

AN UPDATE ON THE MIXED WASTE ISSUE

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INTRODUCTION

I would like to thank the Executive Director for giving me this opportunity to address the Council of Radiation Control Program Directors on behalf of the Nuclear Regulatory Commission (NRC). The issue of mixed waste has and will be one of the more intensely debated and discussed issues facing the nuclear community today and in the foreseeable future. Today I would like to present an update on the mixed waste issue and outline the progress we feel is being made in this area. I will then entertain any questions you may have.

BACKGROUND

The material commonly referred to as "mixed waste" is defined as "waste that satisfies the definition of low-level radioactive waste (LLW) in the Low-Level Radioactive Waste Policy Amendments Act of 1985 (LLRWPA) and contains hazardous waste that either (1) is listed as a hazardous waste in Subpart D of 40 CFR Part 261; or (2) causes the LLW to exhibit any of the hazardous waste characteristics identified in Subpart C of 40 CFR Part 261."

Various statutes at least partially address mixed waste. Briefly they are:

- 1) The Atomic Energy Act of 1954: This law established the Atomic Energy Commission as the federal agency having responsibility for the regulation of source, special nuclear, or byproduct material.
- 2) The Solid Waste Disposal Act of 1965: This was the first federal solid waste statute. It was enacted for the primary purpose of improving solid waste disposal methods.
- 3) The Resource Conservation and Recovery Act of 1976: This amendment to the SWDA was enacted as a framework for solid waste (both hazardous and non-hazardous) management.
- 4) Hazardous and Solid Waste Amendments to RCRA (1984): These amendments to RCRA established the Land Disposal Restrictions treatment standards for waste prior to land disposal and schedules under which the EPA must develop the treatment standards.
- 5) The Low-Level Radioactive Waste Policy Amendments Act of 1985: Established deadlines for States and Compacts to develop new disposal capacity for low-level radioactive waste.

DUAL REGULATORY RESPONSIBILITY

The Atomic Energy Act (AEA) of 1954 and the Resource Conservation and Recovery Act (RCRA) of 1976 and their respective amendments establish regulations applicable to those individuals whose activities result in the production, storage and disposal of waste material that is defined as mixed waste. The responsibility for the regulation of this material rests jointly with the NRC and the Environmental Protection Agency (EPA) under the laws identified above. This dual regulatory responsibility has evoked mixed comments from the Federal, State and private sectors based, in part, upon the idea that there are inconsistencies in the specific requirements of RCRA and the AEA.

The NRC's position on this dual regulatory responsibility concept is best illustrated by Chairman Carr's response to an inquiry, by Congressman Morris Udall, concerning dual regulation: "In general, the Commission considers dual regulation to be unnecessarily burdensome and wasteful. At present, a prudent course of action would be for both the EPA and the NRC to continue to work together to eliminate dual regulation where the Commission's current regulatory framework already ensures adequate protection of public health and safety and the environment" (letter from Chairman Carr to the Honorable Morris K. Udall, 1/19/90). An Office of Technology Assessment report on low-level radioactive waste (November 1989) recommends the establishment of a high level EPA/NRC task force to address the problems of mixed waste. The Commission and EPA are currently evaluating the merits of this approach.

Recent Congressional actions on the Clean Air Act provide some insight on dual regulation. On April 3, 1990, the Senate passed an amendment, offered by Senator Alan Simpson (R-Wyo) to the Clean Air Act which says that EPA is not required to set radionuclide emission standards for NRC licensees if the EPA Administrator, after consulting with the NRC finds existing NRC regulations provide an ample margin of safety to protect the public health. The amendment still allows the States to set stricter standards.

To date, the NRC and EPA staffs have published and are developing several joint guidance documents on various mixed waste issues. The staffs have conducted and will continue to conduct mixed waste workshops for inspectors, permit writers and license reviewers who must deal with mixed waste questions in their daily activities. The NRC and the EPA staffs have and will continue to interact to provide guidance to the generator community concerning mixed waste.

OVERVIEW OF JOINT NRC/EPA GUIDANCE

There are presently seven guidance documents that have been published or are under development by the staffs of the NRC and EPA. The concept of guidance documents arose early in the NRC/EPA interactions as a methodology by which those areas of overlapping regulatory responsibility could be addressed. A description and present status of each guidance document follow:

1) Published Guidance

- ° Guidance on the Definition and Identification of Commercial Mixed Low-Level Radioactive and Hazardous Waste

This guidance was first published for comment in April 1987, and the final guidance was published in October 1989. It is intended as an aid to commercial generators in the identification of mixed low-level waste. It provides the generator with a definition of mixed waste, i.e., waste that satisfies the definition of low-level radioactive waste (LLW) in the Low-Level Radioactive Waste Policy Amendments Act of 1985 (LLRWPA) and contains hazardous waste that is either listed as a hazardous waste in Subpart D of 40 CFR Part 261 or causes the LLW to exhibit any of the hazardous characteristics identified in Subpart C of 40 CFR Part 261. The guidance also provides the generator with a step-wise identification system to determine if the waste meets this definition. The guidance allows the generator to determine the status of the waste based upon his knowledge of the materials and processes involved in the waste generation or by testing the waste.

- ° Combined NRC/EPA Siting Guidelines for Disposal of Mixed Low-Level Radioactive and Hazardous Waste

This Guidance was published in March 1987 to address the concern that confusion regarding mixed waste disposal siting requirements could hinder development of future low-level waste disposal capacity and compliance with the milestones established under the Low-Level Radioactive Waste Policy Amendments Act of 1985. By combining the existing technical requirements, standards and guidance of both agencies, the NRC and EPA formulated eleven guidelines intended to assist States and Compacts in developing siting plans for low-level waste disposal facilities that may receive mixed waste. These guidelines address the geologic and hydrologic characteristics of a site, identify technical as well as legal disqualifying features for potential sites, specify that a disposal site should provide a stable foundation for engineered containment structures and place primary emphasis for determination of site suitability on ensuring that the long term performance objectives of 10 CFR Part 61 will be met.

- ° Joint NRC/EPA Guidance on a Conceptual Design Approach for Commercial Mixed Low-Level Radioactive and Hazardous Waste Disposal Facilities

This guidance offers a conceptual design that satisfies EPA's prescriptive requirements for liners and leachate collection systems and NRC's performance requirements for minimization of contact of the waste with water. A design of this type should be able to satisfy the long term stability requirements of the NRC and the 30 year maintenance requirements of the EPA. This guidance was published in August of 1987.

2) Guidance Documents Under Development

- ° Procedures for Waste Characterization

This guidance will address the special procedures necessary for hazardous waste characterization and the need to consider occupational exposures during testing. The guidance is being developed by EPA and is currently undergoing final review.

- ° Conducting Inspections at Mixed Waste Facilities

This guidance is intended to provide NRC Region, Agreement State, EPA Region, and Authorized State inspectors with background information on mixed waste inspection planning and coordination, cross-training and the conduct of mixed waste inspections. It is currently undergoing final draft review and comment at the NRC. There are numerous issues in the document that require resolution by both agencies including inspection scheduling, pre-inspection planning, waste sampling and analysis and inspector safety. An issuance date for comment has not been determined at this time.

- ° Requirements for Mixed Waste Storage

This guidance will address the problems imposed by the EPA's hazardous waste storage requirements and the provisions in the generators radioactive materials license which may allow for the decay of radioactive material as an acceptable method of disposal. A first draft of this guidance is under review at the EPA. Publication is targeted for mid to late 1991.

- ° Licensing/Permitting Mixed Waste Disposal Facilities

This guidance will be developed for the purpose of allowing a person to submit a single application for both an NRC license and an EPA permit. The intent of such guidance would be to develop a single permitting or licensing process for mixed waste facilities. A scope of work document has been developed by EPA but to date a publication target has not been established.

WORKSHOPS

The NRC and EPA have sponsored and will continue to sponsor mixed waste workshops that are primarily conducted for EPA inspectors but open to NRC and State personnel as well. These workshops are focused at those individuals who routinely deal with mixed waste questions on a daily basis. To date, workshops have been held in Santa Fe, NM on November 27-28, 1989, and Chicago, IL on March 6-7, 1990. A future workshop will be held in Washington DC, on May 14-15, 1990. Immediately after the Washington workshop, NRC and EPA will sponsor a Host State Meeting in order to provide Host States with additional information on the dual regulation of mixed wastes. Additional workshops are planned for June 19-20, 1990, in Denver CO, July 31-August 1, 1990, in Buffalo NY and in Oakland, CA September 11-12, 1990. Plans for the former two workshops will include site visits to the Rocky Flats (on June 21) and West Valley (on August 2) facilities.

Attendance at these workshops has been very good and we hope that this trend will continue. The staffs of state radiation control programs are also encouraged to attend these workshops.

CONTINUING ISSUES

EPA MIXED WASTE AUTHORIZATION

Under RCRA, either a State will develop a hazardous waste plan, including a mixed waste component, or the EPA administers the waste program in that State. This is similar to the NRC's Agreement State program for radioactive materials. Base RCRA authorization allows State authorities to administer the RCRA waste program. Mixed waste authorization allows the State to regulate mixed waste disposal activities. Both authorizations require submission and approval of various documents to the EPA. Currently ten States or Territories have not submitted base authorization requests to the EPA. They are: CA; AR; Conn; WY; Iowa; Hawaii; Puerto Rico, the Virgin Islands; American Samoa and the Mariana Islands.

Fifteen States or Territories have received mixed waste authorization. They are: CO; TN; SC; WA; KY; UT; GA; MINN; OH; NC; MICH; TX; ID; ILL; and Guam. New Mexico is targeting mid June for full authorization and Oregon has submitted their mixed waste plan to the EPA. With the exception of MINN, OH, MICH, and Guam these are all Agreement States. Forty-six States have received base RCRA authorization.

As indicated by the various hazardous waste authorities, and the Agreement State/NRC regulation of the radioactive portion of the waste, the regulation of mixed wastes can be confusing and will require the generator to keep abreast of Federal, State, and compact requirements for mixed waste.

THE LAND DISPOSAL RESTRICTIONS

The Land Disposal Restrictions (LDRs) are a component of the Hazardous and Solid Waste Amendments to RCRA. Briefly, the LDRs or Land Ban, divides the universe of hazardous waste (and thus hazardous waste with a radioactive component) into groups and sets schedules for their exclusion, in an untreated form, from land disposal. The groups of hazardous waste are:

- ° Solvents and Dioxins - banned from land disposal 10/8/86 and 10/8/88 respectively.
- ° "California List" Wastes - this group of wastes was originally developed by the State of California's Waste Management Program and includes liquids containing certain metals, free cyanides, PCB's, corrosives, and certain wastes containing halogenated organic compounds - banned July 18, 1987.
- ° "First, Second and Third Third" Waste - divides the remaining list of listed and characteristic wastes into thirds. Specific waste listings are outlined in 40 CFR Part 268. The first third were banned August 8, 1988, the second third June 8, 1989, and the third third May 8, 1990. The first and second third wastes that are mixed wastes are granted a variance until May, 1990.
- ° Any newly listed (after 11/8/84) will be handled on a case by case basis.

The LDRs also require treatment, storage and disposal facilities to maintain the records for waste and waste residues when these wastes or waste residues are sent off-site for disposal and to certify that treatment standards have been met for particular wastes prior to disposal.

These "Land Ban" components are important for mixed waste handlers in that the treatment process may conceivably cause the release of radioactive material or may violate the ALARA principle, but specific conflicts have not been identified to date.

The November 22, 1989, Federal Register contained notification that the EPA was proposing to grant a two year national capacity variance under section 3004(h)2 of RCRA. This variance would allow for the continued storage of third third wastes. The proposed rule allows for the inclusion of first third and second third wastes in the rulemaking. As such, first, second, and third third mixed wastes can be stored until May 8, 1992, and remain in compliance with RCRA. Mixed wastes containing spent solvents, dioxins, or California list wastes, are still subject to the applicable treatment standards. For mixed waste containing certain spent solvents, dioxins, or are on the California list, the EPA may consider petitions for one year extensions. A maximum of two one-year extensions may be granted and the extensions will be granted on a case-by-case basis after consultation with the appropriate State agencies and public notice and comment.

RESOLUTIONS OF AEA AND RCRA INCONSISTENCIES

As stated earlier the main reason this issue has been debated so intensely is the perception of inconsistencies between the AEA and RCRA. In the aforementioned letter to Congressman Udall from Chairman Carr, the Commission position is stated, "our staff has not yet identified any literal conflicts in the requirements of RCRA and the AEA that would frustrate compliance with the joint approach established by EPA and NRC." The NRC letter goes on to say, "However, the Commission would note that Section 1006 of RCRA does give us the authority to waive the application of RCRA upon a finding by the Commission that such requirements are inconsistent with the requirements established by the Commission under the AEA. Should such a situation arise this provision appears to provide the Commission sufficient authority to resolve that situation" (letter from Commissioner Carr to the Honorable Morris Udall 1/19/90).

SUMMARY

The NRC recognizes the challenges involved when two or more sets of regulations are applicable to a particular waste material. In order to meet this challenge the NRC and EPA have been working together to identify areas of overlapping regulatory authority and through, guidance and workshops, minimize the difficulties involved. Again, quoting from Chairman Carr's letter to Congressman Udall, "It is our hope that the joint approach to the mixed waste issue that we and the EPA have established will lead to the successful development and operation of mixed waste disposal facilities as the States move forward to carry out their responsibilities under the Low-Level Radioactive Waste Policy Amendments Act of 1985 (LLRWPA). We are committed to making this approach work. If the joint approach proves to be unsuccessful, however, it may well be that further legislative consideration of this matter will be necessary to achieve the objective of the LLRWPA."

REFERENCES

- 1) Letter from NRC Chairman Carr to the Honorable Morris K. Udall, dated January 19, 1990
- 2) Office of Technology Assessment "Partnerships Under Pressure," managing Commercial Low-Level Radioactive Waste, Special Report, November 1989
- 3) Federal Register Vol. 54, No. 224, Wednesday, November 22, 1989 pp 48372-48529