

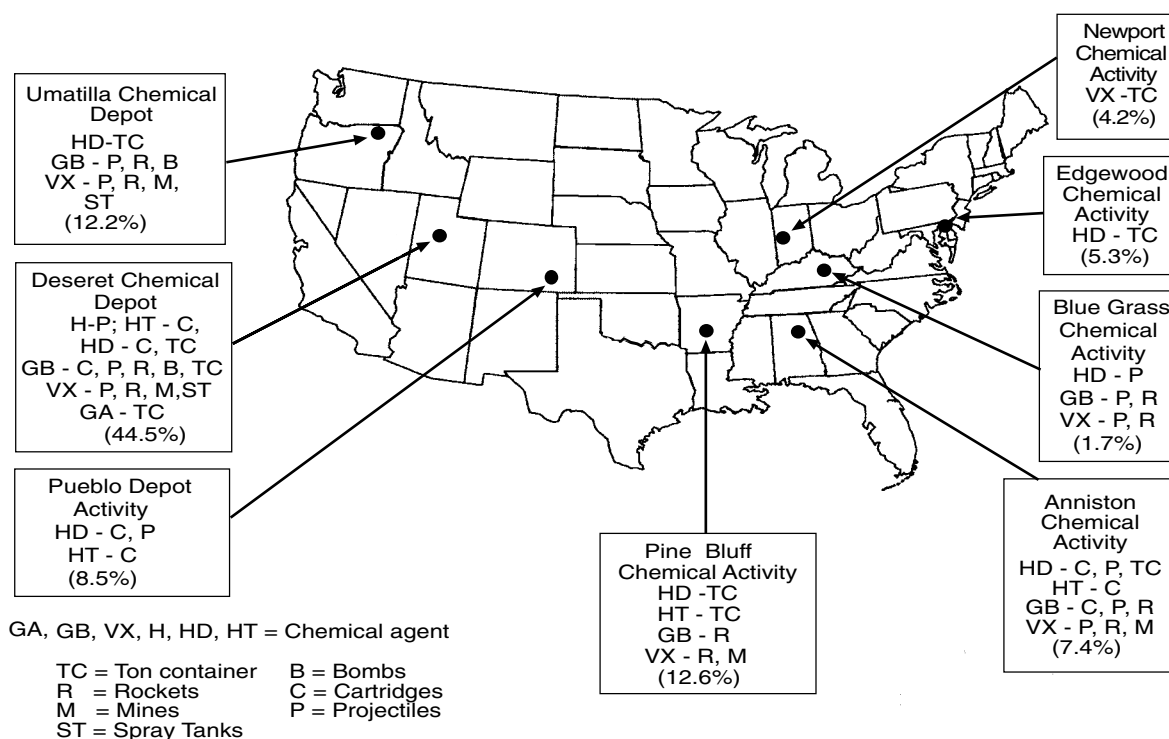
REVIEW OF CLOSURE PLANS FOR THE BASELINE INCINERATION CHEMICAL AGENT DISPOSAL FACILITIES

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Decontaminated chemical bomb casings from the Johnson Atoll Chemical Agent Disposal System, the first of the Army's nine chemical agent destruction facilities to complete operations and close. SOURCE: U.S. Army photo.

For over half a century, the United States has maintained a stockpile of chemical weapons at nine Army depots distributed around the country. At its peak, this stockpile contained more than 30,000 tons of chemical nerve agent and mustard agent, stored in weapons and bulk storage containers. Since 1985 the Army Chemical Materials Agency has been working to implement congressional legislation calling for the complete destruction of stockpiled chemical weapons. Today, with less than 25% of the original stockpile remaining, the Army is turning its attention to the safe closure of the facilities used to dispose of the chemical agents. This report focuses on the closure of four chemical agent incineration facilities and one research facility that are nearing the end of their missions. It recommends measures to ensure that the sites close safely, efficiently, and in accordance with local and federal regulatory requirements.



The location and original size (percentage of original chemical stockpile) of eight continental U.S. storage sites. SOURCE: OTA. 1992.

With the closure of the chemical weapons destruction facilities in Anniston, Alabama; Pine Bluff, Arkansas; Tooele, Utah; and Umatilla, Oregon, and the test facility at Deseret Chemical Dept in Utah, 90 percent of the United States' chemical weapons stockpile will have been destroyed. The remaining ten percent of the stockpile will be disposed of over the next decade using neutralization technology.* To successfully conclude operations and be closed, the sites must be decontaminated and the land reclaimed, taking into careful consideration the safety of workers and local communities. This report examines the unique challenges associated with the safe and efficient closure of each of the five sites, while recommending ways to enhance workers' expertise and improve the quality of all closure activities.

At the time of this report, the planning for closure of all five of the sites is progressing under the competent leadership of the closure managers, who regularly share lessons learned. Nevertheless, there

are several ways in which increased centralized coordination and guidance from the leadership of both the Army and its contractors could improve overall outcomes. These include the establishment and tracking of parameters and metrics specific to closure-related activities; increased use of information sharing technologies to promote sound decision-making; negotiation for regulatory adjustments, and improvement of testing procedures.

*For more information on disposal of the remaining stockpile, visit the U.S. Army Element Assembled Chemical Weapons Alternatives (ACWA) Web site: www.pmacwa.army.mil.

Updated information on the U.S. Army's Chemical Materials Agency and the chemical weapons destruction program is available at www.cma.army.mil.

Closure-Specific Evaluations

The skills required for operation of the disposal sites differ from those required for closure. Establishing parameters and metrics that are specific to closure activities can help the Army achieve its safety and cost-minimizing goals. The Army should encourage the timely delivery of reports that track those closure-specific parameters and metrics at both the program level and the project level, in order to enable wise management decisions.

Expand Knowledge Sharing

There are a variety of technologies available that can improve communication about closure operations and site maintenance. Though workers communicate verbally about agent disposal operations, the Army's lessons learned database is underutilized, and contains only a few accessible resources related to facility closure. This represents a lost opportunity to pass on valuable institutional knowledge. In response, the Army should encourage its contractors to use its lessons learned system more frequently and in such a way that data on closures are searchable by other users.

A contractor-run database called "eRoom" functions as a powerful sharing and management tool useful for developing new documents and for finding information pertinent to specific problems. The Army should consider expanding eRoom usage and, if deemed appropriate, work with its contractor to increase employee access.

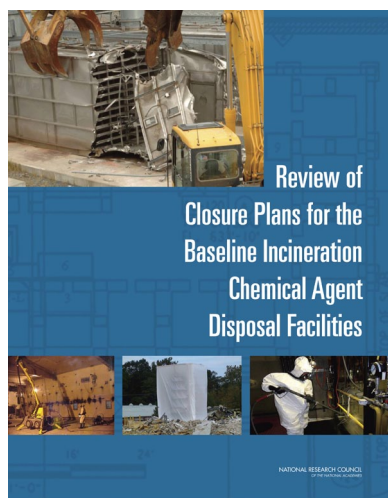
Regulatory Negotiations

The five facilities are subject to differing local safety and environmental regulations, many of which were devised early in the agent disposal program. Because the closure of a facility only begins when all stocks of chemical agent have been destroyed, the risk of exposure to agent is significant-

ly reduced. To increase the efficiency of the closure operations, the Army should consider negotiating with the regulatory community to obtain less restrictive, but still safe, regulatory practices that account for this lowered risk of harm.

Improving Testing Procedures

As a time- and cost-saving measure, the Army has recommended that chemical disposal facilities be demolished using commercial construction equipment whenever possible. For this to occur, a site must first be proven safe for workers and for the public. There are two essential methods for doing this: the first is the occluded space survey, in which highly trained, experienced personnel identify confined areas that could be contaminated with agent (such as cracks in concrete and internal cavities of equipment) for testing and cleanup. The second is the unventilated monitoring test, in which equipment and areas are sealed off, allowing the collection and measurement of vapors emitted by any remaining chemical agent and facilitating the detection of contaminated areas. Guidance from senior level leadership could be improved to increase the uniformity and integrity of these two tests. By centralizing direction and collecting all test data in one place, the Army could more easily analyze and learn from accumulated data, and communicate the results of its analysis to workers at future closure sites.



Committee to Review and Assess Closure Plans for the Tooele Chemical Agent Disposal Facility and the Chemical Agent and Munitions Disposal System: **Peter B. Lederman**, Hazardous Substance Management Research Center (retired), Chair; **Gary S. Groenewold**, Idaho National Laboratory; **Deborah L. Grubbe**, Operations and Safety Solutions, LLC; **John R. Howell (NAE)**, University of Texas, Austin; **Todd A. Kimmell**, Argonne National Laboratory; **Kalathil E. Philipose**, Atomic Energy of Canada Limited (retired); **Louis T. Phillips**, Resource: PM; **Dann y D. Reible (NAE)**, University of Texas, Austin; **W. Leigh Short**, Woodward Clyde & Associates (retired); **Leonard M. Siegel**, Center for Public Environmental Oversight; **David A. Skiven**, Worldwide Facilities, General Motors Corporation (retired); **Sheryl A. Telford**, DuPont Corporate Remediation Group Director; **Lawrence J. Washington**, The Dow Chemical Company (retired)

Staff: **Nancy T. Schulte**, Study Director; **Harrison Pannella**, Senior Program Officer; **Nia D. Johnson**, Senior Research Associate; **Alice V. Williams**, Senior Program Assistant

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