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INFORMATION REPORT

For: The Commissioners

From: Howard K. Shapar
Executive Legal Director

Thru: for Executive Director for Operations

Subject: NRC AUTHORITY TO REGULATE RADIOACTIVE WASTES

Purpose: To inform the Commission of the nature of NRC's authority to license and regulate radioactive wastes.

Discussion: The attached memorandum is in response to Commissioner Bradford's request of December 8, 1977 regarding a description of the NRC's authority to regulate radioactive wastes and limitations to that authority.

The Office of Nuclear Material Safety and Safeguards is preparing a separate paper, to be forwarded in about one month, regarding possible changes in that authority. The paper will cover the areas in which additional authority (or legislative clarification of existing authority) should be sought and the programmatic impacts (personnel and funds) which would accrue with the additional responsibilities. This paper will also be responsive to the Commission request for a staff study included in its response to the GAO report on waste management (SECY-78-89).

Coordination: The Office of Nuclear Material Safety and Safeguards concurs with the information in this memorandum and has jointly prepared, with ELD, the summary that appears as an Appendix.

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MEMORANDUM

NRC Authority Over Radioactive Waste Management Activities

NRC authority over radioactive waste management activities is derived from the Atomic Energy Act of 1954, as amended (AEA), the Energy Reorganization Act of 1974, as amended (ERA), and the National Environmental Policy Act of 1969, as amended (NEPA). NRC authority in a given circumstance will depend upon one or more of the following factors: (1) the type of waste and the identity of the person or entity storing or disposing of the waste, (2) the origin of the waste and the duration of storage (long-term or short-term), (3) the State where the waste is being stored or disposed, and (4) whether the waste storage is a part of DOE research and development activities.

(1) Type of Waste and Identity of Person or Entity Storing or Disposing of the Waste

NRC licensing authority over storage or disposal of radioactive materials is confined to storage or disposal of "source", "byproduct", or "special nuclear" materials, as defined in AEA sections 11e, 11z, and 11aa. These materials are defined in the AEA so as to exclude naturally occurring radioactive materials (such as radium and its daughter nuclides) and accelerator produced radioisotopes. NRC does exercise some regulatory authority over uranium mill tailings (which are important from a regulatory standpoint only because of hazards associated with the presence in the tailings of naturally occurring radioactive materials) during the term of the uranium (source material) milling license. The legal

theory used to support authority here is that NEPA authorizes NRC to evaluate and control the cumulative environmental effects of all materials on the milling site. For further details on NRC authority over uranium mill tailings, see SECY-77-303A "Regulatory Control Over Uranium Mill Tailings."

The AEA provides for NRC licensing authority over source material (such as uranium) only "after removal from its place of deposit in nature". AEA section 62. Consequently, NRC may not exercise licensing authority over uranium mining operations.

Finally, under the AEA the NRC has licensing authority only over "persons" who store or dispose of radioactive materials. The term "person" is defined in section 11s. of the AEA so as to include every conceivable entity (including Federal, State, and foreign governments) except the AEC. The Department of Energy (DOE) and its predecessor ERDA succeeded to this licensing "exemption". However, section 202 of ERA grants NRC licensing authority over certain limited DOE activities relating to "high-level radioactive wastes" notwithstanding section 11s of the AEA. (Also, under section 91b of the AEA, certain limited activities of DOD relating to atomic weapons and facilities and special nuclear materials are exempt from NRC licensing.) Thus, while NRC licensing authority over commercial radioactive waste management activities is broad, NRC has only limited authority over DOE activities.

As indicated, NRC authority over DOE radioactive waste management activities is confined to certain limited activities involving "high-level radioactive waste". The term "high-level radioactive waste" is not defined in either ERA or AEA. The term (more precisely, the term "high-level liquid radioactive wastes") is defined in NRC's regulations in 10 CFR Part 50, Appendix F so as to include only reprocessing wastes. There is little doubt that NRC could redefine the term for purposes of section 202 of the ERA so as to include spent fuel, provided that some acceptable line could be drawn between spent fuel as a resource and spent fuel as a waste. Thus, NRC licensing authority over DOE storage of commercial spent fuel depends on whether commercial spent fuel can be regarded as a waste. (If spent fuel is a radioactive "waste" at all, it is a "high-level radioactive waste". The possible classification of spent fuel as high-level radioactive waste will be discussed in a separate Commission paper.) However, given traditional usage, it is questionable whether transuranic wastes could be classified by NRC as "high-level radioactive wastes" within the meaning of section 202 of the ERA.

(2) Origin of Waste and Duration of Storage

As indicated, all commercial storage or disposal of source, byproduct, and special nuclear materials is subject to NRC licensing, but only certain limited DOE activities involving "high-level radioactive wastes" are subject to NRC licensing.

Under section 202(3) of the ERA, storage by DOE of high-level radioactive waste "resulting from activities licensed under [the AEA]" is subject to NRC licensing regardless of the storage duration. This would include domestic high-level waste from NRC licensed nuclear power plants, as well as foreign high-level waste which either (1) entered the U.S. under an NRC import license, or (2) was generated from nuclear fuel exported from the U.S. under an NRC (or AEC) export license, or (3) was irradiated in a nuclear facility which was exported under an NRC (or AEC) export license.

However, under section 202(4) of the ERA, storage by DOE of high level waste generated by ERDA (or DOE) (so-called "military waste") is only subject to NRC licensing if the storage facility is "authorized for the express purpose of ... long term storage". Present DOE facilities are exempt from DOE licensing since they have not been expressly authorized by Congress for long term storage. For further details regarding NRC authority over existing and newly proposed DOE high level radioactive waste storage facilities see Natural Resources Defense Council (Request Concerning ERDA High Level Waste Storage Facilities), 5 NRC 550 (1977)

(3) State Where the Waste Is Being Stored or Disposed

Under section 274 of the AEA the NRC has by agreement relinquished authority over private storage and disposal of low-level radioactive waste (source, byproduct, and less than critical mass quantities of special nuclear

materials) to Agreement States. Thus, Agreement States license private uranium milling and low level waste land burial activities within their borders, as well as decommissioned facilities after termination of NRC licenses. However, under 274c of the AEA, the NRC retains authority over "the disposal into the ocean or sea of byproduct, source, or special nuclear waste materials as defined in regulations or orders of the Commission," and "the disposal of such other byproduct, source, or special nuclear material as the Commission determines by regulation or order should, because of the hazards or potential hazards thereof, not be so disposed of without a license from the Commission." Section 274c is implemented in 10 CFR §150.15(a)(3) and (4) of the Commission's regulations.

(4) DOE Research and Development Activities

Under section 202(4) of the ERA the NRC may not exercise licensing authority over DOE storage of high level radioactive waste materials generated by DOE (or ERDA) if the storage is in a facility "used for" or "part of" "research and development activities." The precise scope of this exclusion is unclear.

APPENDIX

SUMMARY OF NRC WASTE MANAGEMENT LICENSING

The following is a brief summary of the waste management activities that, under current law, are and are not licensed by NRC.

Waste Management Activities Licensed by NRC

1. Disposal and/or storage of high-level waste from licensed (commercial) activities.
2. Long-term storage and/or disposal of high-level waste from DOE activities except for facilities used for research and development activities.
3. Commercial storage and disposal of transuranium and low-level wastes, except in Agreement States.
4. Commercial storage of spent fuel.
5. DOE facility for storage of commercial spent fuel, as waste.

Activities Not Licensed by NRC

1. Disposal or storage of high-level waste from DOE activities in a DOE operated R&D facility.
2. Short-term storage of DOE produced high-level waste (e.g., existing tank storage of DOE HLW).
3. Storage and/or disposal in a DOE operated facility of:
   - transuranic contaminated waste
   - foreign generated high-level waste and/or spent fuel if not resulting from licensed activities
   - low-level waste
4. DOE decommissioned facilities except for those covered by Section 202 of the Energy Reorganization Act.

5. Storage or disposal of uranium mill tailings after the expiration of the milling license.
6. Disposal of low-level waste in Agreement States.
7. Decommissioned facilities in Agreement States, upon termination of any NRC license.
8. Disposal of naturally occurring and accelerator produced isotopes.

From the above review, it is clear that there are significant waste storage and disposal operations not regulated by NRC and that there are no comprehensive or uniform national policies regarding regulation of radioactive waste management.