

**Cal Rad Forum: Innovations Past and Future**  
**Richard S. Hodes, MD Honor Lecture**

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**ABSTRACT**

Users of radioactive materials in California formed the California Radioactive Materials Management Forum (Cal Rad) in 1983 to assist the State of California's response to the Low-Level Radioactive Waste Policy Act by encouraging the formation of an interstate compact and development of a regional disposal facility. Cal Rad was the nation's first such group and is one of the few remaining active radioactive materials users groups focusing on disposal of LLRW. Following ratification of the Southwestern Compact in 1987, Congressional consent in 1988, and designation of California as the Compact's host state, a number of organizations that use radioactive materials in Arizona, North Dakota, and South Dakota joined the association. Cal Rad has attempted to play a significant role in solving waste management and disposal problems in the Southwestern Compact region and the U.S. through legislative and regulatory programs, public involvement and education, and the creation of cooperative working relationships among organizations that use radioactive materials in the public and private sectors and government agencies.

This paper presents Cal Rad's views on current problems in LLRW disposal and our recommendations for a new national approach to resolve these problems.<sup>1</sup> In less than three years, on the nation's present course, organizations that use radioactive materials in 34-36 states will lose access to disposal facilities for the more radioactive classes (Class B and C) of their LLRW. In addition, disposal of much of the least radioactive — but highest volume waste class (Class A) — will be subject to monopoly control. Only one state, Texas, is pursuing development of a new LLRW disposal facility. Cal Rad's recommendations reported in this paper include proposed amendments to the Policy Act and appropriate roles for regulators, compact commissions, the federal government, and organizations that use radioactive materials in the public and private sectors. The paper will also discuss the status of these proposals, their outlook, and organizations on record in support of a new approach.

**INTRODUCTION**

Access to disposal capacity for low-level radioactive waste (LLRW) in the U.S. is limited and dwindling. On the nation's present course, by July 1, 2008, when access to the Barnwell, South Carolina disposal facility will be restricted to users of radioactive

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<sup>1</sup> These views are those of Cal Rad Forum and do not necessarily represent the views of the Southeast Compact Commission.

materials in the Atlantic Compact region, public and private organizations and most government agencies that use radioactive materials in thirty-four to thirty-six states, the District of Columbia, and Puerto Rico will have no place to dispose of their more radioactive categories of low-level radioactive waste (class B and C waste). Also at that time, one facility, Envirocare of Utah, will have monopoly control over disposal of the most voluminous (and least radioactive) category of low-level waste (class A waste) from these states.<sup>2</sup>

Cal Rad Forum believes it appropriate for Congress to revisit the Low-Level Radioactive Waste Policy Act and fashion a solution that assures all users of radioactive materials in the U.S. access to safe disposal facilities.

## **INNOVATIONS PAST**

In 1983, the California Radioactive Materials Management Forum (Cal Rad) sponsored legislation that established a process by which California would develop a low-level radioactive waste disposal facility in response to the requirements of the federal Low-Level Waste Policy Act (1980). This bipartisan, urgency legislation was passed with more than the required two-thirds vote in each house of the State Legislature. While most states, at that time, chose to rely on a state agency to accomplish this task at taxpayer expense, the California legislation called for the competitive selection of a private developer, called a "license designee," to select and characterize a site, obtain a license, and develop, operate, and eventually close a disposal facility — all with its own funds to be recovered through disposal fees. The legislation was also unique in that California committed to develop a disposal facility prior to joining an interstate compact. This private developer process resulted in the only proposed facility in the U.S ever issued a state license in conformance with the requirements of the Policy Act. The license was issued in 1993, and upheld by the State's courts in 1996.

California's proposed Ward Valley disposal project was never built. It fell victim to political opposition. Ward Valley is a remote location, on federal land, in California's Mojave Desert. Cooperation between the State of California and the federal government ended when Bill Clinton assumed the office of President in January 1993. Despite a favorable Supplemental Environmental Impact Statement issued by the Bureau of Land Management in September of that year, a favorable report issued by the National Academy of Sciences in 1995, a 1997 General Accounting Office report critical of the Clinton Administration's delays, and complaints by the Chairman of the Senate Energy and Natural Resources Committee and California's Senator Dianne Feinstein, the Administration refused to transfer the federal site to the State of California. Later, California Governor Gray Davis cancelled funding for the State's LLRW disposal regulatory program and withdrew from the State's lawsuit against the Interior Department initiated by his predecessor, Governor Pete Wilson, to force the land transfer. In 2002, the Legislature passed, and Governor Davis signed, legislation barring use of the Ward Valley site for a regional disposal facility.

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<sup>2</sup> Not including radioactive sealed sources and biological tissue waste that Envirocare is not presently licensed to dispose of.

While the California private developer model did not result in the creation of a disposal facility, it remains the only process to have even achieved a license for a new LLRW disposal facility in twenty-five years since passage of the Policy Act. This is the model that Texas now follows, and we anticipate that Texas will maintain the political will to succeed. However, Texas is the only state with an active program to site a new LLRW disposal facility.

## **INNOVATIONS FUTURE**

### **What's Wrong With The Current Approach?**

Upon enactment, in 2002, of California legislation denying use of the licensed Ward Valley site for a regional disposal facility, Cal Rad reviewed the existing national disposal situation including the then 22 year-old legislative framework for LLRW disposal and decided that changes were needed — changes that would require Congressional action. Some of the considerations that led to this decision follow. These considerations remain true today.

- In the twenty-five years since enactment of the Low-Level Radioactive Waste Policy Act and the Compact framework, no new disposal facilities responsive to the requirements of the Act, i.e., fully-licensed to dispose of waste classes A, B and C, have been developed.
- The states, by and large, have not demonstrated the political will to develop new disposal facilities. Only one state, Texas, is pursuing development of a new LLRW disposal facility. (The Texas Compact includes only two states, Texas and Vermont.)
- Congress has granted consent to ten interstate compacts, but the nation does not need ten disposal facilities. LLRW waste volumes have decreased since 1980 with the exception of wastes generated by the U.S. Department of Energy, which has its own disposal facilities.
- The July 1, 2008 deadline, when access to the Barnwell disposal facility will be restricted to the Atlantic Compact (South Carolina, Connecticut, and New Jersey) is only twenty-eight months away. Development of a new LLRW disposal facility can take many years. (The California Department of Health Services issued the Ward Valley license ten years after enabling state legislation was enacted. Resolution of legal challenges took another three years.)
- The outlook for assured access to low-level waste disposal facilities has worsened in the past year-and-a-half. In 2004, some, including the Government Accountability Office (GAO) and the U.S. Nuclear Regulatory Commission were hopeful that the State of Utah would permit disposal of low-level waste classes B and C at the Envirocare facility. However, in 2005, Utah enacted legislation that eliminates this possibility. Furthermore, a recent report in the trade press indicates that Utah's Governor opposes expansion of the Envirocare facility — a proposal now before state regulators.<sup>1</sup> In addition to regulatory approval, Utah law requires that a license amendment receive the approval of both the Legislature and the Governor.

- The federal Policy Act has left a legacy of litigation. None of the lawsuits has led to development of a new disposal facility, nor is the remaining case, now before the U.S. Supreme Court — Southeast Compact Commission and States of Alabama, Florida, Tennessee, and Virginia v. State of North Carolina — likely to do so. Illustrative of the states' lack of political will to develop new disposal facilities was Nebraska's settlement of a lawsuit, brought by the Central Interstate Compact Commission, for \$140 million rather than approve a license application for a LLRW disposal facility.

**Proposed Solutions: Amend the Policy Act to provide a role for the federal government in assuring availability of safe disposal capacity for low-level radioactive waste.**

Based on the states' track record, Congress and the Administration might reasonably conclude that they have failed to provide the necessary disposal infrastructure and are unlikely to do so.<sup>2</sup> Hopefully, recognition that the states won't do the job and that the nation does not need ten low-level waste disposal facilities would lead to a decision by Congress to amend (not repeal) the Act and that the federal government should assume responsibility for disposal of "commercial" low-level radioactive waste — at least for those thirty-six states not in compacts with existing regional disposal facilities, the District of Columbia, and Puerto Rico. (Thirty-four states if the Texas project is successful.) For the near-term, Cal Rad Forum has suggested use of the Department of Energy's own disposal facilities for this purpose. This proposal might find support in the conclusions of a DOE Inspector General's report that the Department's disposal facilities are under-utilized.<sup>3</sup> The report found that DOE's Nevada and Hanford facilities are being used at less than 50 percent capacity. With respect to this recommendation, it is worth noting that a recent report of the Government Accountability Office (GAO)<sup>4</sup> recommends that DOE and NRC evaluate the feasibility of using DOE sites for disposal of non-Greater-Than-Class-C waste from sealed radiological sources gathered in the DOE's Offsite Source Recovery Program (OSRP). This proposal exemplifies the concept of a federal solution to a problem that most states lack the political will to address. However, there is clearly a need for a comprehensive solution that would go beyond waste from sealed sources only. Indeed, the same GAO report cites the mid-2008 Barnwell access cutoff and anticipates that "The increasing quantities of non-GTCC waste that will not have a commercial disposal pathway could heighten interest in using DOE sites for the disposal of this waste."

A long-term national solution might include Congressional authorization for the development and operation of one or two LLRW disposal facilities, possibly by the Department of Energy or commercial entities, on federal land, under direct regulation by the U.S. Nuclear Regulatory Commission pursuant to its regulations at 10 CFR 61. As Cal Rad noted in our testimony to the Senate Energy Committee on September 30, 2004:

"Disposal of LLRW has been carried out safely and justifies current and future use of near surface disposal pursuant to the NRC's regulations at title 10 part 61 of the Code of Federal Regulations. The still-operating disposal facilities at Barnwell, SC and Richland, WA have operated safely for many years. Such problems as have occurred at old facilities, e.g., migration of tritium due to disposal of liquid wastes at

the Beatty, NV disposal facility that was closed in 1993, are addressed by the current regulations. These regulations, adopted in 1982, are comprehensive. Among the issues addressed are disposal site selection criteria, facility design, waste classification, waste form and packaging (e.g., requirements for solidification of liquids), financial assurances, and long-term post-closure institutional controls.”<sup>5,6</sup>

## **ORGANIZATIONS ON RECORD IN SUPPORT OF A NEW NATIONAL LOW-LEVEL WASTE DISPOSAL POLICY**

In addition to Cal Rad Forum, a number of organizations are on record, either in position statements or in testimony to the Senate Energy and Natural Resources Committee, indicating that the current system is broken and/or calling for a change in the national policy of regional compacts enacted over twenty-five years ago. We encourage additional radioactive materials users organization and associations to add their voices to the discussion. Organizations and associations on record include:

The Health Physics Society  
The American Nuclear Society  
Southern California Edison Company, and  
The Council on Radionuclides and Radiopharmaceuticals (CORAR).

Of particular interest are the comments of the NRC included in the GAO report of June 2004 (Appendix V of the Report):

“The current report is a sequel to GAO’s 1999 report, “Low-Level Radioactive Wastes: States Are Not Developing Disposal Facilities” (GAO/RCED-99-238). That report concluded that none of the States’ or compacts’ efforts to develop new disposal capacity had been successful and the state efforts to do so had ‘essentially stopped.’ This earlier report also examined alternatives to the current system for development of new disposal capacity in the U.S., but did not recommend any of them. Appendix II of the current report updates these alternatives. We believe that it is now time for GAO to explore these alternatives further because the future availability of disposal capacity and the costs of disposal under the current system remain highly uncertain and LLRW generators need predictability and stability in the national disposal system. We acknowledge that the potential approval for Envirocare to accept Class B and C wastes and licensing of a LLRW disposal facility in Texas could significantly improve the current LLRW disposal system in the U.S. At the same time, the nearly 20 years of experience under the Low-Level Radioactive Waste Policy Amendments Act of 1985 (LLRWPA) has demonstrated the difficulties in siting and licensing a LLRW facility. Not one new facility has been developed in this time under the LLRWPA. Therefore, we believe it is in the national interest to begin exploring the alternatives identified in Appendix II that would potentially provide a better legal and policy framework for new disposal facilities for commercial generators of LLRW.” (Emphasis added.)<sup>7</sup>

At a meeting of the Nuclear Regulatory Commission and its Advisory Committee on Nuclear Waste held on January 11, 2006, comments by some of the Commissioners indicated concern about the Low-Level Radioactive Waste Policy Act, failure to develop new disposal facilities pursuant to the Act, and the approaching deadline of July 1, 2008 when access to the Barnwell disposal facility will be limited to radioactive materials users in the Atlantic Compact states and most organizations that use radioactive materials in the U.S. will have no place to dispose of their Class B and C low-level radioactive waste.<sup>8</sup>

Regrettably, the Low-Level Waste Forum opposes suggestions for modification of the Act insisting that, "States and compacts must be allowed to pursue that goal [to provide safe, environmentally sound, reliable and permanent access for the disposal of all commercial low-level radioactive waste generated in the nation] unfettered, allowing them to identify solutions appropriate to the needs of their generators and their unique political situations." (Emphasis added.) In a "Discussion of Issues" statement, adopted September 22, 2005, the LLW Forum recognizes the significance of the July 1, 2008 date but rejects solutions proposed by others and offers none of its own.<sup>9</sup> We encourage state and compact officials to think more inclusively and less parochially. For example, the Southwestern Compact Commission has encouraged California's Governor to explore the possible use of DOE disposal facilities for "commercial" low-level radioactive waste.

### **SUMMARY AND CONCLUSION: THE NEED FOR CONGRESS TO REVISIT THE LOW-LEVEL RADIOACTIVE WASTE POLICY ACT IS URGENT.**

Time is of the essence. July 1, 2008 and the end of disposal in South Carolina for LLRW generated in thirty-six states, the District of Columbia, and Puerto Rico are not far off.

Cal Rad believes that amendment, not repeal, of the Low-Level Waste Policy Act is necessary. The states of Washington and South Carolina have operated their disposal facilities in good faith and, under the existing statutory scheme, provide assured access to disposal facilities for organizations that use radioactive materials in fourteen states — "The Fortunate Fourteen" — in the Northwest, Rocky Mountain, and Atlantic Compacts. But it is clear that the existing framework has failed in remaining states and territories (possible exception of Texas and Vermont) and should be modified.

Assurance that future disposal capacity will be available is vital. Lack of such assurance has already curtailed some uses of radioactive materials in research. The nation's LLRW disposal infrastructure is inadequate and, without action by Congress, will become much worse. Beneficial uses of radioactive materials by industries, research and medical institutions, utilities, and agencies and departments of state and federal governments are jeopardized by the current and projected future inadequate disposal infrastructure. Lack of disposal capacity could stop or impede some research, medical, and industrial uses of radioactive materials and have a detrimental impact on the quality of life and health.

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<sup>1</sup> *International Radioactive Exchange*, Vol. 25, Nos. 1 & 2, January 20, 2006, page 3.

<sup>2</sup> See, for example, the Audit Report, "National Low-Level Waste Management Program," DOE/IG-0462 by the U.S. Department of Energy, Office of Inspector General's Office of Audit Services, February 2000.

<sup>3</sup> "Utilization of the Department's Low-Level Waste Disposal Facilities," DOE/IG-05-5, May 25, 2001.

<sup>4</sup> "NUCLEAR SECURITY: DOE Needs Better Information to Guide Its Expanded Recovery of Sealed Radiological Sources," GAO-05-967, September 2005, pp. 7, 28, 30.

<sup>5</sup> S. HRG. 108-756, September 30, 2004.

<<http://www.access.gpo.gov/congress/senate/senate08ch108.html>>

<sup>6</sup> "Assuring Safe Disposal of Low Level Radioactive Waste: Status, Problems and Proposed Solutions." Testimony of Cal Rad Forum before the Senate Energy and Natural Resources Committee, September 30, 2004. <<http://www.calradforum.org/llrw.html>>

<sup>7</sup> "LOW-LEVEL RADIOACTIVE WASTE. Disposal Availability Adequate in the Short Term, but Oversight Needed to Identify Any Future Shortfalls," GAO-04-604, June 2004. Appendix V: Comments from the Nuclear Regulatory Commission, May 25, 2004. Page 49.

<sup>8</sup> "Transcript. Meeting of the Nuclear Regulatory Commission with the Advisory Committee on Nuclear Waste (ACNW)," Wednesday, January 11, 2006. Pages 41, 44, 48-49, 59-60.

<<http://www.nrc.gov/reading-rm/doc-collections/commission/tr/2006/20060111b.pdf>>

<sup>9</sup> "DISCUSSION OF ISSUES: Management of Commercial Low-Level Radioactive Waste," September 22, 2005. <<http://www.llwforum.org>>