

## Position Statement #11

# Disposal of Low-Level Radioactive Waste



The American Nuclear Society (ANS) believes that the disposal of low-level radioactive waste (LLW) in the United States is safe and secure. There are no technical barriers to transporting,<sup>1</sup> processing, or disposing of LLW safely. However, LLW is defined in laws and regulations according to its origin, as opposed to its intrinsic hazard, which leads to inconsistencies in disposal requirements and options. Also, there are policy challenges to siting new facilities due to current laws, which bring uncertainty to continued access to disposal as well as the associated cost.

The Low-Level Radioactive Waste Policy Amendments Act of 1985 gave the states responsibility for commercial LLW disposal, encouraging states to enter into compacts, with each compact sharing a common disposal facility. Most states have entered into compacts; however, only one new disposal facility, the Texas Compact Waste Facility in Andrews County, Texas, operated by Waste Control Specialists, has been built since the Act was passed. The three other commercial LLW disposal sites are the Richland, Washington, facility, operated by US Ecology;<sup>2</sup> the Clive, Utah, facility, operated by EnergySolutions;<sup>3</sup> and the Barnwell, South Carolina, facility, operated by EnergySolutions.<sup>4</sup> The facilities at Clive and Andrews are the only sites available to most generators<sup>5</sup> of all classes of waste. Furthermore, considering that the Andrews facility is currently the only site to accept Class B and Class C LLW for a large majority of waste generators, the lack of alternative options introduces economic risk and potential instability for continued access.

ANS encourages policymakers at the state and federal level to evaluate and address the hurdles to opening new sites so that alternative options become available in the future. For example, they should evaluate whether the compact system is fulfilling its original

intent in aiding the siting of facilities, or whether it is a hindrance, as well as options for improving the current system or revising the law through an act of Congress. Such an evaluation could assess disposal alternatives and costs for various types of waste available to generators from various compacts. Also, the consistency among disposal practices for various types of LLW should be addressed to help ensure that risks are managed similarly. Options for expanding public and private sector partnerships should be explored to efficiently utilize disposal capacity and resources while minimizing risk.

Currently, waste that has very low-levels of radioactivity, referred to as low-activity waste (LAW),<sup>6</sup> is managed through regulatory exemptions. Excessive regulation of these wastes results in increased handling and transportation, and consumes resources unnecessarily. Policymakers and regulators should evaluate the technical conditions under which LAW, including mixed LAW, can be disposed of in Resource Conservation and Recovery Act Subtitle C hazardous waste facilities or solid waste landfills. Clear regulatory guidance in this area would encourage consistency and efficiency in the way states manage and dispose of LAW, while allowing greater flexibility in disposal options.

The most risk-significant LLW is Greater-Than-Class C (GTCC) waste.<sup>7</sup> ANS supports clarity in the regulations, including the development of a regulatory basis for the disposal of certain GTCC waste through means other than deep geologic disposal, including near-surface disposal, as appropriate. It is ANS's position that disposal of GTCC waste should be risk-informed. Given the diverse characteristics of GTCC waste (different radionuclide inventories, range of physical conditions, etc.), the disposal technology (geologic repository, intermediate-depth borehole emplacement, enhanced

near-surface trench, or above-grade vault facilities) should be commensurate with the risk posed.

ANS supports the continuation of national programs to increase access to disposal for certain types of sealed sources.<sup>8</sup> Through a program run by Los Alamos National Laboratory, the Off-Site Recovery Project collects and stores sealed radioactive sources from a wide variety of commercial and institutional users. Also, the Source Collection and Threat Reduction Program, administered by the Conference of Radiation Control Program Directors, is providing sealed source licensees in states that do not have access to a low-level radioactive waste disposal facility an opportunity to dispose of certain unwanted radioactive sealed sources at the Clive, Utah, facility.

In summary, ANS supports a risk-informed, performance-based approach to LLW disposal. This calls for increased flexibility and efficiency with respect to LLW options that pose little hazard, while at the same time requiring continued vigilance in oversight and increased disposal access for other waste types, such as discrete radioactive sources. ANS supports the Nuclear Regulatory Commission's efforts to help risk-inform the regulations in 10 CFR Part 61, enabling licensees to use either site-specific waste acceptance criteria based on a site's performance and intruder assessments or the current waste classification tables.<sup>9</sup> Cooperation between the state and federal regulatory authorities, as well as the public and private sectors, is necessary to increase the effectiveness and ensure the continued safety of LLW disposal.

## Reference

1. See ANS Position Statement #18, [Transportation of Radioactive Materials](#).
2. The Richland, Washington site is restricted to the Northwest and Rocky Mountain Compacts.
3. The Clive, Utah site accepts only Class A waste.
4. The Barnwell, South Carolina site is restricted to the Atlantic Compact (South Carolina, Connecticut, and New Jersey).
5. Although the Texas Compact includes only the states of Texas and Vermont, the Texas Compact Commission has approved out-of-compact disposal, opening up access for Class B and Class C waste disposal to the 36 states that lost disposal access with the closing of Barnwell to states outside of the Atlantic Compact (South Carolina, Connecticut, and New Jersey).
6. The term "low-activity waste" (LAW) does not have a legal definition, but is often used to refer to wastes with a small fraction of the Class A limits in 10 CFR Part 61.
7. Greater-Than-Class C (GTCC) waste (waste that exceeds the concentration limits for Class C waste) is the responsibility of the U.S. Department of Energy, and includes materials such as contaminated equipment and scrap metal from dismantling nuclear reactor components, filters, resins, soil, and sealed radioactive sources.
8. A sealed source is any radioactive material or by-product encased in a capsule designed to prevent leakage or escape of the material and can range from Class A to GTCC. They are used in various applications in medicine, agriculture, industry, transportation, construction, geology, mining, research, etc., for example, a teletherapy source, or a well-logging source.
9. Classification of LLW is performed in accordance with the waste classification tables in 10 CFR §61.55.



## American Nuclear Society

Communications & Outreach Department  
555 N. Kensington Ave.  
La Grange Park, IL 60526-5592  
708-352-6611  
outreach@ans.org  
ans.org