule.

A. What Are the Regulatory Benefits of This Rule?

In 1990, EPA, NRC and the Oak Ridge National Laboratory conducted a survey of commercially generated low-level mixed waste (Ref. 8). A report of the survey findings was published in 1992 under the title: National Profile on Commercially Generated Low-Level Radioactive Mixed Waste. As stated in the Executive Summary ''The * * * objective of the work was to compile a national profile on the volumes, characteristics, and treatability of commercially generated low-level mixed waste * * * by major facility categories * * * [including] academic, industrial, medical, and * * * government facilities and nuclear utilities.'' Based on this research, and site visits in 1998 (see docket to ANPR), we believe that there are a number of LLMW generators, who could benefit from this proposed regulatory relief. Based on the 1992 Study (which was weighted to develop a statistically valid estimate of the nation) we estimated that the national generation rate of mixed waste was 108,000 cubic feet per year and that 4,000 cubic feet of mixed waste was in storage for various reasons. (Ref. 14 and 17.) Nuclear utilities accounted for roughly 10 percent of the total commercially generated LLMW volume in the United States. ''The industrial category was estimated to be the largest generator and accumulator of mixed waste, with over 36% of the generation and nearly 57% of the storage, of the total mixed waste in the United States in 1990.'' (Ref. 8, p. 40). Based on our discussions with the regulated community, we understand that commercial generators of LLMW have taken a number of steps, including pollution prevention, waste minimization, and source reduction (such as using water-based scintillation cocktails as opposed to the solvent-based formulations), to reduce quantities of LLMW they generate. Also, nuclear power plants have instituted steps for controlling the use of organic solvents (for example, establishing procedures to track quantities of organic solvents purchased, used, and left over/discarded). Therefore, despite industrial growth over the intervening years, we believe that the LLMW volumes generated today would not be much different from those reported in 1992. Some federal facilities also generate LLMW. The total volume of LLMW generated annually by DOE facilities far exceeds the volume generated by the commercial sector.

Benefits from this rule may accrue in the following areas:

- Permitting cost savings: Those generators needing RCRA permits only for storage or treatment of their mixed wastes will save these permitting costs and associated corrective action costs.
- Decay in Storage cost savings: The rule would allow facilities to store certain wastes while their radioactivity decays. These wastes could then be treated and disposed as hazardous waste, which is less expensive than LLMW treatment and disposal. EPA estimates aggregate cost savings from these waste streams will be between $800,000 and $2,600,000 per year.
- Other disposal cost savings: This rule would facilitate disposal of wastes in LLRWDFs, possibly saving between $100,000 and $800,000 each year. EPA has not estimated savings resulting from reduced storage costs.
- Other cost savings: Generators of mixed waste and Federal/state RCRA regulating agencies are expected to save administrative burden and costs because of this regulatory relief.
- Risk Reductions: EPA anticipates that generators will take advantage of relaxed storage restrictions to allow certain LLMW to undergo decay in storage. NRC or Agreement State approves this process which allows certain short-lived radionuclides in these wastes to decay. The remaining decayed waste no longer meets the definition of radioactive under the AEA. Since EPA does not expect these wastes to be treated or handled during the radioactive decay process, waste handlers in treatment and transportation will not be exposed to this radioactivity. This decrease in exposure translates to an unquantified risk reduction, attributable to the relaxed RCRA storage restrictions in this proposed rule.

DOE may also save on transportation and disposal costs, to the extent that they choose to meet the conditions for exemption and dispose of wastes in commercial disposal facilities licensed by NRC or an Agreement State. DOE would not gain permitting or storage cost savings, since these regulations do not currently apply to DOE facilities.

B. What Are the Costs of This Rule?

Generators, who are not meeting regulatory requirements for disposal, may incur some increased spending for treatment and disposal relative to their current costs under RCRA hazardous waste management if this rule is implemented, but not relative to costs of meeting existing RCRA Subtitle C regulations. This is because this rule will open up disposal capacity for wastes which currently do not meet the waste acceptance criteria of the existing LLMW disposal facility. Without this rulemaking, these legacy wastes might simply continue to be stored on site indefinitely, leaving the generators in violation of RCRA permit requirements. These generators would incur not only storage costs, but costs associated with being in violation of RCRA.

Generators taking advantage of disposal exemptions will incur costs to meet notification conditions. EPA has not quantitatively estimated costs of compliance with these notification conditions; but expects these costs to be smaller than the administrative cost savings that accrue to generators under this proposed rulemaking.

Under this rule, there will also be some increased costs to EPA and state agencies overseeing management of mixed wastes. We expect these entities to incur costs associated with notification conditions for generators/treaters of LLMW (that meets the LDR treatment standards); sending their waste for disposal at LLRWDFs and related implementation costs. This will result in a small increase in costs for these regulating bureaus. As a whole, costs to EPA and state agencies are likely to be far lower, since these regulatory agencies will have reduced administrative costs as noted in section A above.

C. What Are the Economic Impacts of This Rule?

By allowing LLMW to be disposed as LLW, this rule may have impacts on the national market for disposal of LLW, although we have not specifically modeled these impacts. The larger the volume to be added to the disposal market, the greater the effects are likely to be. The largest volumes of LLMW potentially to be disposed at commercial LLRWDFs are those generated by the Department of Energy, including wastes from site cleanup/remediation activities.

Overall, we expect aggregate economic impacts to be positive for all

LLMW generators and LLW disposal facilities. Some generators may find increased costs for treating and disposing of wastes which were previously stranded on-site; without the rule, these facilities would incur permitting costs, continuing storage costs, and potentially the costs of being in violation of RCRA. The only possible negative impact may fall upon the single mixed waste disposal facility which currently accepts some LLMW for disposal. By allowing LLRWDFs to dispose of the LLMW that meets Land Disposal Restrictions, this rule will introduce some competition into the market for disposal of LLMW. Most of the wastes affected by this proposed rule, however, are unlikely to have been disposed at the existing facility (see the Regulatory Impact Analysis for complete explanation. Ref. 14 and 17).

VIII. State Authorization

As of December 1998, a total of 40 states and one territory were authorized for implementing RCRA mixed waste regulations. In States (and territories) that have not received final authorization to implement the RCRA program, the final rule would apply upon the effective date. Since this rule is not being promulgated under HSWA statutory authority, it would not apply under RCRA in States with final authorization until those States amend their laws and become authorized for it. Moreover, because this rule will likely be considered less stringent than the current RCRA program (since the proposed rulemaking suggests some additional flexibility for disposal or permitting), States will not be required to adopt it.

We, however, encourage States to adopt this conditional exemption. The conditional exemption provides a regulatory enforcement mechanism for States to bring against generators who may be out of compliance with the conditions. Under this regulatory framework, States would retain their regulatory oversight and RCRA enforceability provisions over the non-compliant claimant. A LLMW generator not meeting the conditions for exemption from hazardous waste storage requirements and those for exemption from the definition of hazardous waste when LLMW disposal occurs at LLRWDFs licensed by the NRC or an Agreement State may be subject to the penalties under the RCRA hazardous waste enforcement program.

If States where LLRWDFs licensed by the NRC are located (for example, South Carolina, Utah, and Washington) have concerns regarding post-disposal releases of hazardous constituents in LLMW, these States could address these concerns when adopting this rule. (See Section 3009 of RCRA.) A State may add a requirement for ground water monitoring for potential chemical releases, or use the LLRWDF-generated groundwater monitoring data for release of radionuclides as surrogate or indicator data for releases of hazardous constituents with similar fate and transport characteristics.

IX. Relationship With Other RCRA and Environmental Programs

A. What is the Relationship of This Proposal With Other RCRA Regulatory Programs?

Below, we discuss how this proposed rule would affect other relevant RCRA regulatory programs.

1. Does This Proposal Change How You Determine if a Waste is Hazardous?

No, the proposed rule is a conditional exemption from the RCRA definition of hazardous waste. It does not change the general requirements to determine if a waste is hazardous. Under current RCRA regulations, if you generate a solid waste, you must first determine if it is a hazardous waste as outlined in 40 CFR 262.11, Hazardous Waste Determination. A generator of LLMW must also determine if the waste is excluded from regulation under 40 CFR 261.4, Exclusions. Next, a generator must determine whether the waste meets the regulatory description for a listed hazardous waste in subpart D of part 261, Lists of Hazardous Wastes. If the waste is not a listed hazardous waste, the generator must then determine if the waste exhibits a characteristic defined in subpart C of part 261.

LLMW that meets the LDR definition of non-wastewaters and exhibits toxicity characteristic must be treated to meet the LDR treatment standards and decharacterized to meet the TC regulatory limits at § 261.24 before it can exit RCRA Subtitle C and be disposed of as a nonhazardous solid waste. Under the proposed conditional exemption addressing disposal of LLMW, LLMW that is a TC waste must be treated to meet the LDR treatment standards, but not the TC regulatory limit in instances where the TC limit is lower than the LDR treatment level.

2. Can a LLMW or Eligible NARM be a Non-Hazardous Waste Under this Proposal?

LLMW or eligible NARM meeting the LDR treatment standards in a ''pure untreated form'' (that is, as generated waste) would be a conditionally exempt non-hazardous waste under this proposal. For the waste to maintain a non-hazardous waste status, the generator must meet all the other conditions for exemption proposed today.

3. How Will the RCRA-Exempted Waste Differ From Wastes Delisted per 40 CFR 260.22?

The evaluation criteria used for delisting vary from today's proposal to conditionally exempt LLMW or eligible NARM from the RCRA definition of hazardous waste. In today's proposed conditional exemption the evaluation criteria are national and categorical. This contrasts with the evaluation criteria for delisting which are based upon a designated waste stream and are case specific. In delisting, we evaluate the processes generating a specific waste stream to determine the constituents likely to be present, as well as the potential variability in the waste.

4. Will My Waste Analysis Plan of My RCRA-Permitted TSDF Change?

No, if you are an owner or an operator of RCRA-permitted or interim status TSDF, also licensed by the NRC for managing LLW, and plan to claim a conditional exemption, you remain subject to the waste analysis and waste analysis plan requirements of part 268. DOE treatment facilities treating LLMW to meet the proposed conditions for exemption are also subject to the waste analysis and waste analysis plan requirements of part 268.

If you are not a RCRA-permitted hazardous waste treatment facility and elect to employ the proposed exemption procedures following promulgation of a final LLMW rule, you must submit a RCRA part B permit application.

5. Will the Proposed Rule Change How the RCRA Closure Requirements Apply to My Disposal Facility?

If you're a disposal facility subject to NRC regulations for disposal of LLW and you accept conditionally exempt LLMW the hazardous waste facility closure requirements do not apply. If, however, it has been determined that your disposal unit received RCRA-exempt mixed waste from a generator who has violated the conditions for exemption, the disposal cell where the exempted waste has been placed for permanent disposal may become a RCRA regulated Subtitle C unit subject to the requirements of 40 CFR parts 264 or 265, including closure requirements, until you completed clean closure of the unit or unless all of the wastes in the unit were delisted. You would normally be required to complete closure

activities within 180 days after receiving the final volume of hazardous waste. (See Time Allowed for Closure in 40 CFR 264.113(b) and 265.113(b).) However, RCRA closure requirements would allow you to delay closure of your waste management units, while continuing to receive the RCRA-exempted low-level mixed waste, if you meet certain conditions. (See ''delay of closure'' options at 264.113(d) and 265.113(d).

We believe that the availability of a delay-of-closure option provides much of the flexibility needed to allow for the uninterrupted management of exempt waste, while providing assurance that the protections afforded by the closure regulations for RCRA Subtitle C units, such as evaluation of soil and groundwater at closure, are not lost.

To minimize applicability of RCRA hazardous waste management requirements, owners/operators of a NRC or Agreement State licensed LLRWDF may consider some precautionary measures. For example, you may require LLMW generators to provide you with any documentation (e.g., test results, process knowledge) that the generators have used to make their LDR determination. Alternatively, you may require LLMW generators to provide a representative LLMW sample for independent waste testing and analysis to verify that the waste indeed meets the LDR treatment levels. This would assist you to assure that a LLMW generator has not mis-characterized the waste and/or to document compliance with exemption requirements in the event a RCRA program agency exercises its enforcement authority with regard to your facility.

6. How Does the Conditional Exemption Relate to RCRA Air Emission Standards?

Under this proposal LLMW or eligible NARM meeting LDR treatment standards is not likely to release volatile air emissions. Thus, it would be exempt from RCRA Subtitle C regulations, including the air emission standards. Once a LLMW or eligible NARM is no longer regulated as hazardous, any unit in which the waste is managed (assuming no other hazardous waste management in that unit) is no longer subject to RCRA Subtitle C regulations, including 40 CFR Parts 264 and 265, Subparts AA, BB, and CC.

B. What is the Relationship of this Rule to Other Environmental Programs?

1. How are CERCLA Actions Affected by this Proposal?

The affect of today's proposed regulations on Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) actions depends on whether the waste will be managed on or off the CERCLA site. Off-site disposal of CERCLA remediation waste must comply with all conditions of today's proposal to take advantage of the exemption provided. These wastes must go to a LLRWDF that is in compliance with the 10 CFR Part 61 regulations and is licensed by the NRC or Agreement State.

Management of mixed waste during on-site remediation waste must meet all applicable, or relevant and appropriate requirements of Federal or State environmental laws or justify a waiver from those standards. This proposal requires that the disposal facility be licensed and overseen by the NRC or Agreement State. On-site CERCLA response action must comply with the substantive provisions of environmental regulations and standards, but not the administrative provisions. As such no permit or license is required for on-site activities. In accordance with the National Contingency Plan and the statute, today's proposed regulation is not expected to be an applicable requirement at most CERCLA sites managing LLMW. However, relevant and appropriate determinations are a site-specific determination and these may or may not be deemed relevant and appropriate given site-specific conditions. In general, we expect that most CERCLA sites will meet both the substantive provisions of the RCRA Subtitle C landfill requirements as well as the 10 CFR 61 requirements for a LLRWDF.

2. How Might Clean Air Act Regulations be Affected?

This rule will not affect Clean Air Act regulations. LDR treatment of LLMW or eligible NARM remains subject to the air emission standards applicable to hazardous waste treatments under RCRA.

3. How Might Clean Water Act Regulations be Affected?

This rule will not affect Clean Water Act regulations. Any water discharges from LDR treatment of LLMW or eligible NARM remain subject to water discharge standards applicable to hazardous waste treatment under RCRA.

X. Regulatory Assessment Requirements

A. Executive Order 12866: Determination of Significance

Under Executive Order (E.O.) 12866, (58 FR 51,735 (October 4, 1993)) the Agency must determine whether the regulatory action is ''significant'' and therefore subject to OMB review and the requirements of the Executive Order. The Order defines ''significant regulatory action'' as one that is likely to result in a rule that may: (1) have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that this rule is a ''significant regulatory action.'' While this notice of proposed rulemaking establishes few regulatory requirements, it could ultimately result in a rule that would satisfy one or more of the remaining criteria. Therefore, this action is a ''significant regulatory action'' under the terms of E.O. 12866. As such, this action was submitted to OMB for review. Changes made in response to OMB suggestions or recommendations will be documented in the public record.

Under the terms of E.O. 12866, EPA is to prepare for any significant regulatory action an assessment of its potential costs and benefits. If that action satisfies the first of the criteria listed above, this assessment must include, to the extent feasible, a quantification of these costs and benefits, the underlying analyses supporting such quantification, and an assessment of the costs and benefits of reasonably feasible alternatives to the planned regulation. This proposed rulemaking is expected to yield net benefits to society, because of reduced waste management and administrative costs for both generators of mixed waste and regulatory agencies, and reduced worker exposures. A summary description of costs and benefits associated with this proposal appears in section VII. An initial regulatory impact analysis has been prepared and is available in the docket for today's proposed rulemaking. EPA is requesting comment on the costs and benefits of any of the possible regulatory changes discussed in this proposed rulemaking, as well as on appropriate methodologies

for assessing them. We would like to hear from States, Tribes, members of the public, and the regulated community.

B. Executive Order 13132: Federalism

Executive Order 13132, entitled ''Federalism'' (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure ''meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.'' ''Policies that have federalism implications'' is defined in the Executive Order to include regulations that have ''substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.'' Under Executive Order 13132, EPA may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or EPA consults with State and local officials early in the process of developing the proposed regulation. EPA also may not issue a regulation that has federalism implications and that preempts State law unless the Agency consults with State and local officials early in the process of developing the proposed regulation.

If EPA complies by consulting, Executive Order 13132 requires EPA to provide to the Office of Management and Budget (OMB), in a separately identified section of the preamble to the rule, a federalism summary impact statement (FSIS). The FSIS must include a description of the extent of EPA's prior consultation with State and local officials, a summary of the nature of their concerns and the agency's position supporting the need to issue the regulation, and a statement of the extent to which the concerns of State and local officials have been met. For final rules subject to Executive Order 13132, EPA also must submit to OMB a statement from the agency's Federalism Official certifying that EPA has fulfilled the Executive Order's requirements.

This proposed rule will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government as specified in Executive Order 13132, because it will not impose any requirements on States or any other level of government. As explained above, today's proposal would provide regulatory flexibility for generators and treaters of Low Level Mixed Waste by establishing a conditional exemption from RCRA Subtitle C requirements, which States would not be required to adopt. Thus, the requirements of section 6 of the Executive Order do not apply to this rule.

C. Executive Order 12898: Environmental Justice

Under Executive Order 12898, ''Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations'' as well as through EPA's April 1995, ''Environmental Justice Strategy, OSWER Environmental Justice Task Force Action Agenda Report'' and National Environmental Justice Advisory Council, EPA has undertaken to incorporate environmental justice into its policies and programs. EPA is committed to addressing environmental justice concerns, and is assuming a leadership role in environmental justice initiatives to enhance environmental quality for all residents of the United States. The Agency's goals are to ensure that no segment of the population, regardless of race, color, national origin, or income, bears disproportionately high and adverse human health and environmental effects as a result of EPA's policies, programs, and activities.

To address this goal, EPA considered the impacts of this proposed rulemaking on low-income populations and minority populations. EPA believes that due to low estimated waste volumes stored under the storage exemption, any potential risk resulting from this proposal would be very small. In addition, this waste would be stored according to another regulatory authority (NRC) which offers comparable protection. Under the disposal proposal, the exempted waste would be disposed following NRC regulations which provide comparable protection and low risk. The Agency does not currently have data on the demographics of populations surrounding facilities which generate low-level mixed waste that potentially could be affected if today's proposed rule were finalized. However, we believe that the LLMW generators storing the waste and the LLRWDFs do not appear to be concentrated in areas where the minority or the disadvantaged groups reside. Therefore, we believe there would not be disproportionately high and adverse environmental or economic impact on any minority or low-income group, or on any other type of affected community. Any minority group or low-income group affected by alternatives described in this proposed rulemaking has an opportunity to review and comment on the proposal.

D. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

Protection of Children from Environmental Health Risks and Safety Risks (62 FR 19885, April 23, 1997) applies to any rule that: (1) is determined to be ''economically significant'' as defined under E.O. 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This proposed rulemaking is not subject to E.O. 13045 because it is not an economically significant rule as defined by E.O. 12866. We do not expect this rule to disproportionately affect children because we do not expect children to be entering LLMW storage areas which are locked and have limited access requirements imposed by NRC. Similarly, disposal facilities must meet NRC regulations for public safety thus reducing the likelihood of exposure of the nearby population including children.

E. Executive Order 13084: Consultation and Coordination With Indian Tribal Governments

Under E.O. 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or EPA consults with those governments. This order requires EPA to provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, E.O. 13084 requires EPA to develop an effective process that permits elected officials and other representatives of Indian tribal governments ''to provide

meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities.'' Today's proposal does not significantly or uniquely affect the communities of Indian tribal governments. There is no impact to tribal governments as the result of generator's choosing to claim a conditional exemption for storage units containing low-level mixed waste. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

F. The Regulatory Flexibility Act as Amended by the Small Business Regulatory Enforcement Fairness Act of 1996

Pursuant to the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996) whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions). However, no regulatory flexibility analysis is required if the head of an agency certifies the rule will not have a significant economic impact on a substantial number of small entities.

SBREFA amended the Regulatory Flexibility Act (RFA) to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have a significant economic impact on a substantial number of small entities. EPA has examined this proposed rulemaking's potential effects on small entities as required by the Regulatory Flexibility Act and has determined that this action will not have a significant economic impact on a substantial number of small entities. The overall economic effect of this regulation has been determined to be a net savings to all regulated entities who choose to avail themselves of a conditional exemption for storage or disposal of the mixed wastes they generate. Since this rule will not impose additional costs on any entities, I hereby certify that this rule will not have a significant economic impact on a substantial number of small entities. This rule, therefore, does not require a regulatory flexibility analysis.

G. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), P.L. 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under § 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''Federal mandates'' that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, § 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of § 205 do not apply when they are inconsistent with applicable law. Moreover, § 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under § 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements. The UMRA excludes from the definition of ''Federal private sector mandate'' duties that arise from participation in a voluntary federal program and also generally excludes from the definition of ''Federal intergovernmental mandate'' duties that arise from participation in a voluntary federal program. The Agency's analysis of compliance with the Unfunded Mandates Reform Act (UMRA) of 1995 found that the proposed rulemaking imposes no enforceable duty on any State, local, or tribal governments or the private sector. Thus, today's proposal is not subject to the requirements of § 202 and § 205 of UMRA.

H . National Technology Transfer and Advancement Act of 1995

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (''NTTAA''), Pub L. No. 104–113, § 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (for example, materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards. This proposed rulemaking does not involve technical standards. In 1997, EPA in cooperation with NRC developed a testing guidance for sampling and testing of mixed waste. Facilities subject to this rulemaking may continue to use that guidance which allows analysis of smaller samples, thus reducing exposure of workers to radiation hazards.

I. Paperwork Reduction Act

Under the implementing regulations for the Paperwork Reduction Act, an agency is required to certify that any agency-sponsored collection of information from the public is necessary for the proper performance of its functions, has practical utility, is not unnecessarily duplicative of information otherwise reasonably accessible to the agency, and reduces to the extent practicable and appropriate the burden on those required to provide the information (5 CFR 1320.9). Any proposed collection of information must be submitted, along with this certification, to the Office of Management and Budget for approval before it goes into effect.

The information collection requirements in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB) under the *Paperwork Reduction Act*, 44 U.S.C. 3501 *et seq.* An Information Collection Request (ICR) document has been prepared by EPA (ICR No. 1922.01) and a copy may be obtained from Sandy Farmer, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2137); 401 M St., S.W.; Washington, D.C. 20460 or by calling (202) 260–2740.

This information collection is required to provide documentation of conditional exemption from RCRA Subtitle C requirements. The exemptions from RCRA Subtitle C under today's proposed action would require no government approval before being effective. As such, information collection, maintenance and reporting issues are especially important due to the self-implementing nature of this action. Successful implementation of

today's proposal will depend upon the documentation, certification and verification provided by the information collection.

The general authority for this proposal is § 2002(a), 3001, 3002, 3004, 3006 and 3007 of the Solid Waste Disposal Act of 1970, as amended by the Resource Conservation and Recovery Act of 1976 (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA), 42 U.S.C. 6912(a), 6921, 6922, 6924, and 6926. To the extent that this rule imposes any information collection requirements under existing RCRA regulations promulgated in previous rulemakings, those requirements have been approved by the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, and have been assigned OMB control numbers 2050–0009 (ICR no. 1573, Part B Permit Application, Permit Modifications, and Special Permits); 2050–0120 (ICR 1571, General Facility Hazardous Waste Standards); 2050–0028 (ICR 261, Notification of Hazardous Waste Activity); 2050–0034 (ICR 262, RCRA Hazardous Waste Permit Application and Modification, Part A); 2050–0039 (ICR 801, Requirements for Generators, Transporters, and Waste Management Facilities under the Hazardous Waste Manifest System); 2050–0035 (ICR 820, Hazardous Waste Generator Standards); and 2050–0024 (ICR 976, 1997 Hazardous Waste Report).

An Agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR parts 9 and 48 CFR chapter 15. This rule proposes new information collection requirements subject to OMB review under the Paperwork Reduction Act of 1995, 44 U.S.C. 3501 *et seq.* Facilities must notify EPA or the Authorized State of their claim for conditional exemption for a storage unit to be eligible for a conditional exemption for stored low-level mixed waste. If they do not choose to claim a conditional exemption, generators will have to comply with the existing Subtitle C recordkeeping and reporting requirements for the low-level mixed wastes they generate. This rule also proposes notification requirements for generators or treaters of LLMW and eligible NARM seeking a conditional exemption from the definition of hazardous waste which would allow disposal of the waste meeting the conditions for exemption in low-level radioactive waste disposal facilities licensed by NRC or NRC Agreement States. If the generator or treater of LLMW chooses not to claim an exemption, they remain subject to the existing hazardous waste disposal requirements including compliance with LDR treatment standards.

Some of the proposed requirements contained in today's action entail new reporting and recordkeeping requirements for members of the regulated public, if such change is adopted. EPA is interested in comments on any and all aspects of potential paperwork requirements, and in particular on how they should be structured to fulfill the requirements that they have practical utility, are not unnecessarily duplicative of other available information, and are the least burdensome necessary to ensure that the disposal of conditionally exempted low level mixed waste is safely managed.

If generators choose to avail themselves of the regulatory flexibility discussed in this proposal, they will be subject to notification and recordkeeping requirements described above. However, such notification and recordkeeping would replace the paperwork burden required for treatment and storage permits for their low-level mixed wastes if they did not claim a conditional exemption. States (but not Tribes) would have additional recordkeeping requirements for generators' claims for conditional exemption notices for storage units, and review of the self-implementing reinstatement notices for generators who fail to meet all the conditions for storing mixed waste and correct any violations.

We have prepared a full Information Collection Request (ICR) in support of today's action. The total annual public burden associated with this exemption is estimated to average 3.6 hours per respondent. The reporting burden is estimated to average 1.9 hours per respondent annually, and includes time for reading the regulations and preparing and submitting notifications. The recordkeeping burden is estimated to average 1.7 hours per respondent annually, and includes the time for recording the results of inventories and inspections and maintaining records pertaining to the mixed waste exemption.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

Comments are requested on the need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques. Send comments on the ICR to the Director, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2137); 401 M St., S.W.; Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th St., N.W., Washington, DC 20503, marked ''Attention: Desk Officer for EPA.'' Include the ICR number in any correspondence. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after November 19, 1999, a comment to OMB is best assured of having its full effect if OMB receives it by December 20, 1999. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

XI. List of Comments Being Requested By EPA in This Proposal

In this proposal, we are seeking comment on several issues that concern stakeholders potentially affected by this rule, and the public. Please note, even if you commented on the Advance Notice of Proposed Rulemaking (64 FR 10063–73, March 1, 1999), EPA is seeking your comments on this proposal. Even if you submitted comments on the March 1, 1999 ANPR, you must submit comments on this revised and expanded proposal by the deadline listed above in order to have your comments considered for this proposed rulemaking. Below, we provide a list of these comment requests, cross-referenced with the applicable section of the proposal.

Storage

—We seek comment on ways we propose to address the issue of dual regulation of LLMW storage, treatment, transportation, and disposal. (III.A.)

—We would appreciate comments regarding the standard to use for determining when the decayed waste

would reenter RCRA Subtitle C management. (V.A.1.)

—We invite comment on whether a time limit may be appropriate, and, if so, on what basis that time limit might be established. (V.A.2.)

—We invite comment on how waste being stored for decay under 10 CFR 20.2001(a)(2) and 10 CFR part 35 can be completely decayed while at the same time reenter RCRA Subtitle C without a gap in time during which the waste is not regulated as either a hazardous or radioactive. Please indicate in your comment what mixed wastes you generate that have radionuclides with activity levels which would not qualify for the conditional exemption we are proposing if it were based on whichever occurred first— ten half-lives of decay or not registering above background levels. Also indicate how this limitation would affect your management of the waste. (V.A.2).

—We seek comment on whether this condition should be: broad (and include the loss of the exemption if any LLW storage requirement of the NRC or Agreement State license is not met); or more specific (and limit the loss of the exemption to those violations which may result in an environmental impact). (V.B.2.(b))

—We request comment regarding both the definition of ''on-site'' and the appropriateness of extending a conditional exemption to facilities that own/operate storage facilities that do not meet our current definition of ''on-site.''(V.B.2.(c))

—We also seek comment on whether the conditional exemption should include a storage facility which serves as a consolidation point for single entity. (V.B.2.(c))

—We request comment on whether we should include in the conditional exemption for storage those mixed waste treatment facilities that manage wastes from other generators. (V.B.2)

—We are interested in additional information regarding the safety of commercial TSDFs that could provide a basis for expanding the scope of the exemption to include off-site storage at commercial TSDFs. (V.B.2)

Disposal

—We are seeking comment and supporting information concerning the applicability of this proposal to hazardous waste contaminated with NARM. (VI.B.1)

—We are seeking comment on whether to provide for a 90-day waiting period during reclaiming of an exemption. (VI.D.4)

—We request comment on whether, for any reason, this conditional exemption should apply only to hazardous soils contaminated with radioactive waste and treated to LDR standards derived from the original waste codes, rather than to soils treated to alternative soil treatment standards. (VI.E.1)

—We are asking for public comments on the approach of a state approved site-specific, risk-based alternative to allow the disposal of hazardous waste contaminated with radioactivity in any LLRWDFs including DOE's LLRWDFs. (VI.F.)

—We seek comments on the site-specific risk-based variance approach, and the types of guidance documents needed by EPA for site-specific risk modeling. (VI. F.)

—We also seek comments on whether this approval would be preferred over the proposed conditional exemption. (VI. F.)

—We are soliciting comments on whether we need to consider, as a condition for exemption, groundwater monitoring for chemical releases. (VI. G.)

—We are requesting groundwater monitoring data from LLRWDFs. (VI. G.)

—We request comment on whether for any reason under this conditional exemption, we should require LLRWDFs to provide RCRA-like financial assurance for cleanup of RCRA hazardous constituents. (VI. G.)

XII. Supporting Documents

1. EPA—Consent Decree. HWIR Settlement Agreement, April 11, 1997.

2. EPA—Side-bar letter to EEI/USWAG dated April 7, 1997.

3. ''Review of Waste Management Practices and Compliance History at Nuclear Power Plants and Other Entities that Generate Low-Level Mixed Waste.'' April 12, 1999.

4. ''Comparison of the EPA's RCRA Requirements and the NRC's Licensing Requirements for the On-site Treatment (In Tanks and Containers) and Storage of Low-Level Mixed Wastes at Nuclear Facilities'', September 30,1999.

5. Comment Summary Document—Approach to Reinventing Regulations of Storing Mixed Low-Level Radioactive Waste; Advance Notice of Proposed Rulemaking (ANPR), September 21,1999.

6. Report to Utility Solid Waste Activities Group and Utility Nuclear Waste Management Group on Comparative Assessment of the Environmental Protection Agency's Regulations for Hazardous Waste Tank Systems (40 CFR part 265, Subpart J) and Comparable Nuclear Regulatory Commission Requirements, July 1988.

7. Technical Evaluation on Document for the Disposal of Mixed Waste at Low-Level Radioactive Waste Disposal Facilities, Draft Technical Background Document, July1999.

8. National Profile on Commercially Generated Low-Level Radioactive Mixed Waste, NUREG/CR–5938, December 1992.

9. Meeting Notes for EPA Meeting with Low-Level Radioactive Waste Disposal Facilities, December 7, 1998.

10. RCRA Hazardous Constituents and Waste Codes Associated with Mixed Waste, December 1997.

11. Joint State/EPA Workshop on Mixed Waste Rulemaking, October 7–9, 1998, Meeting Summary.

12. Comparison of NRC and EPA's Waste Tracking and Related Record Keeping Requirements, July 1999.

13. Technical Alternatives Considered for Evaluating Protectiveness of Low-Level Waste Disposal Facilities, July 21, 1999.

14. Regulatory Impact Analysis: Relief from Regulatory Requirements for Storage and Disposal of Mixed Waste, July 1999.

15. Summary of Public Comments on ''Contingent Management of Mixed Waste'' Submitted in Response to the 1995 HWIR Proposal, July 1999.

16. The Management of Mixed Low-Level Radioactive Waste in the Nuclear Power Industry, NUMARC/NESP–006, Nuclear Management Resources Council, Inc., Washington, D.C., January 1990.

17. Regulatory Impact Analysis: Relief from Regulatory Requirements for Storage and Disposal of Mixed Waste, Background Documents, August 1999.

List of Subjects in 40 CFR Part 266

Environmental protection, Hazardous waste, Reporting and recordkeeping requirements, Waste treatment and disposal.

Dated: October 29, 1999.

Carol M. Browner,

Administrator.

For the reasons set forth in the preamble 40 CFR part 266 is proposed to be amended as follows:

PART 266—STANDARDS FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS WASTES AND SPECIFIC TYPES OF HAZARDOUS WASTE MANAGEMENT FACILITIES

1. The authority citation for part 266 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921,6922, 6924, 6926, 6927, and 6934.

2. Part 266 is amended by adding subpart N to read as follows:

Subpart N—Conditional Exemption for Low-Level Mixed Waste Storage, Treatment, Transportation and Disposal

Terms

Sec.

266.210 What special definitions apply to this subpart?

Storage Conditional Exemption and Eligibility

266.220 What does a conditional exemption for stored mixed waste do?

Subpart N—Conditional Exemption for Low-Level Mixed Waste Storage and Disposal

Terms

§ 266.210 What special definitions apply to this subpart?

This subpart uses the following special definitions:

Agreement State means a state that has entered into an agreement with the NRC under subsection 274b of the Atomic Energy Act of 1954, as amended (68 Stat. 919), to assume responsibility for regulating within its borders source, special nuclear, or byproduct material in quantities not sufficient to form a critical mass.

Eligible NARM means NARM that meets the acceptance criteria of a LLRWDF licensed by NRC or an Agreement State in accordance with 10 CFR part 61 and is contaminated by hazardous waste, and therefore, is eligible for the transportation and disposal conditional exemption.

Facility as defined in 40 CFR 260.10.

Hazardous waste means any material which is defined to be hazardous waste in accordance with 40 CFR 261.3, ''Definition of Hazardous Waste.''

Land Disposal Restriction (LDR) treatment standards means treatment standards, under 40 CFR part 268, that a RCRA hazardous waste must meet before it can be disposed on land in a RCRA hazardous waste disposal landfill.

License means a license issued by the Nuclear Regulatory Commission, or NRC Agreement State, to users that manage radionuclides regulated by NRC, or NRC Agreement States, under authority of the Atomic Energy Act of 1954, as amended.

Low-Level Mixed Waste (LLMW) is a low-Level radioactive waste containing a RCRA hazardous waste component.

Low-Level radioactive waste (LLW) is a radioactive waste containing source, special nuclear, or by-product material which is not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, byproduct material as defined in section 11(e)(2) of the Atomic Energy Act or NARM. (See also NRC definition of ''waste'' at 10 CFR 61.2)

Low-Level Radioactive Waste Disposal Facility (LLRWDF) means a disposal facility licensed by the NRC or an Agreement State for the disposal of low-Level waste.

Mixed Waste means a waste that contains both RCRA hazardous waste and source, special nuclear, or by-product material subject to the Atomic Energy Act of 1954, as amended.

Mixed Waste Treatment Facility means a waste treatment facility permitted by EPA or an Authorized State to treat hazardous waste and licensed by the NRC or an Agreement State to manage radioactive waste.

Naturally Occurring and/or Accelerator-produced Radioactive Material (NARM) means radioactive materials not covered under the AEA that are naturally occurring or produced by an accelerator. The naturally occurring radioactive material (NORM) is defined below. NARM is regulated by the States under State law, or by DOE under DOE Orders.

Naturally Occurring Radioactive Material (NORM), a subset of NARM, refers to materials not covered under the AEA whose radioactivity has been enhanced usually by mineral extraction or processing activities.

NRC means the Nuclear Regulatory Commission. or its duly authorized representative (for example, an NRC Agreement State that regulates management of low-Level waste).

RCRA program agency means EPA, or the state agency authorized to implement the RCRA program.

We, within this subpart, means the EPA, or the EPA Regional Office.

You means a generator, treater, or other handler of low-level mixed waste except for the storage exemption provisions in § 266.220–266.255 where it means only a generator.

Storage Conditional Exemption and Eligibility

§ 266.220 What does a conditional exemption for stored mixed waste do?

A conditional exemption exempts certain low-Level mixed waste from the regulatory definition of hazardous waste in § 261.3 during storage if you, as the generator, have a storage unit and waste which meet specified conditions in §§ 266.225 through 266.255.

§ 266.225 What stored mixed wastes are eligible?

Low-Level mixed waste defined in § 266.210 is eligible for a conditional exemption if managed subject to NRC or Agreement State regulations, and if it is:

(a) Generated at your facility (Mixed waste generated at another facility and shipped to your facility for storage or treatment requires a storage permit and is ineligible for the storage exemption.);

(b) Stored on-site in a tank or container meeting the requirements of your NRC or Agreement State license for storing low-Level waste; and

(c) Stored in compliance with chemical compatibility requirements of a tank or container (See § 264.177, or

§ 264.199 of this chapter), or (§ 265.177, or § 265.199 of this chapter).

§ 266.230 What must you do to qualify for a storage exemption?

You must meet all the following conditions.

(a) Have a valid NRC or Agreement State license.

(b) Comply with the requirements of your license for storing low-Level mixed waste.

(c) Meet the eligibility requirements of § 266.225.

(d) Notify us (EPA) by certified mail, return receipt requested, that you claim a conditional exemption for a storage unit containing low-Level mixed waste. You must notify us of your claim either within 90 days of the effective date of this rule in your State, or within 90 days of when a storage unit is first used to store LLMW for which you claim a conditional exemption.

(e) Certify that facility personnel who manage stored mixed waste have been trained in a manner that ensures that the low-Level mixed waste is safely managed and includes training in chemical waste management and hazardous materials incidence response as outlined in the personnel training standards found in 40 CFR 265.16(a)(3).

(f) Inventory your stored low-level mixed waste at least annually; inspect it at least quarterly for compliance with the other conditions of the paragraph; update your inventory records of conditionally exempt LLMW quarterly; and maintain records for three years after the waste is sent for disposal, or in accordance with NRC requirements, whichever is longer.

(g) Maintain an accurate emergency plan and provide it to all local authorities who may have to respond to an emergency. Your plan must describe emergency response arrangements with local authorities; describe evacuation plans; list the names, addresses, and telephone numbers of all facility personnel qualified to work with local authorities as emergency coordinators; and list emergency equipment. (See 40 CFR part 265, subpart D.)

Treatment

§ 266.235 What waste treatment does this exemption allow?

Allowable treatment of your low-Level mixed waste includes only on-site treatment within a tank or container covered by the provisions of your NRC or Agreement State license. The treatment may include solidification, neutralization, or other forms of stabilization, but excludes thermal treatment, such as incineration.

Loss of Conditional Exemption

§ 266.240 How could you lose your conditional exemption?

(a) The conditional exemption applies only while all the conditions are met. (See § 266.230)

(b) You automatically lose your exemption for failure to meet any of the conditions. (See § 266.230).

(c) You must report to us and the NRC or Agreement State in writing of any failure to meet a condition within 30 days of learning of the failure. If the failure may endanger human health or the environment, you must also notify us, EPA or RCRA program agency orally within 24 hours. Failures that endanger human health or the environment include, but are not limited to, discharge of a CERCLA reportable quantity or other leaking or exploding tanks or containers, or detection of radionuclides or hazardous constituents in the leachate collection system of a storage area. If the failure may endanger human health or the environment, you must follow the provisions of your emergency contingency plan.

§ 266.245 If you lose the exemption, can it be reclaimed?

(a) You may reclaim your exemption if:

(1) You again meet the requirements of § 266.230; and

(2) You send us, the RCRA program agency, a notice that you are reclaiming the exemption. The notice must do the following:

(i) Explain the circumstances of each failure.

(ii) Certify that you have corrected each failure that caused you to lose the exemption and that your waste again meets all the conditions as of the date you specify.

(iii) Demonstrate that each failure is not likely to recur because of specific steps (list them) that you have implemented in your LLMW compliance activities.

(iv) Include any other information you want us to consider when we review your notice reclaiming the exemption.

(b) We may terminate a reclaimed conditional exemption if we find that your claim is inappropriate based on factors such as: you have failed to correct the problem; you explained the circumstances of the violation unsatisfactorily; or you failed to show that the violation is unlikely to recur. In reviewing a reclaimed conditional exemption under this section, we may add requirements to the exemption to ensure and document proper storage to protect human health or the environment.

Record Keeping and Reentry Into RCRA

§ 266.250 What records must you keep besides those required by your NRC or Agreement State license?

You must keep your initial notification records and records of your LLMW inventories and inspections. At a minimum you must inventory waste annually, inspect quarterly, and update your records of conditionally exempt LLMW at least quarterly. You must maintain storage records for three years after the waste is sent for disposal, or in accordance with NRC requirements under 10 CFR part 20, whichever is longer.

§ 266.255 When is your low-Level mixed waste no longer eligible for the Storage Conditional Exemption?

(a) When your LLMW has met the requirements of your NRC or Agreement State license for decay-in-storage and can be disposed of as non-radioactive waste, then the conditional exemption for storage no longer applies. At that point your waste is subject to hazardous waste regulation as ''newly generated'' hazardous waste under the relevant sections of 40 CFR Parts 260–271.

(b) When your waste is transported off-site for any reason other than to a LLRWDF under the Disposal Conditional Exemption at § 266.305, it is no longer eligible for the Storage Conditional Exemption.

Transportation and Disposal Conditional Exemption

§ 266.305 What does the Transportation and Disposal Conditional Exemption do?

The conditional exemption for transportation and disposal gives you—the mixed waste generator, treater, or other handler—an alternate way to manage your low-Level mixed waste. If this waste meets Land Disposal Restrictions treatment standards, and is subject to NRC or Agreement State's transportation, manifest and disposal regulations, it will be exempted from RCRA Subtitle C hazardous waste manifest, transportation and disposal regulations. Currently, low-Level mixed waste meeting LDR treatment standards must be managed in accordance with both NRC or Agreement State's and RCRA Subtitle C's transportation, manifest and disposal regulations. To obtain and keep the Transportation and Disposal Conditional Exemption, you must meet all conditions under the Transportation and Disposal Conditional Exemption at all times.

§ 266.310 Is your waste eligible for the Transportation and Disposal Conditional Exemption?

To be eligible for this exemption, your waste must be:

(a) A low-Level radioactive waste, or NARM waste as defined in § 266.210 which meets the acceptance criteria of a LLRWDF licensed by the NRC or an Agreement State in accordance with 10 CFR part 61; and

(b) A RCRA hazardous waste as defined in 40 CFR 261.3.

§ 266.315 What are the conditions you must meet?

You must do the following to obtain and keep the Transportation and Disposal Conditional Exemption:

(a) Meet and continue to meet LDR treatment standards per § 266.320.

(b) Have received written confirmation that you have notified the designated regulatory agencies of the exemption per § 266.325(a), § 266.330(a), and § 266.340.

(c) Even if you self-regulate under the Atomic Energy Act, you must manifest and transport the waste according to NRC regulations per § 266.345.

(d) Ensure the exempted waste is containerized per § 266.360, and disposed at a designated LLRWDF per § 266.355.

(e) Keep and submit records of the exemption as required under § 266.365, and § 266.370.

Treatment Standard For Disposal

§ 266.320 What treatment standard must your waste, either as-generated or treated, meet?

Your LLMW or eligible NARM must meet, or be treated to meet, LDR treatment standards specified in §§ 268.40–268.49 of this chapter. The waste must also meet RCRA definition of non-wastewater as specified in 40 CFR 268.2(d) of this chapter prior to disposal.

Notification, Transportation and Manifest

§ 266.325 Before shipping exempt waste, whom must you notify?

(a) You must notify the following parties, in writing, every time you intend to claim an exemption for a newly generated waste stream (a waste stream whose RCRA hazardous waste codes differ from those of the previously claimed waste streams):

(1) The RCRA program agency (EPA or state) regulating your low-level mixed waste activities;

(2) The RCRA program agency (EPA or state) in the state where the LLRWDF is located; and

(3) The NRC or Agreement State regulating the LLRWDF where the waste will be disposed.

(b) You must also notify the LLRWDF receiving your waste, in writing, every time you plan to ship any exempted waste to the LLRWDF.

§ 266.330 How must you notify them?

(a) You must notify all parties in § 266.325(a) by sending your notification by certified mail with return receipt requested. A ''return receipt'' is any document that demonstrates the receipt of the notification package by the regulatory agencies. It can be the receipt of delivery by the U.S. Postal Service, or a mail delivering service. Include at least the following in the notice:

(1) A dated cover letter signed by an officer or authorized employee that claims the exemption and includes the following:

(i) Your facility's name, address, and RCRA ID number.

(ii) The RCRA hazardous waste codes.

(2) A brief, general description of the process or operation that generated the waste.

(3) The quantity of each waste stream you will ship for disposal and an estimate of the average monthly, maximum monthly, average annual, and maximum annual quantities of the waste for which you are claiming an exemption.

(4) Name, address, and NRC or Agreement State license number of the LLRWDF that has agreed to receive your waste.

(5) A certification for compliance with LDR treatment standards as follows:

(i) A generator at § 268.7(a)(3)(i) of this chapter.

(ii) Treatment facilities at § 268.7(b)(4) of this chapter.

(6) A certification signed by you, or your authorized representative, that the information contained in the notification package is true, accurate, and complete.

(b) You must notify the LLRWDF by certified mail with return receipt requested. Include at least the following:

(1) The cover letter described in § 266.330(a)(1).

(2) The shipment number that will appear on block number 5 of NRC or Agreement State's Uniform Low-Level Radioactive Waste Manifest Form 540.

§ 266.335 Must you wait for any approvals?

Your exemption is self-implementing. The parties you notify needn't review your notification or approve the exemption. You may ship waste that meets LDR treatment standards to the LLRWDF once certified mail receipts have come back to you from all parties required to be notified.

§ 266.340 What if the information in your notification changes?

(a) Submit any change in any information submitted under § 266.330 to all parties you notified initially.

(b) Do it within 10 business days of first learning of a change.

§ 266.345 What are the transportation and manifest conditions you must meet?

Even if you self-regulate under the authority of the Atomic Energy Act, you must meet the NRC or Agreement State transportation requirements in 10 CFR 71.5, and the NRC or Agreement State manifest requirements in 10 CFR 20.2006. Your exempted waste is not subject to the RCRA hazardous-waste transportation and manifest requirements.

§ 266.350 When does the exemption take effect?

Your waste becomes exempt from RCRA Subtitle C manifest, transportation and disposal once you do the following:

(a) Your waste meets LDR treatment standards;

(b) You have received return receipts that you have notified the specified regulatory agencies;

(c) You have manifested the waste according to NRC or Agreement State manifest regulation at 10 CFR 20.2006; and

(d) You have placed the waste on a transportation vehicle bound for an LLRWDF licensed by NRC or an Agreement State.

Disposal Conditions

§ 266.355 Where must you dispose of exempted waste to keep this exemption?

You must dispose of your RCRA-exempted waste in a LLRWDF licensed by NRC or Agreement State under 10 CFR part 61.

§ 266.360 Must your waste be containerized before disposal at the LLRWDF to keep this exemption?

You must arrange to have your exempted waste containerized before it is placed in a disposal cell. The container can not be cardboard or fiberboard boxes.

Record Keeping

§ 266.365 What records must you keep at your facility and for how long?

You must keep records as follows:

(a) You must continue to follow existing applicable record keeping requirements under §§ 264.73 and 268.7 of this chapter in order to demonstrate

that your waste has met LDR treatment standards prior to your claiming the exemption.

(b) You must keep a copy of all notifications required under § 266.330, sent to parties listed in § 266.325 of this subpart for as long as the Mixed Waste exemption continues to be active, and for the three years that follow.

(c) You must keep a copy of return receipts of the notification package from all those parties for as long as the Mixed Waste exemption continues to be active, and for the three years that follow.

(d) You must keep a copy of all of NRC or Agreement State's radioactive waste manifests which included a shipment of the exempted waste, and you must attach the accompanying cover letter as described in § 266.330(a)(1) to it. Keep these records until closure of the disposal facility, or closure of your facility if it happens before the disposal facility closure.

(e) You must keep a copy of any notice to any regulatory agency that tells of any change to your initial notification for as long as the Mixed Waste exemption continues to be active, and for the three years that follow.

(f) For generators who self-regulate under the Atomic Energy Act, in addition to the records specified in § 266.365(a) through (e), you must keep all other documents related to tracking the waste as required under 10 CFR 20.2006.

§ 266.370 When must you make records available?

Make all records relative to your exemption available to your RCRA program agency in these cases:

(a) Immediately during an on-site inspection.

(b) Within five business days when and as requested by EPA.

Loss of Conditional Exemption

§ 266.375 How will your RCRA program agency verify your Transportation and Disposal Conditional Exemption?

Your RCRA program agency may inspect your facility, audit your records regarding the exemption, obtain samples and perform any other activities authorized under RCRA including under section 3007, 42 U.S.C. 6927 or other information gathering authority. In an enforcement action, the burden of proof to establish compliance with this subpart falls on you. Nothing in Subpart N shall be interpreted or applied to restrict any inspection or enforcement authority under RCRA, 42 U.S.C. 6901 *et seq*. Notwithstanding any other provisions of these regulations, actions may also be brought pursuant to Section 7003 of RCRA, 42 U.S.C. 6973, relating to imminent and substantial endangerment.

§ 266.380 How could you lose your Transportation and Disposal Conditional Exemption?

(a) If you fail to satisfy any conditions listed under § 266.315 you will lose your manifest, transportation, and disposal exemption. When you lose your exemption, you must immediately manage your waste as RCRA hazardous waste and you may be subject to enforcement action and fines and penalty under RCRA.

(b) If you fail to satisfy the requirements listed under § 266.325(b) and/or § 266.330(b), you may be subject to enforcement action and fines and penalty under RCRA. However, you will not lose your manifest, transportation, and disposal exemptions.

(c) If you fail to satisfy any of the conditions and requirements under the Transportation and Disposal Conditional Exemption you must notify all parties listed in § 266.325(a) in writing, with return receipt requested, of the violation within 30 days of learning of the violation.

§ 266.385 If you lose the Transportation and Disposal Conditional Exemption can it be reclaimed?

(a) You may reclaim your exemption if:

(1) You again meet the requirements of § 266.315; and

(2) You send us, the RCRA program agency, a notice that you are reclaiming the exemption. The notice must do the following:

(i) Explain the circumstances of each failure.

(ii) Certify that you have corrected each failure that caused you to lose the exemption and that your waste again meets all the conditions as of the date you specify.

(iii) Demonstrate that each failure is not likely to recur because of specific steps (list them) that you have implemented in your LLMW compliance activities.

(iv) Include any other information you want us to consider when we review your notice reclaiming the exemption.

(b) We may terminate a reclaimed conditional exemption if we find that your claim is inappropriate based on factors such as: you have failed to correct the problem; you explained the circumstances of the violation unsatisfactorily; or you failed to show that the violation is unlikely to recur. In reviewing a reclaimed conditional exemption under this section, we may add requirements to the exemption to ensure and document proper waste management to protect human health or the environment.

[FR Doc. 99–29068 Filed 11–18–99; 8:45 am]

BILLING CODE 6560–50–p