

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



September 2013

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

The estimated cost of report or study for the Department of Defense is approximately \$1,890 for the 2013 Fiscal Year. This includes \$120 in expenses and \$1,770 in DoD labor.

Cost estimate generated on July 30, 2013 RefID: 8-B8C9A68

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	1
INTRODUCTION.....	2
REPORTING REQUIREMENTS.....	2
OPTIONS AND ALTERNATIVES FOR ACCELERATING DESTRUCTION.....	2
LIFE-CYCLE COSTS AND DESTRUCTION SCHEDULE ESTIMATES.....	3
ONGOING ACTIONS TO ACCELERATE DESTRUCTION.....	4
SUPPLEMENTAL CHEMICAL AGENT AND MUNITIONS DESTRUCTION TECHNOLOGIES.....	5
CONCLUSION.....	5

EXECUTIVE SUMMARY

As required by section 1521(j) of title 50, U.S.C., as amended by section 1421 of the National Defense Authorization Act for Fiscal Year 2013 (Public Law 112-239), the September 2013 Department of Defense Chemical Demilitarization Program 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 stored at seven sites: Johnston Atoll; Aberdeen, Maryland; Anniston, Alabama; Tooele, Utah; Pine Bluff, Arkansas; Newport, Indiana; and Umatilla, Oregon. The Program Executive Office for Assembled Chemical Weapons Alternatives (ACWA) program is responsible for destroying the remaining 10 percent of the declared chemical weapons stockpile stored in Pueblo, Colorado, and Blue Grass, Kentucky.

The CMA destruction mission was completed on January 21, 2012. Decontamination operations at all seven facilities are also complete. The CMA continues to diligently work towards closure of their remaining sites. The ACWA program is 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 well under way. At the Blue Grass Army Depot in Kentucky, construction is progressing at a rapid rate. Initial systemization activities are progressing.

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

Chemical Demilitarization Program (CDP) Semi-Annual Report to Congress September 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 Chemical Weapons Convention (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 Title 50 U.S.C. section 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 (commonly referred to as the Nunn-McCurdy statute), the Under Secretary of Defense for Acquisition, Technology and Logistics 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 the ACWA program sites. Major construction at the Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP) is 100 percent complete, with only a few minor construction items that are not on the critical path remaining as of August 2013. Systemization efforts are 46.4 percent complete. The PCAPP is on track to begin destruction operations in December 2015.

Construction of the Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) is 71 percent complete. Systemization operations at BGCAPP are 10 percent complete. The BGCAPP is on track to begin destruction operations in April 2020.

The FY 2013 Continuing Resolution Authority and sequestration had minimal cost and schedule impacts at both PCAPP and BGCAPP. The Program Executive Officer for ACWA is evaluating these impacts.

The CMA continues to focus on closing the remaining chemical weapons destruction facilities at Anniston, Alabama; Umatilla, Oregon; and Tooele, Utah. As of June 2013, decontamination operations at these facilities are complete and estimates indicate that they are months ahead of schedule, due to efficiencies, contract, and closeout incentives. Final closure of the last CMA facility is slated for 3rd Quarter 2017.

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

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

Project/FY	Prior	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	To Complete	Total
CMA	21,333.7	490.5	472.9	277.4	262.0	249.6	208.6	912.0	23,386.7
ACWA	3,875.1	778.7	706.7	714.5	620.5	614.4	697.6	2,645.9	10,653.4
<i>Total</i>	25,208.8	1,451.9	1,179.6	991.9	882.5	864.0	906.2	3,557.9	35,042.8

CMA - U.S. Army Chemical Materials Activity

ACWA - Assembled Chemical Weapons Alternatives

Note: CMA and ACWA cost estimates are based on the FY 2014 President's Budget Request and reprogramming actions.

Table 2 - CDP Schedule Estimate

Milestone	ACWA	
	PCAPP	BGCAPP
Begin Operations	DEC 2015	APR 2020
Complete Operations	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 destruction of the U.S. stockpile of lethal chemical agents and munitions for the purpose of accelerating the safe elimination of the stockpile and closure of the facilities. An incentives agreement is being negotiated with both the PCAPP and BGCAPP systems contractors.

Additionally, the ACWA program continues to assess and plan for EDT use to supplement destruction at the Pueblo Chemical Depot (PCD) and the possibly at Blue Grass Army Depot. This technology would be used for the destruction of chemical weapons that are not suitable for processing by the PCAPP or the BGCAPP neutralization 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 concluded the installation and operation of an EDT facility will have no significant environmental impacts. After careful consideration of available technologies and costs, the PEO ACWA selected the U.S. Army's Explosive Destruction System (EDS) for destruction of problematic mustard rounds at PCD. The U.S. Army Corps of Engineers is preparing the PCD EDS specification and scope of work for the design and construction of the infrastructure and facilities. Destruction of problematic munitions at PCD could begin as early as December 2014.

At the BGCAPP, after performing an x-ray analysis of mustard filled munitions that confirmed removal of the mustard agent from projectiles due to solidification of the chemical agent would take significantly more time than originally forecast, the ACWA program has determined that EDT should be evaluated for feasibility in supplementing the planned neutralization process to destroy all of the mustard filled munitions at the BGCAPP. The use of EDT may accelerate chemical weapons destruction efforts in Kentucky by destroying the mustard-filled munitions ahead of or in parallel with regular plant operations. The ACWA program will continue to evaluate options for the sequencing of chemical weapons destruction operations to determine which provides the best outcome relative to cost and schedule. A draft NEPA EA and Finding of No Significant Impact for the use of EDT at BGCAPP has been published for public comment and will be completed prior to any final decision anticipated in 1st Quarter FY 2014.

SUPPLEMENTAL CHEMICAL AGENT AND MUNITIONS DESTRUCTION TECHNOLOGIES

Four EDT systems have been identified as potentially suitable for 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. After a careful review of these system's capabilities, costs, and schedules, the PEO ACWA selected the Army's EDS for supplemental destruction operations at PCAPP. Selection of the EDT system for BGCAPP will follow completion of the Environmental Assessment.

No EDT systems have been deployed or used at either Colorado or Kentucky for the destruction of problematic munitions during this reporting period. In addition, supplemental destruction technologies are not currently being developed for the disposal of energetics or chemical agent hydrolysates.

CONCLUSION

The CMA has completed all decontamination operations at its remaining sites and is squarely focused on completion of closure operations. While the currently planned destruction operations at PCAPP and BGCAPP focus on the remaining 10 percent of the U.S. chemical weapons stockpile, neither is expected to accommodate the December 31, 2017, congressionally-mandated destruction deadline. The Department continues to evaluate options to improve the destruction schedule without sacrificing worker and public safety and security.