

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



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

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EXECUTIVE SUMMARY

As required by section 1521(j) of title 50, U.S. Code, the March 2012 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 Agency (CMA) is 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.

As of January 21, 2012, the CMA completed their portion of stockpile destruction mission, having destroyed 89.75 percent of the U.S. chemical weapons stockpile declared when the CWC entered into force. Destruction operations at Johnston Atoll; Aberdeen, Maryland; Newport, Indiana; Pine Bluff, Arkansas; Anniston, Alabama; Umatilla, Oregon; and Tooele, Utah were completed in 2000, 2006, 2008, 2010, 2011, 2011, and 2012, respectively.

On June 14, 2011, the Department certified a restructured ACWA program to Congress, pursuant to section 2433a of title 10, U.S. Code (Nunn-McCurdy statute – critical cost breach process). The ACWA program destruction sites at Colorado and Kentucky are currently under construction. The Department continues to move the ACWA program forward and evaluate options to improve overall schedule and reduce costs.

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

Semi-Annual Report to Congress

March 2012

INTRODUCTION

This report provides (1) the Department of Defense'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

Section 1521(j) of title 50, U.S. Code, 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 2012 CWC destruction deadline but not later than the 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 CMA sites by April 29, 2012; (2) transport portions of the stockpile to operational chemical weapons destruction facility locations; and (3) accelerate the ACWA program sites' destruction schedules. The Department concluded that no realistic options are available to destroy the complete U.S. stockpile by the CWC destruction deadline of April 2012. Following a rigorous and lengthy review mandated by section 2433a of title 10, U.S. Code, which is 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), considers supplemental use of Explosive Destruction Technology (EDT), and continues to evaluate options to improve overall schedule and cost.

Semi-Annual Report under 50 U.S.C. 1521(j)

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; and
- A description of all actions being taken by the United States to accelerate the destruction of its entire stockpile of chemical weapons, agents, and materiel in order to meet the current April 29, 2012, destruction deadline under the CWC, or as soon thereafter as possible.

LIFE-CYCLE COSTS AND DESTRUCTION SCHEDULE ESTIMATES

With designs for the Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) and Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP) sites now complete and construction well underway (47 percent and 89 percent, respectively, as of February 28, 2012), a substantially better understanding of the ACWA program costs has been realized. The ACWA program life-cycle cost estimate reflects the Director, Cost Assessment and Program Evaluation, estimate of \$10.6 billion.

The CMA started operations at Johnston Atoll on June 30, 1990. Through rigorous work and applications of lessons learned, the CMA safely and effectively eliminated its portion of the U.S. chemical weapons stockpile on January 21, 2012. With the completion of its stockpile mission, the CMA will now focus on closure of the chemical weapons destruction facilities at Pine Bluff, Arkansas; Anniston, Alabama; Umatilla, Oregon; and Tooele, Utah.

Tables 1 and 2 are the program cost and schedule estimates for the CDP.

Table 1. CDP Cost Estimate (Then Year \$M)

Project/ FY	Prior	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	To Complete	Total
CMA	20,295.8	1,152.7	674.1	715.4	284.2	273.7	296.0	751.3	24,443.2
ACWA	3,361.6	477.1	778.7	706.8	714.5	620.5	614.4	3,343.5	10,617.1
Total	23,657.4	1,629.8	1,452.8	1,422.2	998.7	894.2	910.4	4,094.8	35,060.3

CMA – U.S. Army Chemical Materials Agency ACWA – Assembled Chemical Weapons Alternatives

Note: CMA and ACWA cost estimates are based on the CMA FY 2011 SAR and FY 2013 President's Budget Request respectively.

Table 2. CDP Schedule Estimate

Milestone	ACWA	
	PCAPP	BGCAPP
Begin Operations	Dec-15	Apr-20
Complete Operations	Nov-19	Sep-23

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 Department continues to review technical possibilities to destroy certain identified portions of the chemical weapons stockpile using EDT at the Pueblo, Colorado, and the Blue Grass, Kentucky, sites. An x-ray assessment of mustard-filled munitions at the BGCAPP was completed in June 2011. The results of this assessment showed significant solidification of agent had occurred over more than 65 years in storage. Analysis of the data suggests that removal of mustard agent from projectiles would likely take significantly more time than originally forecast based on BGCAPP process designs. Further difficulty with increased equipment down time and

based on BGCAPP process designs. Further difficulty with increased equipment down time and maintenance is also a concern based on the extent of solids identified. The ACWA program is considering the feasibility of supplementing the planned neutralization technology at BGCAPP with EDT for destroying problematic mustard-filled munitions, based on lessons learned from the CMA destruction facilities. The use of EDT could accelerate destruction efforts by destroying the problematic mustard munitions ahead of regular plant operations to destroy nerve agent munitions. Further evaluation is necessary to determine the final sequencing of agent destruction at Blue Grass. A formal environmental assessment under the National Environmental Policy Act (NEPA) for the use of EDT at BGCAPP will begin in 2012, prior to any final decision on the use of EDT.

The ACWA program is also conducting assessments for the PCAPP on the potential use of EDT and operational capabilities. An Environmental Assessment for the use of EDT at PCAPP is anticipated to be completed in May 2012. If this NEPA process results in a determination of no significant environmental impacts, proposals from EDT suppliers will be requested, and technology selection and award would be anticipated to occur by the end of December 2012. The seamless incorporation of EDT into the PCAPP destruction process would aid in mitigating technical risk, enhance workforce safety, and help to complete destruction operations as close to the December 31, 2017, congressionally mandated deadline as practicable.

CONCLUSION

The Department achieved destruction of 89.75 percent of the U.S. chemical weapons stockpile with the completion of destruction operations at the Tooele facility on January 21, 2012. The CMA has now completed its chemical weapons stockpile mission ahead of the CWC 100-percent destruction deadline of April 29, 2012, and continues closure operations. While the current way ahead for destroying the remaining 10.25 percent is not expected to accommodate the December 31, 2017, congressionally mandated destruction deadline, the Department will continue to look for opportunities to expedite the safe and secure elimination of the remaining chemical weapons stockpile.