

**Department of Defense**  
**Chemical Demilitarization Program**  
**Semi-Annual Report to Congress**



**March 2013**

**Office of the Under Secretary of Defense  
for Acquisition, Technology and Logistics**

The estimated cost of this report for the Department of Defense is approximately \$2,460 in Fiscal Years 2012 - 2013. This includes \$1,000 in expenses and \$1,460 in DoD labor. Cost estimate generated on February 4, 2013 Ref ID: 0-F75E216

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## EXECUTIVE SUMMARY

As required by section 1521(j) of title 50, United States Code (as amended), the March 2013 Department of Defense (DoD) Chemical Demilitarization Program (CDP) Semi-Annual Report to Congress presents information describing the Department's progress toward destruction of the U.S. stockpile of lethal chemical agents and munitions by the Chemical Weapons Convention (CWC) destruction deadline of April 29, 2012, but not later than December 31, 2017; and provides the status of ongoing actions to accelerate the program.

The U.S. Army Chemical Materials Activity (CMA) was responsible for the destruction of approximately 90 percent of the U.S. stockpile declared under the CWC and located at seven sites: Johnston Atoll; Aberdeen, Maryland; Anniston, Alabama; Tooele, Utah; Pine Bluff, Arkansas; Newport, Indiana; and Umatilla, Oregon. The Assembled Chemical Weapons Alternatives (ACWA) program is responsible for destroying the remaining 10 percent of the declared chemical weapons stockpile located at Pueblo, Colorado, and Blue Grass, Kentucky.

The CMA completed its destruction mission on January 21, 2012, and continues to work towards closure of each site. The ACWA program personnel are preparing to destroy the remaining U.S. chemical weapons stockpiles in Colorado and Kentucky. At the Pueblo Chemical Depot in Colorado, construction is complete and systemization activities are underway. At the Blue Grass Army Depot in Kentucky, construction is well underway and systemization activities have begun.

While the currently planned destruction operations at the Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP) and the Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) are not expected to accommodate the December 31, 2017, congressionally mandated destruction deadline, the Department will continue working to minimize the time required to complete destruction of the remaining chemical weapons stockpile without sacrificing safety and security.

# Chemical Demilitarization Program (CDP) Semi-Annual Report to Congress March 2013

## INTRODUCTION

This report provides: (1) the status of the Department's progress toward destruction of the U.S. stockpile of lethal chemical agents and munitions by the CWC destruction deadline of April 29, 2012, but not later than December 31, 2017; and (2) the status of on-going actions to accelerate the program.

## REPORTING REQUIREMENTS

Title 50, U.S.C., section 1521(j) (as amended) includes a semi-annual reporting requirement on the implementation by the United States of its chemical weapons destruction obligations under the CWC.

## OPTIONS AND ALTERNATIVES FOR ACCELERATING DESTRUCTION

Starting in 2008, the Department conducted assessments to define options and alternatives for accelerating destruction of the remaining chemical weapons stockpile by the April 29, 2012 CWC destruction deadline, but not later than the December 31, 2017 congressionally-mandated deadline. The Department identified for evaluation three options to destroy the remaining chemical weapons stockpile: (1) provide performance incentives to ensure destruction is complete at the Chemical Materials Activity (CMA) sites by April 29, 2012; (2) transport portions of the stockpile to operational chemical weapons destruction facility locations; and (3) accelerate the Assembled Chemical Weapons Alternatives (ACWA) program sites destruction schedules. The Department concluded that no realistic options were available to destroy the complete U.S. stockpile by the CWC destruction deadline of April 29, 2012.

### *Semi-Annual Report Requirements under 50 U.S.C. 1521(j), as Amended*

The report shall include:

- The anticipated schedule at the time of such report for the completion of destruction of chemical agents, munitions, and materiel at each chemical weapons demilitarization facility in the United States;
- A description of the options and alternatives for accelerating the completion of chemical weapons destruction at each such facility, particularly in time to meet the stockpile elimination deadline (currently 2017);
- A description of the funding required to achieve each of the options for accelerated destruction, and a detailed life-cycle cost estimate for each of the affected facilities included in each such funding profile;
- A description of all actions being taken to accelerate the destruction of its entire stockpile of chemical weapons, agents, and materiel in order to meet the current destruction deadline, or as soon thereafter as possible; and
- A description and justification for the use of any supplemental destruction technologies used at Pueblo, and Blue Grass, during the reporting period, including Explosive Destruction Technology and any technologies developed for the treatment and disposal of energetics or agent hydrolysates. This description and justification will include:
  - The need and justification for use of supplemental technologies.
  - Site-by-site descriptions of the problematic aspects of the stockpile
  - The type of supplemental technologies used at each site and
  - Any planned future use of other supplemental technologies for each site

Following a rigorous and lengthy review mandated by title 10, U.S.C., section 2433, a (commonly referred to as the Nunn-McCurdy statute), the Under Secretary of Defense for Acquisition, Technology and Logistics (USD(AT&L)) certified a restructured ACWA program to Congress on June 14, 2011. The restructured program maintains current destruction technologies (neutralization followed by on-site secondary waste treatment), has an approved Milestone B and an Acquisition Program Baseline that includes supplemental use of Explosive Destruction Technology (EDT) at each site pending the completion of the National Environmental Policy Act (NEPA) process, and continues to evaluate options to improve overall schedule and cost.

## LIFE-CYCLE COSTS AND DESTRUCTION SCHEDULE ESTIMATES

Construction and systemization is progressing at both ACWA sites. Construction is 63-percent complete at the Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP). Major construction is 100 percent complete at the Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP), with only a few minor construction items that are not on the critical path remaining as of February 2013. Systemization efforts are on-going at PCAPP and initial systemization operations have begun at BGCAPP. The ACWA program is steadily progressing toward the start of destruction operations and is on track to start destruction operations at PCAPP in December 2015 and at BGCAPP in April 2020.

The CMA continues to focus on closing its remaining chemical weapons destruction facilities at Pine Bluff, Arkansas; Anniston, Alabama; Umatilla, Oregon; and Tooele, Utah.

The tables below illustrate the estimated cost and schedule of the CDP.

Table 1 – CDP Cost Estimate (*Then-Year \$Million*)

Project/FY	Prior	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	To Complete	Total
CMA	20,280.1	1053.9	674.1	715.4	284.2	273.8	296.1	1,184.8	24,664.4
ACWA	3,398.0	477.1	778.7	706.8	714.5	620.5	614.4	3,307.1	10,617.1
<b>Total</b>	<b>23,678.1</b>	<b>1,531.0</b>	<b>1,452.8</b>	<b>1,422.2</b>	<b>998.7</b>	<b>894.3</b>	<b>910.5</b>	<b>4,491.9</b>	<b>35,379.5</b>

CMA - U.S. Army Chemical Materials Activity

ACWA - Assembled Chemical Weapons Alternatives

Note: CMA and ACWA cost estimates are based on the FY 2013 President's Budget Request and prior year reprogramming actions.

Table 2 - CDP Schedule Estimate

Milestone	ACWA	
	PCAPP	BGCAPP
<b>Begin Ops</b>	DEC 2015	APR 2020
<b>Complete Ops</b>	NOV 2019	SEP 2023

PCAPP – Pueblo Chemical Agent-Destruction Pilot Plant

BGCAPP – Blue Grass Chemical Agent-Destruction Pilot Plant

Note: The ACWA program schedule estimates are based upon the 2012 Acquisition Program Baseline.

## **ONGOING ACTIONS TO ACCELERATE DESTRUCTION**

The ACWA program leadership is working to implement section 923 of the John Warner National Defense Authorization Act for Fiscal Year 2007 (Public Law 109-364), which authorized the Secretary of Defense to include an incentives clause in any contract for the destruction of the U.S. stockpile of lethal chemical agents and munitions for the purpose of accelerating the safe elimination of the chemical weapons stockpile and closure of the facilities. An incentives agreement is being negotiated with the PCAPP systems contractor. A similar agreement will be negotiated with the BGCAPP systems contractor.

Additionally, the ACWA program continues to assess and plan for possible EDT use to supplement destruction at the Pueblo Chemical Depot (PCD) and the Blue Grass Army Depot (BGAD). This technology would be used for the destruction of chemical weapons that are not suitable for processing by the PCAPP or the BGCAPP baseline plants. Incorporating EDT into the destruction process will mitigate technical risk and enhance workforce safety. A NEPA Environmental Assessment (EA) for the use of EDT at PCAPP is complete and concludes that the installation and operation of an EDT facility will have no significant environmental impacts. A Request for Proposals has been published and replies have been evaluated. Selection of a system for potential deployment to PCAPP is expected in 3<sup>rd</sup> Quarter FY 2013.

At the BGCAPP, an analysis of x-rays of mustard-filled munitions confirmed that over the past 65 years, a significant portion of the mustard agent has solidified. This suggests that removal of the mustard agent from projectiles would take significantly more time than originally forecast. As a result, the ACWA program is exploring the feasibility of supplementing the planned neutralization process at BGCAPP with EDT to destroy mustard filled munitions. The use of EDT may accelerate destruction efforts by destroying the mustard munitions ahead of or in parallel with regular plant operations. ACWA program leadership will continue to evaluate options for the sequencing of chemical weapons destruction operations. A NEPA EA for the use of EDT at BGCAPP has been initiated and will be completed prior to any final decision on the use of EDT.

## **SUPPLEMENTAL CHEMICAL AGENT AND MUNITIONS DESTRUCTION TECHNOLOGIES**

Four EDT systems have been identified as potentially suitable for the destruction of the mustard-filled munitions at both the PCAPP and the BGCAPP. These systems include the Static Detonation Chamber, the Transportable Detonation Chamber, the Detonation of Ammunition in Vacuum Integrated Chamber system, and the Explosive Destruction System.

No supplemental technologies have been deployed or used at either PCAPP or BGCAPP during this reporting period. In addition, supplemental destruction technologies are not currently being developed for the disposal of energetics or agent hydrolysates.

## **CONCLUSION**

The CMA completed its chemical weapons stockpile mission ahead of the CWC destruction deadline of April 29, 2012, and is squarely focused on completion of their closure operations. While the currently planned destruction operations at the ACWA program sites are not expected to accommodate the December 31, 2017, congressionally mandated destruction deadline, the Department continues to evaluate options to improve the destruction schedule without sacrificing safety and security