February 12, 1999 SECY-99-049

FOR: The Commissioners

FROM: William D. Travers /s/
Executive Director for Operations

SUBJECT: COMPATIBILITY OF AGREEMENT STATE PROGRAMS THAT PROHIBIT THE DISPOSAL OF MIXED WASTE

PURPOSE:

To request Commission approval of the staff's position that Agreement State programs that prohibit the disposal of mixed waste are compatible with the Nuclear Regulatory Commission's (NRC) regulatory program. The staff plans to notify the staff of the U.S. Environmental Protection Agency (EPA) of this compatibility determination.

SUMMARY:

A number of Agreement States prohibit the disposal of mixed waste by regulation, license condition, or other legally binding requirement. These prohibitions do not pose a significant national regulatory problem primarily because they involve small volumes of mixed waste, its storage is safe with regard to radiation protection, and safe storage is serving the national interest at this time. Further, the need for adequate mixed waste disposal capacity is only one element of the long-term national need to develop low-level radioactive waste disposal capacity. Thus, from a policy perspective, an Agreement State program finding of "compatible" for States that prohibit the disposal of mixed waste is acceptable.

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BACKGROUND:

Mixed waste contains both hazardous waste (as defined by the Resource Conservation and Recovery Act (RCRA) and its amendments) and radioactive waste (as defined by the Atomic Energy Act (AEA) of 1954 and its amendments). It is jointly regulated by NRC or Agreement States and the EPA or EPA's RCRA Authorized States. The statutory definition is found in the Federal Facilities Compliance Act of 1992 (FFCA) in Section 1004(41): "The term 'mixed waste' means waste that contains both hazardous waste and source, special nuclear, or byproduct material subject to the Atomic Energy Act of 1954." The mixed waste discussed in this paper is commercial and non-U.S. Department of Energy (DOE) low-level radioactive waste (LLW) combined with hazardous waste. Attachment 1 is a discussion of the volumes of mixed waste, State initiatives to obtain DOE acceptance of commercial and non-DOE mixed waste for treatment and disposal, and EPA initiatives to revise its regulations to allow for more disposal capacity in the nation.

Section 274 of the AEA of 1954, as amended, requires an Agreement State to have a regulatory program that is compatible with NRC's program. As part of the compatibility determination for the North Carolina (NC) Integrated Materials Performance Evaluation Program (IMPEP) review in 1996, the NC LLW regulations were compared with 10 CFR Part 61. The NC regulations include a prohibition on mixed waste disposal which may not satisfy NRC's regulation compatibility criteria because NRC regulations do not contain a similar prohibition. The NC LLW regulations state:

> Mixed waste is prohibited. The Radiation Protection Commission may waive the prohibition of disposal of mixed waste provided the Radiation Protection Commission determines that the following conditions are met:
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> (1) The disposal will conform to all other rules in this Section; and
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> (2) The disposal will conform to all requirements of the Federal Low-Level Radioactive Waste Policy Amendments Act of 1985, G.S. 104E as amended, G.S. 130A Article 9 as amended, and regulations issued pursuant thereunto.

Three other Agreement States have mixed waste prohibitions in their regulations -- Massachusetts, Texas and Washington. The prohibitions are phrased differently. In Massachusetts, mixed waste may be accepted for disposal if the Board so determines. The Texas regulation states: "Mixed waste shall not be accepted for disposal." Likewise, the Washington regulation states: "Wastes subject to regulation under Resource Conservation and Recovery Act (RCRA) are not allowed at the disposal site." These prohibitions are also reflected in the Washington license and were included in the Texas draft license for its previously proposed disposal facility. South Carolina (SC) prohibits the disposal of mixed waste

at the Barnwell, SC, LLW disposal facility only by license condition, as does California at the proposed Ward Valley LLW disposal facility. The LLW disposal facility that had been proposed for Nebraska (license application was denied on December 21, 1998) would have prohibited the disposal of mixed waste by omitting mixed waste in the source term. Table 1 is a comparison by Agreement States of mixed waste prohibitions in statute, regulation, or license condition or other legally binding requirement (Attachment 2).

The NC IMPEP review report recommended that the issue of the compatibility of Agreement State programs that prohibit the disposal of mixed waste be resolved as a generic issue.

DISCUSSION:

The Commission's Statement of Principles and Policy for the Agreement State Program, states that to be compatible, an Agreement State radiation control program in exercising its flexibility:

> ...should not preclude, or effectively preclude, a practice authorized by the AEA, and in the national interest.

In discussing the flexibility afforded Agreement States in implementing their programs, the Statement says:

> [A] State would have the flexibility to design its own program, including incorporating more stringent, or similar, requirements provided that the requirements for adequacy are still met and compatibility is maintained, and the more stringent requirements do not preclude or effectively preclude a practice in the national interest without an adequate public health and safety or environmental basis related to radiation protection.

Finally, the Commission's Policy Statement on Adequacy and Compatibility of Agreement State Programs states in regard to compatibility:

> An Agreement State radiation control program is compatible with the Commission's regulatory program when its program does not create conflicts, duplications, or gaps, or other conditions that would jeopardize an orderly pattern in the regulation of agreement material on a nationwide basis.

Conflicts, duplications, and gaps are defined in Management Directive (MD) 5.9. "Conflict" means that, "The essential objectives of regulations or program elements are different and an undesirable consequence is likely to result in another jurisdiction or in the regulation of agreement material on a nationwide basis." "Duplication" means "Identical regulations or program elements apply to the same material at the same time. Note: this definition applies primarily to review of Agreement State regulations." "Gap" means "The essential objectives of NRC regulations or program elements are absent from the Agreement State program and an undesirable consequence is likely to result in another jurisdiction or in the regulation of

agreement materials on a nationwide basis." Based on the definitions in MD 5.9, these prohibitions potentially result in conflicts and gaps, but no duplications, in those Agreement State programs that preclude the disposal of mixed waste.

A potential "conflict" arises because the NRC regulations and guidance would allow mixed waste disposal, as long as the EPA's Land Disposal Restrictions (LDRs) are met and an EPA RCRA permit is obtained,[1] while seven of the States listed in Table 1 prohibit this practice. A potential "gap" arises because the essential objectives of NRC regulations or program elements (i.e., the safe disposal of the radioactive portion of mixed waste) would be absent from the seven Agreement State programs that prohibit this activity.

Currently, commercial generators have no option but to store those mixed wastes for which treatment technology or disposal capacity is not yet available. Storage comes under the regulatory authority of NRC or Agreement States, and EPA or their authorized States. We are not aware of any problems with regard to radiation protection programs for mixed waste storage. EPA's primary concern is with mixed waste facilities that are not pursuing environmentally responsible management of their stored mixed waste, especially those storing large quantities of mixed waste and those that are storing waste for which treatment technology is commercially available (Attachment 1). Nevertheless, we do not believe the conflicts and gaps are significant or jeopardize an orderly pattern of regulation of agreement material on a nationwide basis because mixed waste can be stored; gradually more mixed waste is being treated so that it can be disposed; and there is some mixed waste disposal capacity at Envirocare that is open to the nation. Therefore, we do not believe that these prohibitions create any undesirable nationwide consequences from a regulatory perspective at this time.

In recommending that the Commission approve the proposed staff position that Agreement State programs that prohibit the disposal of mixed waste are compatible, the staff does not intend to imply that (1) the NRC's provisions allowing mixed waste disposal are inappropriate or (2) Agreement State programs that do not prohibit disposal of mixed waste are inadequate or not compatible. Rather, the intent is to simply indicate that the conflicts and gaps created by certain Agreement States' prohibitions are not now of a nature that would justify a finding of incompatibility.

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[1]10 CFR Sections 61.56(a)(8) and 61.2, and memorandum "To: NRC Licensees that May Generate Mixed Waste, Subject: RCRA Requirements for Mixed Radioactive and Hazardous Waste," from Robert M. Bernero, Director, Office of Nuclear Material Safety and Safeguards, NRC, and Don R. Clay, Assistant Administrator, Office of Solid Waste and Emergency Response, EPA, May 16, 1991, with enclosures: "Low-Level Mixed Waste, A RCRA Perspective for NRC Licensees," EPA/530-90-057, August 1990, and memorandum "To All NRC Licensees: Guidance on the Land Disposal Restrictions' Effects on Storage and Disposal of Commercial Mixed Waste," from Sylvia K. Lowrance, Director, Office of Solid Waste, EPA, September 28, 1990.

In any event, the Commission should note that it is unclear whether NRC would have the authority to require Agreement States to allow for the disposal of mixed waste given that the Atomic Energy Act does not cover hazardous (non-radioactive) waste. The Commission authority in this area may depend on the basis that a State articulates for prohibiting the disposal of mixed waste. If the Commission has reservations about the policy recommendation below to find these Agreement States compatible on the mixed waste issue, staff will request that the Office of General Counsel further develop this (i.e., NRC's authority to require Agreement States to allow for the disposal of mixed waste) legal issue for the Commission's consideration.

RECOMMENDATION:

Staff recommends that the Commission approve the staff position that Agreement State programs that prohibit the disposal of mixed waste are compatible with NRC's regulatory program. In addition, with Commission approval, the staff will notify EPA of this decision for its use in implementing and developing current EPA programs and initiatives.

COORDINATION:

The Office of the General Counsel has no legal objection to this paper.

original /s/ by

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Attachments:
1. Historical Background
2. Table 1

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Historical Background

Mixed waste generated represented a small percentage (about 13 percent of 1.1 million cubic feet) of commercial LLW disposed in 1990, based on the only time a comprehensive survey of mixed waste disposal was conducted. The *National Profile on Commercially Generated Low-Level Radioactive Mixed Waste* (National Profile) indicated that in 1990 about 140,000 cubic feet of mixed waste was generated. Nearly 72 percent of this volume was liquid scintillation fluids that could be incinerated without much residual mixed waste. Organic solvents such as chlorofluorocarbons, aqueous corrosives, and waste oil made up 17 percent, toxic metals made up 3 percent, and "other hazardous materials" made up the remaining 8 percent. There were also 75,000 cubic feet of mixed waste in storage. Only about 12,000 cubic feet of mixed waste were untreatable because of the lack of treatment facilities. There is no good quantitative information about the amount of mixed waste that requires disposal. One study estimated about 4,500 cubic feet out of the 140,000 cubic feet generated would require disposal. All mixed waste must meet the treatment standards specified in the LDRs prior to disposal in a jointly regulated facility. This volume constitutes a relatively large percentage of the mixed waste from the commercial sector. Only "characteristic" mixed waste (ignitability, corrosivity, reactivity, and toxicity) that has been treated to remove the characteristic and does not exhibit any other hazardous characteristic could be disposed of in anything other than a jointly regulated facility.

Because of the relatively small volume, the increased regulatory complexity, the lack of new disposal sites and the relatively higher cost of constructing disposal facilities only for mixed waste, in 1990 California and other States evaluated the availability of mixed waste treatment capacity to reduce the amount of mixed waste requiring disposal. They also pursued discussions with the Department of Energy (DOE) about their acceptance of the small volume of commercial mixed waste at DOE's mixed waste treatment and disposal facilities. The States reasoned that their relatively small volumes of commercial mixed waste could most efficiently be treated and disposed at DOE's mixed waste facilities, obviating the need to build commercial mixed waste disposal facilities. States also believe that generators may further reduce or stop the production of mixed waste requiring land disposal at jointly regulated facilities.

In 1991, NRC wrote DOE that it was ready to work with DOE, EPA, States, and the regulated community to facilitate DOE acceptance of commercial mixed waste for storage, treatment, and disposal and that there was no serious regulatory impediment to DOE taking possession of commercial mixed waste for disposal, unless the waste was classified above Class C. The National Low-Level Waste Management Program (NLLWMP) subsequently determined there are no legal, regulatory and technical barriers associated with DOE acceptance of commercial mixed waste. The conclusion from two analyses conducted by the NLLWMP in its reports, *Mixed Waste Management Options*, is that most, but not all, mixed waste can be "managed theoretically out of existence." The 1995 update study cited above estimated 4,500 cubic feet of mixed waste required disposal. This means, for example, that much of the mixed waste could be treated in such a manner to change the characteristic of the waste from hazardous to nonhazardous. In February 1998, the NLLWMP examined the small number of untreated mixed waste streams from the orphan waste survey conducted by the States and concluded that

almost all, if not all, could be treated. The States are now waiting to see whether or not DOE's recent mixed waste privatization efforts will provide the capacity capable of treating the untreatable mixed waste and disposing of commercial mixed waste. However, DOE recognizes that there are political acceptance issues from host States that require resolution under the FFCA because there is no requirement that DOE treat or dispose of commercial mixed waste at its facilities.

Currently, commercial generators have no option but to store those mixed wastes for which treatment technology or disposal capacity is not yet available. Sometimes storage is very costly. The only mixed waste disposal facility available is Envirocare and its facility is limited to mixed waste with the LLW component limited to Class A.

Because of this dilemma, on April 26, 1996, EPA renewed for an additional two years, the special provision for the civil enforcement policy of the storage prohibition in § 3004 (j) of RCRA at facilities which generate mixed waste. The issue is not the safety of the storage of mixed waste but rather the 90 day compliance limit for accumulating the mixed waste for proper recovery, treatment, or disposal, or applying for a storage permit. The storage permit can be complicated and expensive. In recognition of this dilemma, EPA will treat violations involving relatively small volumes of mixed waste as reduced priorities among EPA's potential civil enforcement actions. The enforcement policy affects only mixed waste prohibited from land disposal under RCRA LDR and for which there are no available options for treatment or disposal. EPA's primary concern is with: (1) mixed waste facilities that are not pursuing environmentally responsible management of their stored mixed waste, especially those storing large quantities of mixed waste; and (2) those that are storing waste for which treatment technology is commercially available. On April 9, 1998, EPA announced an interim extension of its enforcement policy until October 31, 1998 and on November 6, 1998, determined that a three-year extension of the policy beyond October 31, 1998 is appropriate.

EPA has also initiated two rulemakings regarding mixed waste disposal. One would allow low hazardous mixed waste to be disposed of in Part 61 disposal facilities and no longer be subject to RCRA regulations. This action has the potential to include most nuclear power plant generated mixed waste and resulted from the settlement of Edison Electric Institute v. EPA, 996F.2d 326 (D.C. Cir. 1993). The other EPA initiative would permit mixed waste with low activity (Class A LLW) to be accepted for disposal in Subtitle C RCRA disposal facilities provided the disposal facility has some kind of simplified Part 61 or Agreement State equivalent license. Staff is working with EPA staff on these initiatives.

TABLE 1

Comparison of Mixed Waste Prohibitions by State in Statute, Regulation and Application/License

HOST STATE	STATUTE	REGULATION	APPLICATION/LICENSE
North Carolina	No	Yes	Yes - Wake County - application under review
Massachusetts	No	Yes	Siting process is suspended.
Texas	No	Yes	Yes - Sierra Blanca - Draft license denied.
Washington	No	Yes	Yes - Hanford - License issued
South Carolina	No	No	Yes - Barnwell - License issued
California	No	No	Yes - Ward Valley - License issued. Land transfer in litigation.
Nebraska	No	No	Yes (by omission in source term) - Boyd County - Application for license denied
Illinois	No	No	Siting process is suspended.
New York	No	No	Siting process is suspended.
Utah	No	No	No - Envirocare - (limited to Class A LLW) License issued
Pennsylvania (prospective Agreement State)	No	No	Siting process is suspended.
Ohio (no longer host State; prospective Agreement State)	No	No	Not Applicable

ATTACHMENT 2