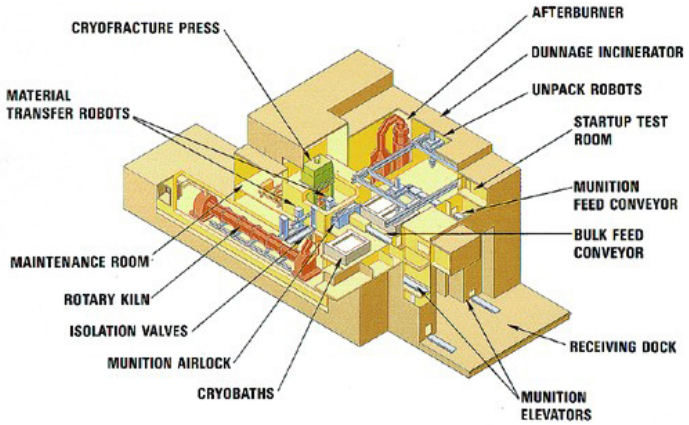
Chemical Demilitarization (CHEM DEMIL) Program

Executive Summary

- Army testing of stockpile and nonstockpile systems in the Chemical Demilitarization Program has been adequate to ensure the safe and efficient disposal of chemical warfare material.
- All operational testing (OT) was conducted in accordance with DOT&E-approved test plans.
- The Army conducted successful testing at Anniston, Alabama; Umatilla, Oregon; and Newport, Indiana, stockpile facilities.
- The Army conducted successful testing of nonstockpile programs for two Explosive Destruction Systems as well as for the Munitions Assessment and Processing System.
- Agent destruction operations were completed at the Aberdeen, Maryland, stockpile facility.
- Based on the current program schedule, disposal operations of the U.S. chemical stockpile will fail to meet both the original Chemical Weapons Treaty deadline of April 2007 and the extension to April 2012.

System

- The Chemical Demilitarization Program involves the destruction of lethal chemical agents, chemical munitions, and nonstockpile chemical warfare material.
- Four stockpile disposal facilities are employing the baseline chemical weapons disassembly and incineration process:
  - Anniston, Alabama
  - Pine Bluff, Arkansas
  - Tooele, Utah
  - Umatilla, Oregon
- Four stockpile disposal facilities are employing, or plan to employ, chemical neutralization of agents followed by post-treatment of the neutralized products:
  - Blue Grass, Kentucky
  - Aberdeen, Maryland
  - Newport, Indiana
  - Pueblo, Colorado
- There are three nonstockpile fixed facilities:
  - Pine Bluff Ton Container Destruction Facility
  - Pine Bluff Binary Destruction Facility
  - Munitions Assessment and Processing System Facility
- There are four nonstockpile transportable systems:
  - Explosive Destruction System – 1
  - Explosive Destruction System – 2
  - Large Item Transportable Access and Neutralization System
  - Single Chemical Agent Identification Set Access and Neutralization System



NOTIONAL DESTRUCTION FACILITY

Mission

- The United States is using the Chemical Demilitarization Program to comply with the Chemical Weapons Convention. This is an arms control and nonproliferation treaty that requires the destruction of the U.S. stockpile of lethal chemical agents, chemical munitions, and nonstockpile chemical warfare material.
- The Nonstockpile Chemical Material Project is responsible for the destruction of nonstockpile chemical warfare material, including the components of binary chemical weapons, miscellaneous chemical warfare material, recovered chemical weapons, former production facilities, and buried chemical warfare material.

Activity

- Chemical Demilitarization Programs are not traditional acquisition programs for DOT&E oversight. DOT&E oversight began in 1999 when Congress directed that DoD oversee these programs as major defense acquisition programs due to cost and schedule overruns.
- The test and evaluation program for each stockpile incineration disposal facility consists of several phases:
  - The developmental testing (DT) phase consists of subsystem component testing without agent.
  - The DT/OT phase employs surrogate agents in all test events, culminating in trial burns of the furnaces and end-to-end operations of the facility.
  - The OT phase consists of agent trial burns and initial operations with agent.
- OT supports a decision to proceed to full operational status for a specific agent/munition campaign. For example, one campaign would destroy eight-inch projectiles equipped

with Sarin nerve agent, another would destroy M55 rockets with Sarin, and a third would destroy one-ton containers of mustard blister agent. After completion of a campaign, the facility reverts to OT status for the next planned campaign. This process is repeated until destruction of all agent/munition configurations in the site's stockpile is complete. DOT&E monitors the test activity and independently analyzes test data for all stockpile facilities and nonstockpile systems.

- The Aberdeen stockpile destruction facility completed one-ton container cleanout in February 2006 and is now in closure operations, where all of the destruction equipment and buildings are dismantled or destroyed. As of August 2006, approximately 40 percent of the total U.S. chemical weapons stockpile (originally 31,496 agent tons) had been destroyed. FY06 test activity for stockpile facilities and nonstockpile systems is summarized in the table below.

Assessment

- Army testing of stockpile and nonstockpile systems in the Chemical Demilitarization Program has been adequate to ensure the safe and efficient disposal of chemical warfare material. The U.S. Army Material Systems Analysis Activity is providing effective independent oversight of the testing of both stockpile and nonstockpile programs. Their expertise and vigilance have resulted in the early identification and resolution of the problems that surface from time-to-time. Fully integrated operational demonstrations that confirm all phases of operations (including preparation, destruction/neutralization, and disposal) remain critical prerequisites before transition to operations with live agents.
- Based on the current program schedule, disposal operations of the U.S. chemical stockpile will fail to meet both the original Chemical Weapons Treaty deadline of April 2007 and the extension to April 2012.

Recommendations

- Status of Previous Recommendations. There were no FY05 recommendations for the Chemical Demilitarization Program.
- FY06 Recommendations. None.

Chemical Demilitarization Test and Evaluation Activity

Facility/System	Technology	FY06 Activity	Agent Tested	Planned FY07 Activity
Anniston	Incineration	OT	VX M55 Rockets	OT
Umatilla	Incineration	OT	Sarin (a.k.a. GB) 8-inch and 155 mm Projectiles	OT
Pine Bluff	Incineration	Operations	Sarin (a.k.a. GB) M55 Rockets	OT
Newport	Neutralization	OT	VX Ton Container Processing	OT
Explosive Destruction System Version 1	Neutralization	OT	Mustard (a.k.a. HD) 4.2-inch Mortar Projectiles	OT
Explosive Destruction System Version 2	Neutralization	DT/OT, OT	Mustard (a.k.a. HD) 4.2-inch Mortar Projectiles	OT
Munitions Assessment and Processing System	Neutralization	OT	Phosgene (a.k.a. CG) 75 mm Recovered Projectiles	OT
Pine Bluff Binary Destruction Facility	Neutralization	OT, Operations	Binary Chemical Munition Precursors in Large Storage Drums	Operations, Facility Destruction
Pine Bluff Ton Container Destruction Facility	Neutralization	OT, DT/OT	Trace Agents during Ton Container Processing	OT, DT/OT