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Assuring Access to Low-Level Radioactive Waste Disposal Facilities for Non-DOE Users of Radioactive Materials: Solutions "Outside the Box." - 8274

A.D. Pasternak, Ph.D.
California Radioactive Materials Management Forum
P. O. Box 1638, Lafayette, CA 94549-1638

ABSTRACT

This paper proposes both near-term and long-term solutions for disposal of low-level radioactive waste (LLRW) Classes B and C generated by non-DOE organizations in thirty-six states that will lose access to the Barnwell, SC disposal facility on July 1, 2008. The solutions proposed here call for the federal government, specifically the US Department of Energy (DOE), to play a key role and are outside the existing interstate compact framework established by the Low-Level Radioactive Waste Policy Act of 1980 (amended in 1985) and subsequent state ratification and Congressional consent statutes.

INTRODUCTION

South Carolina law and Atlantic Compact policies call for access to the Compact's regional disposal facility at Barnwell to be restricted to the three Compact states (South Carolina, Connecticut, and New Jersey) on July 1, 2008. Recent events, including rejection by the South Carolina Legislature of a proposed change in law, indicate that this date will stick. How serious is the situation? On July 1, 2008, public and private institutions and corporations and all federal and state government agencies, except the U.S. Department of Energy, that use radioactive materials in thirty-six states, the District of Columbia, and Puerto Rico will have no place to dispose of their Class B and Class C LLRW. These are the states not among the fortunate fourteen in the Northwest, Rocky Mountain, and Atlantic Compacts. The regional disposal facilities in Richland, Washington (Northwest and Rocky Mountain Compacts) and Barnwell, South Carolina (Atlantic Compact) are the only facilities licensed to dispose of Class B and C LLRW. Access to the Richland disposal facility has been restricted to the Northwest and Rocky Mountain Compacts since 1993. Utah statute limits the Energy*Solutions* disposal facility at Clive to Class A waste. This facility operates outside the compact system and is open to all states except those in the Northwest and Rocky Mountain Compacts. It is the only facility to which organizations in the thirty-six states will be able to send their Class A waste — not including biological wastes and sealed sources — after next July 1. According to data from the DOE's Manifest Information Management System (MIMS), in 2006, the activity (curies) in low-level waste Classes B and C disposed of at Barnwell by the non-DOE users in these thirty-six states accounted for 95% of the Activity disposed of at all three disposal facilities (Barnwell, SC; Richland, WA; and Clive, UT) by all non-DOE generators. The phrase "non-DOE" more accurately describes those users of radioactive materials with which we are concerned here than the often-used description "commercial." We are concerned with institutional users such as universities, medical, and research

centers, agencies of state and federal governments — except for the DOE, as well as commercial users such as utilities with nuclear power plants and industries including pharmaceutical and biotech companies, i.e., all users of radioactive materials except the DOE which has its own disposal facilities.

A solution for Class B and C LLRW, other than indefinite, on-site storage is badly needed. And, of course, on-site storage is not an option for facilities undergoing decommissioning.

THE LOW-LEVEL WASTE POLICY ACT IS NOT WORKING

Since passage of the Low-Level Waste Policy Act in 1980 (amended in 1985), Congress has approved ten interstate disposal compacts, but no new disposal facilities meeting the Act's requirements for disposal of LLRW waste classes A, B, and C have been developed under state oversight as called for in the Policy Act. Only one proposed facility received a conditional license: the proposed Ward Valley disposal facility in California's arid Mojave Desert designed to serve the four states of the Southwestern Compact (Arizona, California, North Dakota, and South Dakota). The Ward Valley facility never opened because of political opposition, first by the Clinton Administration and later by the California Legislature and Governor (former Governor Davis). Only one State, Texas, still has an active program to develop a new disposal facility (Texas and Vermont Compact).

For some time, federal officials have noted that the Act is failing. In a speech on May 14, 2002[1] then-NRC Chairman Richard Meserve noted,

> "…the low-level waste siting program in this country is not working. Moreover, barring Congressional action, which is unlikely in the near term, the situation is unlikely to change."

Cal Rad believes that Chairman Meserve was perceptive in noting the necessity for Congressional action. At the time of this speech, Mr. Meserve was hopeful, as were Cal Rad and others, that Envirocare of Utah (now known as Energy*Solutions*) would obtain approval from the State of Utah for disposal of Class B and C wastes. However, a state law, enacted in 2005, prohibits the acceptance of Class B and C wastes for storage or disposal.[2] In his 2002 speech, Chairman Meserve went on to say,

> "Sufficient disposal capacity currently exists to handle today's disposal needs, particularly in light of the trend towards license renewal of civilian nuclear power plants. (License renewal delays decommissioning and hence postpones the need to dispose of the waste associated with decommissioning.) In addition, waste minimization, volume reduction, and decay-in-place strategies reduce the overall volume of material. Nonetheless, the disposal situation is increasingly uncertain. With the eventual closure of the Barnwell disposal facility to states outside the Atlantic Compact, the absence of progress in other Compacts to site low-level waste disposal facilities, and few other disposal options, access to facilities for the disposal of low-level waste is increasingly constrained. Although Envirocare of Utah may eventually obtain state approval for disposal of Class B and C

[1] "Providing Certainty in Low-Level Radioactive Waste Disposal: The Continuing Challenge."

[2] http://www.le.state.ut.us/~code/TITLE19/19_03.htm

> wastes, the limited options for disposal are likely to keep disposal costs high. There is thus the potential that the decommissioning process for many sites and the medical use of radionuclides will be affected adversely."

Other members of the NRC — Commissioners Jaczko, Lyons, and Merrifield — have also commented on the post-July 1, 2008 Class B and C LLRW disposal problem.[3]

In comments on a 2004 report of the General Accounting Office, the NRC noted,

> "At the same time, the nearly 20 years of experience under the Low-Level Radioactive Waste Policy Amendments Act of 2995(LLRWPAA) has demonstrated the difficulties in siting and licensing a LLRW disposal facility. Not one new facility has been developed in this time under the LLRWPAA. Therefore, we believe it is in the national interest to begin exploring alternatives identified in Appendix II that would potentially provide a better legal and policy framework for new disposal options for commercial generators of LLRW." (Quoted in part; emphasis added.)[4]

PROPOSED LONG-TERM SOLUTION FOR DISPOSAL OF NON-DOE CLASS B AND C LOW-LEVEL RADIOACTIVE WASTES

The Department of Energy has issued a Notice of Intent to Prepare an Environmental Impact Statement for the Disposal of Greater-Than-Class C (GTCC) Low-Level Radioactive Waste. This action by the DOE was pursuant to statute. Cal Rad supports the proposal, first advanced by the Health Physics Society (HPS),[5] that the GTCC disposal facility also be used for the disposal of non-DOE Class B and C low-level waste. We note that the DOE has already modified the Congressional mandate to dispose of non-DOE GTCC waste to also include its own "greater-than-Class C-like" LLRW and transuranic wastes. It should not be too much of an additional modification for Congress to include non-DOE Class B and C wastes as suggested by the HPS. Existing statute requires further Congressional action in any event. Before issuing a Record of Decision (ROD) for the GTCC facility, the DOE must obtain Congressional approval of its EIS. Furthermore, if a facility can safely dispose of GTCC wastes, it can certainly dispose of Class B and C wastes safely. Also, the additional waste volumes should improve the economics of the GTCC facility.

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[3] January 11, 2006. Transcript of Meeting of the Commission with Members of the Advisory Committee on Nuclear Waste. Commissioners Jaczko pp. 44-45, Lyons pp. 48-49, and Merrifield (failure of the LLRW Policy Act) pp. 59-60.

[4] GAO Report, GAO-04-604, p. 49.

[5] September 17, 2007, Letter from Health Physics Society to Department of Energy Office of Regulatory Compliance: "Comments on Notice of Intent to Prepare an Environmental Impact Statement for the Disposal of Greater-Than-Class C (GTCC) Low-Level Radioactive Waste."

PROPOSED NEAR-TERM SOLUTION FOR DISPOSAL OF NON-DOE CLASS B AND C LOW-LEVEL RADIOACTIVE WASTES

Development of the GTCC disposal facility, or any new LLRW disposal facility, will take some years. In order to avoid a long period of time during which non-DOE users of radioactive materials would be without access to any disposal facility for their Class B and C wastes, it will be necessary to rely, for some period of time, on facilities that exist today. Here again, we look to the federal government to fashion a national solution: access to existing Department of Energy disposal facilities which dispose of DOE waste materials that are similar to non-DOE wastes classified as B and C under NRC regulations. According to a DOE Inspector General's report issued in 2001, there is excess capacity at disposal facilities operated by the Department for its own LLRW.[6] There are a number of such facilities around the country. Indeed, in order to fulfill the Congressional mandate for disposal of GTCC wastes, the Department of Energy is looking at its sites that currently have waste disposal operations. Specifically, DOE plans to include in its GTCC EIS analysis the WIPP repository, Hanford and Oak Ridge Reservations, Idaho and Los Alamos National Laboratories, Nevada Test Site, and Savannah River Site.

It should be noted that the Department of Energy is already contributing to a management solution for some non-DOE wastes. Through a program run by the Los Alamos National Laboratory, the Department's Off-Site Recovery Project (OSRP) collects and stores sealed radioactive sources from a wide variety of commercial and institutional users. This project exemplifies a federal resolution of a national waste problem — the kind of federal role that is needed today to resolve the Class B and C LLRW disposal problem in a timely, safe, and economical way.

[6] "Utilization of the Department's Low-Level Waste Disposal Facilities," DOE/IG-05-5, May 25, 2001.