



HEALTH  
PHYSICS  
SOCIETY

## LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT

### POSITION STATEMENT OF THE HEALTH PHYSICS SOCIETY\*

Adopted: May 1995

Revised: July 2017

Contact: Brett Burk  
Executive Director  
Health Physics Society  
Telephone: 703-790-1745  
Fax: 703-790-2672  
Email: [HPS@BurkInc.com](mailto:HPS@BurkInc.com)  
<http://www.hps.org>

With reference to the current regulatory status of the disposal of low-level radioactive waste (LLW), the Health Physics Society takes the following positions:

1. **The goal of managing LLW is to ensure the safety of workers and the public and to protect the environment. To achieve this goal, disposal, not long-term storage, is the best and safest long-term approach.**
2. **The Health Physics Society believes that disposal options should be available to waste generators nationwide.**
3. **Risk-informed waste disposal requirements for radioactive materials should be based on sound science and consistent with the risk posed to public health and not based on its origins and statutory definitions.**

Low-level radioactive waste (LLW) is an inevitable byproduct of beneficial uses of radioactive materials in the United States. It arises from medical research, diagnosis and treatment of diseases, industrial processes, national defense, and electric power generation, all of which are vital to our national interests. LLW needs disposal methods and sites so society can continue to enjoy the full benefits of the use of radioactive materials. Safe and effective methods and standards for processing, transport, and disposal of LLW are well established.

The 1980 Low-Level Radioactive Waste Policy Act (LLWPA), as amended in 1985, set up a framework for states to require safe disposal of Class A, B, and C LLW and encouraged the creation of regional compacts to develop a network of disposal sites. This framework has achieved only a few of its purposes, although a new regional disposal facility in Texas has been licensed and constructed, and it is now operational. It is the first and only new regional disposal facility opened since Congress enacted the LLWPA.

On 1 July 2008, the regional disposal facility in Barnwell, South Carolina, prohibited access by nonregional generators. At that time, Class B/C LLW generated in states not belonging to the Atlantic Interstate Low-Level Radioactive Waste Management Compact<sup>1</sup> was stranded with few options available other than long-term storage. This predicament affected LLW generators in government, commercial, and private sectors, especially generators that possess orphaned, disused sealed sources exceeding the thresholds established by the International Atomic Energy Agency in its *Code of Conduct on the Safety and Security of Radioactive Sources*.

Federal and state regulatory agencies and other stakeholders sought solutions to provide safe and flexible disposal options for waste streams that were orphaned at this time. The U.S. Nuclear Regulatory Commission revised its 1995 *Branch Technical Position on Concentration Averaging and Encapsulation*, which provided safe approaches to better classify radioactive waste in a risk-informed manner. The U.S. Department of Energy/National Nuclear Security Administration and the Conference of Radiation Control Program Directors set up the Source Collection and Threat Reduction Program to collect and dispose of disused sealed sources that could potentially be used for malevolent purposes.

Over the past decade, federal and state regulatory agencies, as well as stakeholders in the private sector, established safe, flexible, and innovative approaches to process and reduce the volumes of Class B/C LLW generated. Disposition pathways have emerged for disposal of LLW with very low levels of radioactivity.

Radioactive waste management practices have matured considerably over the past 40 years. Certain types of radioactive wastes, referred to as greater-than-Class C LLW (GTCC LLW), formerly were considered not suitable for near-surface disposal pursuant to federal regulations in almost all cases. However, advancements in science and engineering have demonstrated that wastes with high levels of radioactivity can be safely disposed of in modern, near-surface disposal facilities. Moreover, federal agencies have established policies and regulations to determine whether such radioactive wastes should be disposed of in a near-surface disposal facility or require greater isolation from the biosphere in a geologic repository. The Health Physics Society recognizes the significant progress in the management of LLW over the last 20 years, but additional challenges exist for federal agencies to provide a disposition pathway for GTCC LLW that is currently orphaned.

Based on its positions stated above, the Health Physics Society recommends that:

1. Approaches to establish LLW disposal practices based on site-specific analyses showing protection of public health for the duration of compliance periods be consistent with the regulations the U.S. Nuclear Regulatory Commission established in 10 CFR 61; such constraints should also include defense-in-depth measures, such as site features and engineered barriers, to further protect public health and safety.
2. Policy makers and federal and state regulatory agencies set up or enhance regulatory processes, waste-processing treatment requirements, and disposal criteria that support risk-informed decisions for the disposal of high-level radioactive waste (HLW), transuranic (TRU) waste, and LLW based on the degree of isolation needed to protect public health.

---

<sup>1</sup> The Atlantic Interstate Low-Level Radioactive Waste Management Compact includes Connecticut, New Jersey, and South Carolina.

3. The U.S. Nuclear Regulatory Commission create disposal criteria for GTCC LLW.
4. The U.S. Nuclear Regulatory Commission revise 10 CFR 61 to:
  - a. Remove the transuranic exclusionary language from the definition of “waste” in 10 CFR 61, §61.2, consistent with the LLWPA Amendments of 1985, and
  - b. Establish disposal criteria for waste with transuranic radionuclides with a half-life longer than five years with concentrations greater than 3,700 becquerels per gram based on the degree of isolation of the waste needed to protect public health.

---

\*The Health Physics Society is a nonprofit scientific professional organization whose mission is excellence in the science and practice of radiation safety. **Since its formation in 1956, the Society has represented the largest radiation safety society in the world, with a membership that includes scientists, safety professionals, physicists, engineers, attorneys, and other professionals from academia, industry, medical institutions, state and federal government, the national laboratories, the military, and other organizations.** Society activities include encouraging research in radiation science, developing standards, and disseminating radiation safety information. Society members are involved in understanding, evaluating, and controlling the potential risks from radiation relative to the benefits. Official position statements are prepared and adopted in accordance with standard policies and procedures of the Society. The Society may be contacted at 1313 Dolley Madison Blvd., Suite 402, McLean, VA 22101; phone: 703-790-1745; fax: 703-790-2672; email: [HPS@BurkInc.com](mailto:HPS@BurkInc.com).