

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



**September 2014**

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

The estimated cost of this report or study for the Department of Defense is approximately \$4,850 for the 2014 Fiscal Year. This includes \$3,000 in expenses and \$1,850 in DoD labor.

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## EXECUTIVE SUMMARY

As required by section 1521(j) of title 50 United States Code (U.S.C.), as amended by section 1421 of the National Defense Authorization Act for Fiscal Year 2013 (Public Law 112-239), the September 2014 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 stored at seven sites: Johnston Atoll; Aberdeen, Maryland; Anniston, Alabama; Tooele, Utah; Pine Bluff, Arkansas; Newport, Indiana; and Umatilla, Oregon. The CMA completed its destruction in January 2012. The Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD)/ CMA continues to diligently work towards closure of their remaining sites.

The Program Executive Office for Assembled Chemical Weapons Alternatives (PEO ACWA) program is responsible for destroying the remaining 10 percent of the declared chemical weapons stockpile stored in Pueblo, Colorado, and Blue Grass, Kentucky. At the Pueblo Chemical Depot in Colorado, construction of the chemical agent disposal pilot plant is complete and systemization activities are well under way. At the Blue Grass Army Depot in Kentucky, construction of the chemical agent disposal pilot plant is progressing at a rapid rate and 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 2014

## 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 ongoing 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 2433a (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, 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. Construction at the Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP) is 100 percent complete. Systemization efforts are 60.2 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 84 percent complete. Systemization operations at BGCAPP are 20 percent complete. The BGCAPP is on track to begin destruction operations in April 2020.

The Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD)/CMA continues to focus on closing the remaining chemical weapons destruction facilities at Anniston, Alabama; Umatilla, Oregon; and Tooele, Utah. As of July 2014, demolition 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 facility is slated for the first quarter of 2015.

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

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

Project/FY	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
JPEO-CBD/CMA	21,914.3	301.2	253.0	160.2	149.6	147.9	179.0	904.5	24,009.7
ACWA	4,647.4	706.7	614.5	613.7	617.8	655.9	641.8	2,496.1	10,993.9
<i>Total</i>	26,561.7	1,007.9	867.5	773.9	767.4	803.8	820.8	3,400.6	35,003.6

**JPEO-CBD/CMA** - Joint Program Executive Office for Chemical and Biological Defense/U.S. Army Chemical Materials Activity

**ACWA** - Assembled Chemical Weapons Alternatives

Note: FY 2015-2019 amounts are based on the FY2015 President's Budget request. Prior year and FY 2014 numbers are based on approved budgets less adjustments.

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 on 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 incentive agreement is currently being negotiated with the PCAPP systems contractor and the ACWA program will at a later date negotiate a similar agreement with the BGCAPP systems contractor.

In addition, the ACWA program continues plans for EDT use to supplement destruction at the Pueblo Chemical Depot (PCD) and the Blue Grass Army Depot (BGAD). This technology will be used for the destruction of chemical weapons that are not suitable for processing by the PCAPP or the BGCAPP neutralization plants and will mitigate technical risk and enhance workforce safety.

In May 2013, the PEO ACWA selected the U.S. Army’s Explosive Destruction System (EDS) for destruction of problematic mustard rounds at PCD. Construction of the site continues and delivery of the first system occurred in August 2014. Destruction of the known problematic munitions could begin as early as October 2014. The EDS will remain available throughout the life of the pilot plant to destroy any additional problematic or reject munitions.

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 Systems Contractor selected the Static Detonation Chamber (SDC) in November 2013 to destroy the entire mustard filled munitions stockpile. The use of the SDC will accelerate chemical weapons destruction efforts in Kentucky by destroying the mustard projectiles ahead of the main pilot plant operations.

## SUPPLEMENTAL CHEMICAL AGENT AND MUNITIONS DESTRUCTION TECHNOLOGIES

No supplemental chemical agent and munition destruction technologies 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 hydrolysate or agent hydrolysate.

## **CONCLUSION**

The JPEO-CBD/CMA has completed demolition operations at its remaining sites, and is 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.