



**Annual Status Report
on the
Disposal of Chemical Weapons and Materiel
for Fiscal Year 2004**

September 30, 2004

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	ii
I. CHEMICAL DEMILITARIZATION PROGRAM	
A. Introduction	1
B. Program Management	1
C. Safety of the Chemical Stockpile.....	2
D. Environmental Compliance and Chemical Agent Monitoring.....	2
E. Chemical Stockpile Emergency Preparedness	3
F. Public Outreach.....	4
G. Program Funding and Expenditures.....	4
H. Citizens' Advisory Commissions Travel Cost Summary	5
I. Program Reviews	5
J. FY 2005 Planned Activities	6
II. CHEMICAL WEAPONS CONVENTION	7
III. CHEMICAL STOCKPILE DISPOSAL	9
A. Johnston Atoll.....	11
B. Deseret Chemical Depot	12
C. Anniston Chemical Activity	15
D. Umatilla Chemical Depot.....	17
E. Pine Bluff Chemical Activity.....	19
F. Edgewood Chemical Activity	21
G. Newport Chemical Depot	24
H. Pueblo Chemical Depot	27
I. Blue Grass Army Depot	29
J. Legal Issues.....	31
IV. NON-STOCKPILE CHEMICAL MATERIEL	33

APPENDICES

- A. ABBREVIATIONS AND SYMBOLS
- B. OCCURRENCES OF LEAKING CHEMICAL MUNITIONS SUMMARY
- C. EXPENDITURES SUMMARY

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EXECUTIVE SUMMARY

Introduction

The Department of Defense (DoD) is submitting this annual report for Fiscal Year (FY) 2004 to the United States (U.S.) Congress pursuant to 50 U.S. Code, Section 1521. The report documents the status of the U.S. Chemical Demilitarization Program (CDP) as of September 30, 2004.

Program Management

The U.S. Army Chemical Materials Agency (CMA) manages this nationally important and internationally significant program to safely store and destroy all U.S. chemical warfare materiel (CWM) with joint oversight from the Assistant Secretary of the Army (Acquisition, Logistics and Technology) and the Commanding General, U.S. Army Materiel Command. Two chemical stockpile disposal facilities in Colorado and Kentucky are managed by the Program Manager for Assembled Chemical Weapons Alternatives, in accordance with Public Law (PL) 107-248, who directly reports to the Under Secretary of Defense for Acquisition and Technology, in accordance with PL 105-261.

Safety is CMA's top priority. CMA's chemical stockpile monitoring and inspection program ensures that chemical storage remains safe. During FY 2004, a total of 136 leaking chemical munitions were discovered and overpacked in accordance with long-standing procedures without incident. The stockpile can be safely stored for the indeterminate future. Over time, however, the weapon components tend to develop increasing numbers of leaks. These leaks pose potential risks to workers at the storage sites but are unlikely to endanger off-post communities in the vicinity of the storage sites. CMA is working to eliminate this public risk by pursuing the expeditious destruction of the chemical stockpile while maintaining its commitment to safety and protection of the environment. Under the Chemical Stockpile Emergency Preparedness Program, CMA continued to maintain emergency preparedness and improve operational readiness at chemical storage installations, as well as provide assistance to communities in partnership with the Department of Homeland Security Federal Emergency Management Agency and state and local governments.

Noteworthy programmatic activities of CMA during FY 2004 included environmental compliance and environmental management, as well as environmental monitoring issues such as implementation of new Airborne Exposure Limits for chemical agents and evaluation of new monitoring technologies. The CMA public affairs team continued its efforts to reach out to all program stakeholders by providing a variety of information materials and providing opportunities for stakeholders to interact with agency personnel, as well as provide input and feedback on CMA activities. Citizens' Advisory Commissions (CACs) continue to be an important partner of CMA. The agency spent a total of \$28,314 in FY 2004 to reimburse CAC members for travel expenses incurred while carrying out their mission.

Program funding in FY 2004 for the CDP totaled \$1,500.3 million for chemical agents and munitions destruction and \$119.8 million for military construction. During FY 2004, CMA disbursed \$1,364.6 million (includes military construction) of FY 2004 and prior funds for activities carried out under Section 1521 of 50 U.S. Code. Disbursed amounts are lower than appropriated funding because funds appropriated as multi-year funds may be obligated in the following years or some single-year funds were obligated but not disbursed during FY 2004. Funds were disbursed as follows:

Purpose	Funds Expended (\$ in thousands)
Construction of and equipment for chemical disposal facilities (includes systemization)	297,359
Operation of chemical disposal facilities	511,125
Dismantling and closure of chemical disposal facilities	35,846
Research and development	149,787
Program Management (includes Chemical Demilitarization Training Facility)	97,417
Non-stockpile chemical materiel disposal	162,387
Chemical Stockpile Emergency Preparedness Program	110,636
Travel and associated travel costs for CAC members (detailed below)	28
TOTAL	1,364,585

The table in appendix C shows the funds disbursed by project and location. The total cost of the program is \$24.3 billion, as reported in the June 2004 Selected Acquisition Report.

Chemical demilitarization continues to be a topic of significant attention, as evidenced by several program reviews completed or initiated during FY 2004. The U.S. Army Audit Agency began two audits regarding management oversight and financial management of the CDP. The U.S. General Accounting Office published a report on implementation of the Chemical Weapons Convention (CWC) that assessed the performance of the United States in meeting its obligations under the treaty, and the National Research Council conducted studies reviewing the effect of chemical stockpile degradation on disposal operations and the proposed design for a fixed facility to destroy non-stockpile chemical materiel stored at Pine Bluff Arsenal (PBA), Arkansas.

Chemical Weapons Convention

The United States maintained compliance with the CWC during FY 2004. As of September 30, 2004, CMA has destroyed 28.7 percent of the declared Category 1 chemical weapons stockpile and is on track to meet the extended deadline of December 2007 for destruction of 45 percent of Category 1 chemical weapons. In addition, the United States met the CWC milestone for 80 percent destruction of former chemical weapons production facilities in December 2003, 16 months ahead of the April 2005 deadline.

Chemical Stockpile Disposal

During FY 2004, CMA chemical disposal facilities destroyed approximately 1,639 U.S. tons of chemical agent (5.2 percent) out of the original U.S. stockpile of 31,498 U.S. tons of chemical agent. As of September 30, 2004, the United States has destroyed a total of 9,859 tons (31.3 percent) of the original U.S. stockpile. The status of the chemical stockpile disposal facilities is as follows:

Johnston Atoll Chemical Agent Disposal System, Johnston Island, Pacific Ocean. The chemical stockpile that was stored on Johnston Island has been completely destroyed and the Johnston Atoll Chemical Agent Disposal System is closed.

Tooele Chemical Agent Disposal Facility, Utah. During FY 2004, the Tooele Chemical Agent Disposal Facility (TOCDF) destroyed 1,121 M55 rockets and M56 warheads, 53,216 155mm projectiles, 632 ton containers, and 329 spray tanks, which contained approximately 827 U.S. tons of nerve agent VX. On September 12, 2004, TOCDF passed the 50 percent destroyed mark of the original stockpile (in U.S. tons of chemical agent) stored at Deseret Chemical Depot.

Anniston Chemical Agent Disposal Facility, Alabama. The Anniston Chemical Agent Disposal Facility continued processing chemical agent during FY 2004, destroying 36,416 M55 rockets, which contained approximately 194.7 U.S. tons of nerve agent GB.

Umatilla Chemical Agent Disposal Facility, Oregon. The Umatilla Chemical Agent Disposal Facility (UMCDF) began chemical agent operations on September 7, 2004, with the delivery of the first nerve agent GB M55 rocket, which was processed on September 8, 2004. UMCDF is the fourth operational chemical disposal facility in the continental United States. As of September 30, 2004, UMCDF has processed 232 M55 rockets, containing 1.2 U.S. tons of nerve agent GB.

Pine Bluff Chemical Agent Disposal Facility, Arkansas. During FY 2004, systemization of the Pine Bluff Chemical Agent Disposal Facility continued and the facility is now in the final stages before the start of agent operations.

Aberdeen Chemical Agent Disposal Facility, Maryland. The Aberdeen Chemical Agent Disposal Facility (ABCDF) continued chemical agent disposal operations during FY 2004, draining 745 ton containers (TCs) and neutralizing approximately 628.9 U.S. tons of mustard agent. As of September 30, 2004, ABCDF has destroyed a total of 42.1 percent of the Edgewood chemical stockpile, and shipped approximately 1.8 million gallons of hydrolysate to DuPont Chambers Works, Deepwater, New Jersey, the contracted off-site treatment facility.

Newport Chemical Agent Disposal Facility, Indiana. Construction and systemization of the Newport Chemical Agent Disposal Facility are complete. The facility is preparing for the start of agent destruction operations.

Pueblo Chemical Agent-Neutralization Pilot Plant, Colorado. The Pueblo Chemical Agent-Neutralization Pilot Plant (PCAPP) is currently in design. A groundbreaking open house was held on September 18, 2004, to commemorate the authority to start construction. The State of Colorado issued the Resource Conservation and Recovery Act Research, Development, and Demonstration Permit for stage I construction of the PCAPP on July 1, 2004. The DoD issued a stop work order on September 14, 2004 for the design of the PCAPP hazardous waste treatment facilities. The systems contractor has taken all required contractual steps to comply with the stop work order.

Blue Grass Chemical Agent-Neutralization Pilot Plant, Kentucky. The Blue Grass Chemical Agent-Neutralization Pilot Plant is currently in design. Environmental permit applications were submitted to the Commonwealth of Kentucky in FY 2004.

Non-Stockpile Chemical Materiel Disposal

The Project Manager for Non-Stockpile Chemical Materiel (PMNSCM) carried out a variety of activities to destroy chemical materiel not classified as part of the U.S. chemical stockpile, including:

Recovered Chemical Warfare Materiel. PMNSCM supported activities to recover and destroy CWM at Spring Valley, Washington DC; Fort McClellan, Alabama; Bridgeville, Delaware; Fort Benning, Georgia; Holloman Air Force Base, New Mexico; Harvard Target Range, Nebraska; and Aberdeen Proving Ground-Edgewood Area (APG-EA), Maryland.

Binary Chemical Weapons Disposal. Binary components will be destroyed by neutralization in a converted portion of the former Integrated Binary Production Facility (IBPF) at PBA, Arkansas. Construction of the Pine Bluff Binary Destruction Facility continued during FY 2004 and is about 50 percent complete.

Former Chemical Weapons Production Facilities. Destruction of the former Nerve Agent VX Production Facility, Newport Chemical Depot, Indiana, and Integrated Binary Production Facilities (IBPF), PBA, Arkansas continued during FY 2004.

Miscellaneous Chemical Warfare Materiel. Miscellaneous CWM includes empty TCs, Category 3 CWM, and chemical samples. Activities during FY 2004 included destruction of empty TCs at APG-EA, Maryland, and PBA, Arkansas, disposal of newly discovered and declared Category 3 CWM at Umatilla Chemical Depot, Oregon, and disposal of chemical samples at APG-EA, Maryland.

Incidents

During FY 2004, 14 Category II chemical events (defined in accordance with Army Regulation 50-6, Chemical Surety) occurred at CMA facilities. Seven of these events involved leaking munitions or containers in storage facilities, the other seven events occurred during demilitarization operations. In addition, 55 Category I chemical

events and no Category III chemical events occurred during FY 2004. None of the events resulted in agent exposure of personnel or agent release to the environment.

Planned Activities for FY 2005

During FY 2005, chemical disposal operations will continue at the four operating chemical disposal facilities in Utah, Alabama, Maryland, and Oregon. Two disposal facilities in Arkansas and Indiana are scheduled to begin chemical disposal operations, and design work will continue at the two remaining two facilities in Colorado and Kentucky. The PMNSCM will continue its efforts to dispose non-stockpile chemical materiel.

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I. CHEMICAL DEMILITARIZATION PROGRAM

Introduction

The Department of Defense (DoD) is submitting this annual report for fiscal year (FY) 2004 to the United States (U.S.) Congress pursuant to 50 U.S. Code, Section 1521. The Chemical Demilitarization Program (CDP) is a program of national importance to destroy the obsolete U.S. stockpiles of lethal chemical agents and munitions, as well as non-stockpile chemical materiel (NSCM). The presence of chemical stockpiles at eight locations across the United States poses unnecessary public and environmental risk. In addition, the CDP has international significance in the implementation of the Chemical Weapons Convention (CWC). The United States has established itself as the world leader in chemical demilitarization. Lastly, many experiences and technologies developed for the CDP directly contribute to better emergency preparedness for our communities and increased readiness of U.S. forces to counter potential chemical threats.

Program Management

The Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA(ALT)) is directly responsible to the Secretary of the Army for all policy, direction, and oversight for the CDP. The CDP is an ACAT-I D program with the Defense Acquisition Executive (DAE) as the milestone decision authority. The ASA(ALT), as the Army Acquisition Executive (AAE), is directly responsible to the DAE, having Army Secretariat-level responsibility for all policy, direction, and oversight for CDP and CSEPP including planning, programming, budgeting, and execution.

The Chemical Materials Agency (CMA), jointly established by the AAE and the Commanding General, U.S. Army Materiel Command (CG, AMC), is directly responsible for oversight, direction, policy and execution of all elements of chemical stockpile storage and the CDP functions. The AAE and CG, AMC share specific execution responsibilities associated with the program. Ultimate responsibility for the Defense acquisition program aspects of the CMA's mission, to include all CDP efforts in all program phases resides with the DAE and is delegated to the Army and the AAE as executive agent. Responsibility for the chemical stockpile storage mission resides with the CG, AMG. The AAE and CG, AMG have agreed to share responsibility for the operation and closure phases of the chemical demilitarization mission; but the AAE is ultimately responsible to the DAE for these phases.

In accordance with Public Law (PL) 107-248, efforts to destroy the chemical stockpiles at Pueblo, Colorado, and Blue Grass, Kentucky are conducted separately from CMA under the Assembled Chemical Weapons Alternatives (ACWA) Program. The Program Manager for ACWA (PM ACWA) reports directly to the Under Secretary of Defense for Acquisition, Technology, and Logistics in accordance with Public Law 105-261.

Safety of the Chemical Stockpile

CMA continued to evaluate the safety and integrity of the chemical stockpile through a monitoring and inspection program, as well as through analytical sampling and analysis. Site-specific quantitative risk assessments continue to support that the risks of continued long-term storage outweigh the risks associated with disposal operations. The stockpile can be safely stored for the indeterminate future. Over time, however, the weapon components tend to develop increasing numbers of leaks. These leaks pose potential risks to workers at the storage sites but are unlikely to endanger off-post communities in the vicinity of the storage sites. Additionally, prolonged storage heightens the possibility of a catastrophic event caused by either human activity or natural disasters. CMA is working to eliminate this public risk by pursuing the expeditious destruction of the chemical stockpile while maintaining its commitment to safety and protection of the environment.

During FY 2004, a total of 136 leaking munitions were discovered and overpacked in accordance with long-standing procedures without incident. CMA has adopted a new family of high performance overpack containers as secondary packaging for leaking containers and as a primary packaging for leaking munitions. For historical leaker information, see appendix B of this report.

CMA continued analytical work to address issues including M55 rocket risk reduction and safety of mustard-filled ton containers (TCs). M55 rocket risk stems primarily from lightning and earthquakes, and can be reduced by banding pallets, lowering stack height, and placement of dielectric barriers. CMA published a summary report during FY 2004 addressing safety issues from potential hydrogen pressurization of mustard-filled TCs.

Environmental Compliance and Chemical Agent Monitoring

CMA and PM ACWA continued to work with the DoD, Department of the Army (DA), the U.S. Environmental Protection Agency (EPA), and state and local regulatory agencies to ensure continued compliance with environmental regulations. In addition, CMA is pursuing implementation of an ISO-14001¹ like Environmental Management System at chemical activities, chemical depots, and chemical disposal facilities.

CMA continued to address technical issues associated with monitoring, including validation of monitoring protocols and equipment, updates of monitoring and quality assurance documentation, implementation of the revised Airborne Exposure Limits (AELs) for chemical agents, monitoring of mercury emissions. In addition, new monitoring technologies were evaluated to determine whether they meet the threshold requirements for accurate and reliable detection of chemical agents. These were evaluated as part of the ongoing CMA mission to conduct such evaluations as well as to comply with provisions in Section 1056(b) of PL 108-136. CMA held a workshop on

¹ ISO 14001 is the International Organization for Standardization standard for Environmental Management Systems.

August 23 and 24, 2004, in Washington, DC, that included a community sensing session and industry presentations. Community members conveyed their concerns and developed a set of objectives that CMA will consider, along with technical and other requirements when developing future CMA chemical agent monitoring strategies. Industry representatives presented overviews of nine monitoring technologies. Technical information from and about this workshop has been posted on the Web site www.chemicalagentdetection.com.

Finalization of the new AELs necessitated the development of interim guidance from the Office of the Assistant Secretary of the Army (Installations and Environment). This guidance was captured in the newly revised CMA programmatic Monitoring Concept Plan and Laboratory and Monitoring Quality Control Plan documentation. Facilities and depots initiated development of AEL implementation plans, which will be used to aid in meeting January 2005 and July 2005 implementation dates for nerve and blister agents, respectively.

During FY 2004, CMA installed and tested new Agilent/Dynatherm Agent Monitors at stockpile sites in Oregon, Utah, Colorado, Arkansas, Alabama, and Indiana. Agilent systems were installed and precision and accuracy testing for each unit was completed at the Worker Protection Limit concentrations.

Chemical Stockpile Emergency Preparedness

The Director, CSEPP, continued to maintain emergency preparedness and improve operational readiness at chemical agent storage installations, as well as work with the Department of Homeland Security Federal Emergency Management Agency (DHS-FEMA) and state and local governments to provide assistance to communities. DHS-FEMA conducts the off-post emergency preparedness program and is supported by the Army, which provides DHS, FEMA with funding for state grants and technical assistance. According to PL 105-261, Section 141, the Director of DHS-FEMA will provide a separate report to Congress outlining accomplishments and issues in participating civilian communities.

A three-day DA Service Response Force Exercise (SRFX) commenced at Pine Bluff Arsenal (PBA), Arkansas, on February 4, 2004. Army regulation requires an SRFX on a biennial basis to train and demonstrate the Army's ability to move assets, expertise, and equipment to support emergency response to major chemical events at any U.S. Army location. The State of Arkansas and all CSEPP counties participated in this event. There was significant interplay of the U.S. Army with other federal agencies, many state agencies, and all local agencies that would be involved in a major chemical incident.

The Director, CSEPP, conducted the CSEPP National Workshop in Seattle, Washington, from June 22 to 24, 2004. More than 400 federal, state, county, and contractor representatives attended.

Public Outreach

The CMA Public Affairs Office (PAO) undertook a strategic planning and team-building process during FY 2004 aimed at developing cohesive and integrated public affairs support throughout the agency. In addition, PAO developed a comprehensive evaluation program that is based on the “balanced scorecard” approach and targets areas that PAO would like to improve.

During FY 2004, PAO maintained the CMA public Web site, developed seven program updates for members of Congress, implemented a bimonthly progress update at the stockpile sites with a report card mailer in alternate months, and supported CMA programmatic activities, including AEL implementation and the August 2004, chemical agent monitoring workshop. Community feedback and input were collected through focus groups, interviews, surveys, and feedback information forms.

FY 2004 evaluation data indicates an overall increase in public outreach contacts compared to FY 2003. The CMA public outreach program received 14 awards during FY 2004 from organizations ranging from the U.S. Army to the Public Relations Society of America and the League of American Communications Professionals.

Program Funding and Expenditures

The FY 2004 appropriation in the Chemical Agents and Munitions Destruction, Army (CAMD, A), account was \$1,500.3 million for the CDP, which includes \$169.9 million for PM ACWA. The Military Construction account appropriation was \$119.8 million for the CDP, which includes \$104.6 million for PM ACWA.

During FY 2004, CMA expended \$1,364.6 million (includes military construction) for activities carried out under Section 1521 of 50 U.S. Code. Disbursed amounts are lower than appropriated funding because funds appropriated as multi-year funds may be obligated in the following years or some single-year funds were obligated but not disbursed during FY 2004. Funds were disbursed as follows:

Purpose	Funds Expended (\$ in thousands)
Construction of and equipment for chemical disposal facilities (includes systemization)	297,359
Operation of chemical disposal facilities	511,125
Dismantling and closure of chemical disposal facilities	35,846
Research and development	149,787
Program Management (includes Chemical Demilitarization Training Facility)	97,417
Non-stockpile chemical materiel disposal	162,387
Chemical Stockpile Emergency Preparedness Program	110,636
Travel and associated travel costs for CAC members (detailed below)	28
TOTAL	1,364,585

The table in appendix C shows the funds expended by project and location.

The current life cycle cost estimate, as reported in the June 2004 Selected Acquisition Report, is approximately \$20.3 billion in current-year dollars for the disposal of chemical weapons under the CMA mission, including CSDP, ATAP, NSCMP, and CSEPP, and \$4.0 billion for PM ACWA. CMA continued to implement and refine cost control initiatives, including the earned value management system, as well as award fee and performance-based incentives for chemical demilitarization contractors.

Citizens' Advisory Commissions Travel Cost Summary

The following table displays funds expended for travel by Citizens' Advisory Commission members during FY 2004 at the invitation of the Deputy Assistant Secretary of the Army (Elimination of Chemical Weapons).

State	Expenditures
Alabama	\$ 3,236
Arkansas	\$ 4,813
Colorado	\$ 4,883
Maryland	\$ 0
Indiana	\$ 0
Kentucky	\$ 1,253
Oregon	\$ 8,862
Utah	\$ 5,267
TOTAL	\$ 28,314

Program Reviews

The U.S. Army Audit Agency initiated two reviews of the CDP during FY 2004. The first review, *Management Oversight of the Chemical Demilitarization Program*, aims to determine whether causes for programmatic schedule delays and cost increases are effectively identified, investigated, and corrected; determine whether contractor requirements and performance are effectively communicated, monitored, and evaluated; determine whether incentives to reduce safety risks, costs, and schedules are effectively established and managed; and determine whether key management controls, as they relate to the CDP, are effective. The second review, *Follow-up of Financial Management of the Chemical Demilitarization Program*, is the second follow-up to an audit completed in FY 2001 and will determine whether recommendations in the original audit and first follow-up were implemented; whether the recommendations achieved the desired results; and whether monetary benefits were realized.

The U.S. General Accountability Office (GAO) on March 31, 2004, published a report entitled *Nonproliferation: Delays in Implementing the Chemical Weapons Convention Raise Concerns about Proliferation*. GAO noted that the United States requested and received an extension of the 45 percent Category 1 chemical weapons destroyed deadline from April 2004 to December 2007, and that the United States will not meet the 100 percent April 2007 destruction deadline and may not meet the 2012 deadline, if extended. GAO cited persistent delays due to plant safety issues, environmental requirements, and funding shortfalls, and reiterated concerns about the significant management challenges and cost growth in the CDP.

FY 2005 Planned Activities

During FY 2005, chemical disposal operations will continue at the four operating chemical disposal facilities in Utah, Alabama, Maryland and Oregon. Two disposal facilities – one each in Arkansas, and Indiana- are scheduled to begin chemical disposal operations, and design and early construction work will continue at the facilities in Colorado and Kentucky. The PMNSCM will also continue its efforts to dispose of non-stockpile chemical material.

CMA will also continue programmatic efforts critical to the safe destruction of the U.S. chemical warfare materiel (CWM). Chemical stockpile storage safety and safety during disposal operations will remain CMA's top priority. These efforts will include ensuring environmental compliance in all operating facilities, and working toward ISO 14001 conformance certification at chemical facilities. CMA will work to increase monitoring capabilities to meet the new AELs and continue working with community groups on developing chemical agent monitoring strategies. A follow-up monitoring workshop is being planned for the first or second quarter of FY 2005.

During FY 2005, PAO will continue to focus on involvement of the communities, Congress, and other stakeholders, as well as to capitalize on important achievements and track issues in a targeted and measurable way. Outreach plans will be developed based upon research and evaluation to ensure that appropriate tools are used for these efforts. Tools include, but are not limited to, periodic newsletters, press releases, fact sheets, press briefings, editorial boards, representation at local meetings, and speaking engagements. In addition, PAO will maintain communications with the chemical demilitarization workforce to ensure their information needs are met.

II. CHEMICAL WEAPONS CONVENTION

The United States continued to comply with the requirements of the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction, commonly known as the CWC.

Of the original U.S. Category 1 chemical materiel, consisting of 32,194 tons of chemical agent (31,498 stockpile and 696 non-stockpile tons), 1,582 U.S. tons were destroyed prior to entry into force of the CWC on April 29, 1997. Thus, the declared Category 1 chemical materiel consists of 30,612 U.S. tons of chemical agent, including 696 U.S. tons of NSCM. Category 1 chemical weapons include the unitary chemical stockpile, binary components, and some chemical samples and recovered chemical weapons. For CWC purposes, 28.7 percent of the declared Category 1 chemical materiel has been destroyed as of September 30, 2004. The United States is on track to meet the extended deadline of December 2007 for destruction of 45 percent of Category 1 chemical weapons. As reported previously, the formal U.S. request for this extension was granted by the Organisation for the Prohibition of Chemical Weapons (OPCW) Conference of State Parties on October 3, 2003.

In addition to destruction of chemical weapons, the CWC also requires destruction or conversion of former chemical weapons production facilities (FPFs) for chemical weapons. As of September 30, 2004, the United States had destroyed nearly 82 percent of its capacity to produce chemical weapons, having met the 80 percent destruction milestone on December 18, 2003, 16 months ahead of the April 29, 2005 deadline.

The United States continued to host CWC inspectors at chemical agent storage, disposal and former production facilities across the country. This included the continuous presence of CWC inspectors to monitor the destruction of unitary chemical weapons at all facilities housing declared material.

CMA prepared several documents that were submitted by the United States to the OPCW in accordance with CWC requirements. The annual chemical weapons and FPF destruction plans and reports prepared in FY 2004 for submission to the OPCW are shown in the following table. These plans and reports cover the calendar years shown in their titles, not FY 2004.

CWC Destruction Plans and Reports Prepared in FY 2004	Month and Year
United States of America, 2003 Annual Report for Destruction of Chemical Weapons	February 2004
United States of America, 2003 Annual Report for Destruction of Former Chemical Weapons Production Facilities	March 2004
United States of America, 2005 Annual Plan for Destruction of Former Chemical Weapons Production Facilities	September 2004
United States of America, 2005 Annual Plan for Destruction of Chemical Weapons	October 2004*

* To be submitted in first quarter of FY 2005

CMA continued to represent the U.S. Army at the OPCW to negotiate inspection and verification agreements for U.S. chemical storage, disposal, and former production facilities.

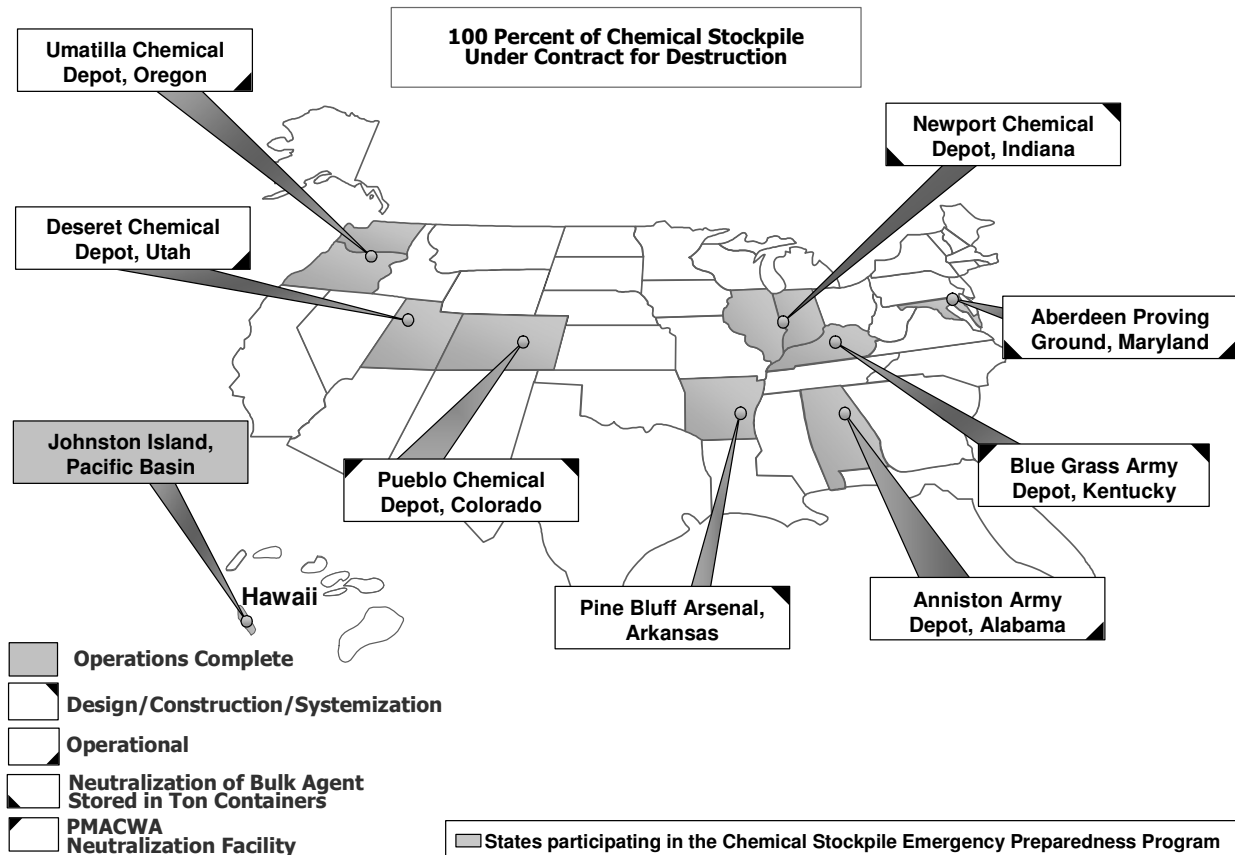
CMA continues to prepare for verification requirements mandated by the CWC. This preparation includes hosting coordination meetings, developing required documentation and training guides, sharing lessons learned from operational disposal facilities, and preparing facility-specific technical documentation. It also includes conducting pre-inspection meetings, engineering reviews, and exercises to prepare for CWC inspections.

FY 2005 Planned Activities

Programmatic support to the CWC will continue throughout FY 2005. The U.S. Army will continue to prepare the necessary documentation and provide support to OPCW inspections at U.S. chemical storage, disposal, and former production facilities.

III. CHEMICAL STOCKPILE DISPOSAL

National Chemical Stockpile Distribution by Storage Location



Note: unless annotated, destruction technology is incineration

During FY 2004, CMA destroyed approximately 1,639 tons of chemical agent (5.2 percent) out of the original U.S. stockpile of 31,498 tons in the U.S. stockpile. As of September 30, 2004, the U.S. has destroyed a total of 9,859 tons (31.3 percent) of the original U.S. stockpile.

CMA continued to identify and address processing challenges and risk items, including the following:

- Gelled Rocket Processing.* After completion of the nerve agent GB agent trial burns (ATBs), TOCDF discovered that portions of their stockpile included gelled rockets. Gelled rockets were not a critical path item for TOCDF, and were co-processed with nerve agent GB TCs and projectiles. If ANCDF, the Pine Bluff Chemical Agent Disposal Facility (PBCDF), and UMCDF were limited to TOCDF's actual processing rates for gelled rockets, there would have been significant schedule impacts. Therefore, the systems contractors (SCs) used thermal modeling to identify optimal throughput rates and provide a basis for permit modification requests. ANCDF has been successfully and safely processing gelled GB M55 rockets at the higher processing rates. The SCs at

other facilities have used this data to provide their state regulators with engineering calculations to request approval for optimal processing rates.

- *Mustard Processing Strategy.* Sampling of mustard TCs at DCD has determined that some mustard TCs are contaminated with varying levels of mercury. This could potentially impact disposal operations due to mercury emission limits in the environmental permits. PMCSD is developing a mustard processing strategy for TOCDF to ensure that all mustard TCs are processed safely and in compliance with environmental regulations. The strategy may include 100 percent sampling of mustard TCs, implementing a washout system for larger volumes of solid residue, installing a pollution abatement filter system for mercury removal, and implementing a mercury continuous emissions monitoring system to ensure mercury emission control requirements are met.

Johnston Atoll Chemical Agent Disposal System, Johnston Island, Pacific Ocean

Highlights

The chemical stockpile that was stored on Johnston Island has been completely destroyed and the Johnston Atoll Chemical Agent Disposal System (JACADS) is closed.

Closure

JACADS has been closed since December 2003. All Washington Demilitarization Company (WDC) (the JACADS SC) personnel have departed Johnston Island and all systems, structures, and components have been decontaminated and dismantled in accordance with the Resource Conservation and Recovery Act (RCRA) permit conditions. Removal of the contaminated coral (7,000 U.S. tons were classified as non-hazardous, and 500 U.S. tons were classified as hazardous due to elevated levels of lead and chromium) was completed in June 2004. The coral was shipped to a permitted landfill in Oregon.

Final closure verification sampling was completed in June 2004 and results from this sampling are being used for the ecological and human health risk assessments. Interim draft ecological and human health risk assessments are undergoing review.

Environmental Compliance

Activities to close out the RCRA permit are underway.

Public Outreach

In November 2003, the CMA public outreach team coordinated an official JACADS closure ceremony in Honolulu, Hawaii and on Johnston Atoll. Approximately 100 supporters and stakeholders attended the event, which included distribution of a newsletter and other commemorative materials.

FY 2005 Planned Activities

FY 2005 planned activities include closeout of the RCRA permit and submission of the interim draft ecological and human health risk assessments to the EPA Region IX.

Note

With all milestones complete, the DoD will no longer include JACADS in this annual status report unless required by future circumstances or requested by Congress.

Deseret Chemical Depot, Tooele Chemical Agent Disposal Facility, and Chemical Agent Munitions Disposal System, Utah

Highlights

During FY 2004, TOCDF destroyed 1,121 M55 rockets and M56 warheads, 53,216 155mm projectiles, 632 TCs, and 329 spray tanks, which contained approximately 827 U.S. tons of nerve agent VX. On September 12, 2004, TOCDF passed the 50 percent destroyed mark of the original stockpile (in U.S. tons of chemical agent) stored at DCD.

TOCDF Operations

As reported in the FY 2003 annual status report, EPA required that the Toxic Substances Control Act (TSCA) demonstration portion of the VX ATB for the Deactivation Furnace System (DFS) be re-conducted. This repeat encompassed a series of mini-burns, which were completed on October 28, 2003, and a trial burn that was successfully completed on November 16, 2003. TOCDF processed all remaining VX M55 rockets on November 17, 2003, completing that campaign. The VX M56 warhead campaign was completed on November 9, 2003. Cumulative disposal has resulted in a 99 percent overall reduction of risk from chemical stockpile storage at DCD.

TOCDF began processing nerve agent VX ton containers on October 3, 2003, and 155mm projectiles on October 7, 2003. Processing was temporarily suspended in December 2003 due to a problem with increased moisture in the Depot Area Air Monitoring System (DAAMS) sampling lines, but resumed in January 2004. The VX ATB for the Liquid Incinerator was successfully completed on January 29, 2004. After receiving approval of modifications to the Metal Parts Furnace (MPF) discharge airlock from the State of Utah, TOCDF successfully completed the MPF VX ATB on April 7, 2004.

TOCDF completed processing of VX TCs on April 24, 2004, and on May 18, 2004, received approval from the State of Utah to operate at 75 percent of the feed rate demonstrated during the MPF ATB. The last VX 155mm projectiles were processed on August 16, 2004, and TOCDF is now focusing on processing VX spray tanks and preparations for the VX land mine campaign. On August 26, 2004, Edgerton, Germehausen & Grier (EG&G) (the TOCDF SC) initiated a voluntary compliance stand-down to ensure complete implementation of processing requirements mandated by the RCRA permit and other standard operating procedures. All corrective actions were addressed and TOCDF resumed processing on September 10, 2004.

Environmental Compliance

The RCRA permit was renewed in FY 2004. All other necessary permit requirements have been met and maintained and entailed no further action during fiscal year 2004.

Chemical Stockpile Safety

The remainder of the chemical stockpile at DCD continues to be stored safely. During FY 2004, 82 leaking munitions and overpack containers were identified at DCD (see the summary table in appendix B). Leakers were handled in accordance with chemical surety procedures and there was no release of chemical agent to the environment. Ongoing disposal has resulted in a 99 percent overall reduction of risk from chemical stockpile storage at DCD by the end of FY 2004. CMA continues to investigate ways to maximize the efficiency of the destruction schedule while reducing public risk from the chemical stockpile. Storage risk has also been reduced by the completion of reconfiguration of mustard 4.2-inch mortar rounds in support of the upcoming TOCDF mustard campaign.

Public Outreach

During FY 2004, the TOCDF public affairs team distributed information about the nerve agent VX campaign to stakeholders and the community by providing presentations, speaker support, information materials, and exhibits at local events.

Chemical Stockpile Emergency Preparedness

Emergency preparedness continues in a sustainment mode with a high degree of cooperation among stakeholders. The annual CSEPP exercise took place on September 15, 2004. Community emergency preparedness was maintained with the replacement of expiring Mark 1 nerve agent antidote kits and enhanced with additional personal protective equipment. On-post and off-post emergency response personnel received and were trained on the use of the D2-Puff version 4.4 hazard prediction model which enhances hazard modeling capabilities. CSEPP funds were provided to the DCD public affairs office funding to establish a Mobile Joint Information Center (JIC) for use if the designated JIC became unavailable in a chemical emergency.

Operations at the Chemical Agent Munitions Disposal System

CAMDS continued to support chemical demilitarization. Activities included: sampling mustard agent TCs, testing a lewisite neutralization system, and testing a munitions washout system for the ACWA program. CAMDS completed reconfiguration of 4.2-inch mustard agent mortars stored at DCD in support of future TOCDF operations. CAMDS began processing nerve-agent GB-contaminated demilitarization protective ensemble suits using the materiel decontamination chamber following the receipt of state approval on June 3, 2004.

Incidents

During FY 2004, two Category II chemical events (defined in accordance with Army Regulation 50-6, Chemical Surety) other than events involving leaking munitions occurred at Utah facilities.

a. Chemical Agent Alarm in CAMDS Laboratory. On November 3, 2003, the ventilation system of a fume hood in the CAMDS laboratory agent room alarmed for chemical agent. Four lab personnel were present preparing sample solutions. Workers masked and evacuated the facility. Subsequently, the Automated Continuous Air Monitoring System (ACAMS) in the agent room alarmed and the site personnel masked. The investigation into this event traced the cause of the ACAMS alarm to a filter malfunction in the hood ventilation system. The filter was repaired and operating procedures adjusted. No workers were exposed and no agent was released to the environment.

b. Chemical Agent Alarm in TOCDF Laboratory. On May 18, 2004, the ACAMS inside the agent vault room at the TOCDF laboratory alarmed at 3.69 time-weighted average (TWA). Laboratory personnel masked and evacuated. DAAMS samples confirmed the presence of chemical agent. Two workers were sent to the medical clinic for evaluation and did not show any signs of chemical agent exposure. Toxic operations at TOCDF were halted until an investigation was completed, which determined an open fume hood inside the agent vault room to be the most likely source of the contamination. No chemical agent was released to the environment. Corrective actions were implemented.

FY 2005 Planned Activities

During FY 2005, TOCDF is scheduled to complete the nerve agent VX campaign, involving the processing of the remainder of nerve agent VX spray tanks and the disposal of VX land mines. Once the VX campaign is complete, changeover to mustard destruction will commence.

Anniston Chemical Activity and Anniston Chemical Agent Disposal Facility, Alabama

Highlights

ANCDF continued processing chemical agent during FY 2004, destroying 36,416 M55 rockets, containing approximately 194.7 U.S. tons of nerve agent GB.

ANCDF Operations

ANCDF successfully completed a nerve agent GB ATB for the Liquid Incinerator (LIC) on November 16, 2003, and a drainable GB M55 rocket ATB for the DFS on November 24, 2003. Following a shakedown period of several months, the DFS ATBs for M55 rockets containing gelled/crystallized nerve agent GB were successfully completed on April 4, 2004. The trial burn report was approved by the State of Alabama on August 6, 2004, allowing the processing of gelled/crystallized M55 rockets.

Preliminary testing for TSCA was completed during the November 2003 GB ATB. In response to a request from the EPA for additional data regarding destruction of polychlorinated biphenyls (PCBs), ANCDF successfully conducted an additional TSCA demonstration test on March 17, 2004. ANCDF received approval of the TSCA demonstration test report from EPA on May 6, 2004. This approval, together with the approval to operate at 75 percent of the DFS ATB demonstrated feed rate that was granted by the State of Alabama on April 20, 2004, allowed ANCDF to increase its processing rates. Processing of all drainable GB M55 rockets was completed on July 31, 2004. ANCDF experienced 16 non-processing days due to Heated Discharge Conveyor jams and DFS feed chute issues during FY 2004.

In addition to processing gelled/crystalline GB M55 rockets, ANCDF is currently preparing for the GB 8-inch projectile campaign. The State of Alabama approval of the MPF ATB plan, a necessary prerequisite to begin processing of the GB 8-inch projectiles, was received on May 25, 2004.

Environmental Compliance

All necessary permit requirements have been met and maintained and entailed no action during fiscal year 2004.

Chemical Stockpile Safety

The remainder of the chemical stockpile at ANCA continues to be stored safely. During FY 2004, 33 leaking munitions and overpack containers were identified at ANCA (see summary table in appendix B). Leakers were handled in accordance with chemical surety procedures and there was no release of chemical agent to the environment. Ongoing disposal of GB M55 rockets has resulted in a 33 percent overall reduction of risk from chemical stockpile storage at ANCA by the end of FY 2004. As disposal operations continue, the storage risk at ANCA will be reduced further. In addition, CMA is considering risk mitigation options for storage of nerve agent VX rockets. Among

these options is the possible placement of dielectric barriers in igloos to reduce the potential for M55 rocket ignition due to lightning.

Public Outreach

In August 2004, the ANCDF public affairs team commemorated the completion of the first year of safe operations at ANCDF with a progress update, newspaper advertisements, public meetings and community open houses.

Chemical Stockpile Emergency Preparedness

Emergency operations centers at ANCA and the Fort McClellan Alabama Army National Guard Training Center continuously monitor all activities on the base and alert civilian authorities of any potential problems. The annual CSEPP emergency response exercise took place on March 10, 2004. Community emergency preparedness was maintained with the replacement of expiring Mark 1 nerve agent antidote kits and was enhanced with additional personal protective equipment. The D2-Puff version 4.4 hazard prediction model was installed in the Anniston CSEPP community to provide enhanced hazard modeling capabilities.

Incidents

During FY 2004, there were no Category II chemical events (defined in accordance with Army Regulation 50-6, Chemical Surety) at Alabama facilities other than events involving leaking munitions.

FY 2005 Planned Activities

During FY 2005, ANCDF will complete processing GB M55 rockets and begin processing GB 8-inch projectiles. The public affairs team is planning to conduct a stakeholder survey to ensure significant issues are surfaced.

Umatilla Chemical Depot and Umatilla Chemical Agent Disposal Facility, Oregon

Highlights

UMCDF began chemical agent operations on September 7, 2004, with the delivery of the first nerve agent GB M55 rocket, which was processed on September 8, 2004. UMCDF is the fourth operational chemical disposal facility in the continental United States. As of September 30, 2004, UMCDF has processed 232 M55 rockets, containing 1.2 U.S. tons of nerve agent GB.

UMCDF Operations

The DoD notified Congress on June 17, 2004, of its intent to begin chemical agent operations at UMCDF. Final approval to begin agent operations was received from the State of Oregon on August 13, 2004; however, startup was delayed due to issues involving the plant's ventilation system and the test method to validate filter performance. These issues were resolved prior to the start of agent operations. Following the processing of the first GB M55 rocket on September 8, 2004, UMCDF has been conducting a slow and deliberate ramp-up process to ensure that all plant systems function as intended and the workforce is demonstrating proficiency.

The 90-day startup plan UMCDF is following was previously developed and successfully implemented at ANCDF. This is an example of the direct transfer of lessons learned and operational experience between CMA facilities.

Environmental Compliance

All necessary permit requirements have been met and maintained and entailed no action during fiscal year 2004.

Chemical Stockpile Safety

The remainder of the chemical stockpile at UMCD continues to be stored safely. During FY 2004, 11 leaking munitions and overpack containers were identified at UMCD (see summary table in appendix B). Leakers were handled in accordance with chemical surety procedures and there was no release of chemical agent to the environment. As nerve agent GB disposal operations continue, the storage risk at UMCD will be reduced. Earthquakes remain the dominant contributor to the public risk of storage. Stack height reduction and banding of VX M55 rocket pallets was completed during FY 2004 to reduce risk.

Public Outreach

The UMCDF public affairs team conducted a community survey designed to assess community attitudes and opinions about CMA's outreach efforts. The survey results were used to design information products and community interactions in preparation of the start of operations at UMCDF. More than 60,000 copies of a 16-page

newspaper insert that answered community questions were distributed through local newspapers.

Chemical Stockpile Emergency Preparedness

Cooperation among the Army, DHS-FEMA, the State of Oregon, the Confederated Tribes of the Umatilla Indian Reservation, and local government CSEPP entities was adequate to support the start of operations at UMCDF. The annual CSEPP exercise took place on May 5, 2004. Community emergency preparedness was maintained with the replacement of expiring Mark 1 nerve agent antidote kits and was enhanced with additional personal protective equipment. The D2-Puff version 4.4 hazard prediction model was installed in the Umatilla CSEPP community to provide enhanced hazard modeling capabilities.

Incidents

During FY 2004, there were no Category II chemical events (defined in accordance with Army Regulation 50-6, Chemical Surety) at Oregon facilities other than events involving leaking munitions.

On September 14, 2004, two workers incorrectly passed through the Toxic Cubicle room while performing an entry in the Toxic Maintenance Area to dispose of waste. The employees incorrectly passed through the TOX room, which houses the chemical agent holding tanks, into the Spent Decontamination System room while trying to check the egress route. Upon returning to the Lower Munitions Corridor (LMC), the employees again passed through the toxic cubicle. Once they exited into the LMC, it was determined they had inappropriately passed through the Toxic Cubicle area. Their entry was aborted. They doffed their protective gear, performed personal agent monitoring checks and exited out through the airlocks, and were taken to the UMCDF clinic for evaluation, where it was determined that they were not exposed to agent. UMCDF immediately halted rocket operations, conducted a root cause analysis, and implemented corrective actions, ensuring additional oversight teams were put into place. Rocket processing resumed on 20 Sep 04, following the completion of the investigation and notification to ODEQ.

FY 2005 Planned Activities

During FY 2005, UMCDF will continue processing GB M55 rockets. An EIS update is also scheduled for completion during FY 2005.

Pine Bluff Chemical Activity and Pine Bluff Chemical Agent Disposal Facility, Arkansas

Highlights

During FY 2004, systemization of the PBCDF continued and the facility is now in the final stages before the start of agent operations.

PBCDF Systemization

The final phase of systemization demonstrations includes three levels of evolutions, each of which builds upon the training and testing activities and leads to the final demonstrations. PBCDF successfully completed Level 1 evolution exercises in September 2004.

Surrogate trial burns (STBs) for the LIC, DFS, and MPF were completed on June 30, 2003, November 5, 2003, and January 7, 2004, respectively. The LIC and DFS STB reports were approved by the State of Arkansas on April 21, 2004. The MPF STB report was approved on July 27, 2004. The LIC and DFS ATB plans were tentatively approved by the State of Arkansas pending a public review and comment period, which will conclude during the first quarter of FY 2005. The MPF ATB plan is awaiting comment resolution prior to release for public review.

Environmental Compliance

All necessary permit requirements have been met and maintained and entailed no action during fiscal year 2004.

Chemical Stockpile Safety

The chemical stockpile at Pine Bluff Chemical Activity (PBCA) continues to be stored safely. During FY 2004, there were no leaking munitions and overpack containers identified at PBCA (see summary table in appendix B). The possibility of lightning affecting the M55 rockets is still the greatest contributor to the public risk of storage. The Phase 2 Quantitative Risk Assessment, which incorporates the dielectric barriers placed in igloos during FY 2003, was completed during FY 2004.

Public Outreach

The PBCDF public affairs team supported the preparations for the start of chemical agent disposal operations by organizing and conducting a wide range of community activities to engage stakeholders and raise awareness and knowledge about emergency preparedness and the disposal program.

Chemical Stockpile Emergency Preparedness

Cooperation among the U.S. Army, FEMA, the State of Arkansas, and local government CSEPP entities continued to be excellent. The annual CSEPP emergency

response exercise was held on February 4 through 6, 2004, as an Army Service Response Force Exercise (see page 4). Community emergency preparedness was maintained with the replacement of expiring Mark 1 nerve agent antidote kits and was enhanced with additional personal protective equipment. The D2-Puff version 4.4 hazard prediction model was installed in the Pine Bluff CSEPP community to provide enhanced hazard modeling capabilities.

Incidents

During FY 2004, there were no Category II chemical events (defined in accordance with Army Regulation 50-6, Chemical Surety) at Arkansas facilities other than events involving leaking munitions.

FY 2005 Planned Activities

Systemization final stage Level 2 evolution exercises at PBCDF are scheduled to begin in FY 2005. The final steps prior to agent operations at PBCDF include a series of simulated drills and plant operations rehearsals, as well as extensive operational readiness evaluations. Plant exercises will be followed by the Integrated Plant Run and the Integrated Operations Demonstration. These activities will support the planned start of chemical agent operations during FY 2005. An EIS update is also scheduled to be completed during FY 2005.

Edgewood Chemical Activity and Aberdeen Chemical Agent Disposal Facility, Maryland

Highlights

ABCDF continued chemical agent disposal operations during FY 2004, draining 745 TCs and neutralizing approximately 628.9 U.S. tons of mustard agent. As of September 30, 2004, ABCDF has destroyed a total of 42.1 percent of the Edgewood chemical stockpile, and shipped approximately 1.8 million gallons of hydrolysate to Dupont Chambers Works, Deepwater, New Jersey, the contracted off-site treatment facility.

ABCDF Operations

Process-related technical issues associated with operating a first-of-a-kind facility were encountered during the system startup phase. Lower than anticipated initial production rates led to a revision of the project schedule to incorporate the extended ramp-up. ABCDF has been able to overcome many of the challenges and has successfully demonstrated its ability to achieve the design production rate of 12 TCs per day. However, equipment reliability has prevented ABCDF from continuous operations at this rate. Current production forecasts are based on a more realistic rate of six to eight TCs per day.

Neutralization operations resumed on January 15, 2004, after a safety stand-down had been imposed following the August 16, 2003, incident of smoke release in the on-line carbon drum filter in the neutralization process tank vent system. There were no chemical agent exposures or releases into the environment. Modifications to the vent condenser and associated equipment resolved the issue.

On February 24, 2004, TC draining operations were suspended due to leakage from agent drain pumps and flow problems with agent feed pumps. Bechtel Aberdeen (the ABCDF SC) resolved the issue by repairing the pumps. Agent neutralization operations resumed the last week of April 2004.

Hydrolysate samples from hydrolysate tank Q-605 contained a higher level of mercury than previously encountered in other samples in July 2004. The levels of mercury have varied significantly from tank to tank. The mercury is believed to have been introduced as a contaminant in the chlorine used during mustard production. Its levels are considered to be variable across the stockpile. The hydrolysate disposal contractor has met with the State of New Jersey environmental regulators to recommend the filtering of the hydrolysate as a means of removing the solids that tend to accumulate the mercury. The regulators have agreed with this approach and hydrolysate shipments are no longer expected to be impacted by the presence of mercury.

Planning continues for the readiness assessment of the integrated TC Cleanout (TCC) Facility. Work continues in the TCC Facility to prepare the equipment and facility to begin TCC operations.

Environmental Compliance

All necessary permit requirements have been met and maintained and entailed no action during fiscal year 2004.

Chemical Stockpile Safety

The remainder of the chemical stockpile at Edgewood Chemical Activity (ECA) continues to be stored safely. During FY 2004, one leaking TC was identified at ECA (see summary table in appendix B). The leaker was handled in accordance with chemical surety procedures and there was no release of chemical agent to the environment. Ongoing disposal operations have resulted in a 54 percent overall reduction of risk from chemical stockpile storage at ECA by the end of FY 2004.

Public Outreach

The ABCDF public affairs team supported ongoing communication with the community regarding the technical challenges at ABCDF during FY 2004. Public meetings, newsletters, progress updates and report card mailers were among the products and activities used to inform and involve the community.

Chemical Stockpile Emergency Preparedness

Cooperation between the U.S. Army and the local community continued to be excellent. The annual CSEPP exercise took place on August 4, 2004; it was likely the final CSEPP exercise at ECA.

Incidents

During FY 2004, four Category II chemical events (defined in accordance with Army Regulation 50-6, Chemical Surety) other than events involving leaking munitions occurred at Maryland facilities.

a. *Mustard Agent Vapor in ABCDF Drain Station Room.* On November 14, 2003, very low levels of mustard agent vapor were detected inside a TC drain station room. Three operators were using hot water to rinse a recently drained TC when the agent monitor at the drain station alarmed. Operators masked and evacuated the building. They were sent to the medical clinic for evaluation and were found not to have been exposed to chemical agent. No agent was released outside engineering controls.

b. *Mustard Agent Vapor in ABCDF Drain Station Room.* On November 28, 2003, very low levels of mustard agent vapor were detected inside a TC drain station room. There were no TC drain operations being conducted at the time. An investigation determined an apparent pipe failure in the glove box as the source of the agent vapor that activated MINICAMS[®] alarms. No personnel were exposed, and no agent was released outside engineering controls.

c. Rinsewater Spill in ABCDF Neutralization Bay. On January 25, 2004, during a routine flush of the vent condenser, rinsewater spilled into the neutralization bay. The neutralization bay is designed to contain agent liquid and vapor. Engineering controls worked as designed and no agent was released to the environment. The two operators conducting the flush were wearing protective clothing. Liquid contacted the exterior of the suits. Extended decontamination did not completely clean the exterior of the suits, necessitating a hot cut-out. During this procedure all workers remained in respiratory protection until confirmed clean. The two operators were medically evaluated and showed no signs of agent exposure.

d. MINICAMS[®] Alarm in ABCDF Drain Station. On August 12, 2004, the MINICAMS[®] in Drain Station One alarmed at 0.84 TWA. Four operators were present performing glove box cleanup and waste removal operations. They immediately masked and evacuated the area. MINICAMS[®] readings returned to normal shortly after the alarm. No chemical agent was released to the environment. The four workers were medically examined and cleared. Operating procedures have been adjusted to mitigate against recurrence of this type of incident.

FY 2005 Planned Activities

ABCDF will complete TC draining and mustard agent neutralization operations and begin TCC operations during FY 2005.

Newport Chemical Depot and Newport Chemical Agent Disposal Facility, Indiana

Highlights

Construction and systemization of the Newport Chemical Agent Disposal Facility (NECDF) is complete. The facility is preparing for the start of agent operations.

NECDF Systemization

Final site lockdown was implemented on September 23, 2004.

Parsons (the NECDF SC) monitored and evaluated the air diaphragm agent pumps. The pumps leaked, despite several maintenance actions, and needed to be replaced with electric gear pumps. Installation and testing of the new gear pumps was completed in September 2004.

Optimization work on the analytical procedure for clearing hydrolysate made from greater than eight percent by weight nerve agent VX loading is continuing. The analytical procedures for clearing hydrolysate at eight percent agent loading are in place to support startup of agent operations as currently planned. VX MINICAMS[®] modifications, resulting from VX vapor validation efforts, were successfully implemented at NECDF.

Dupont Chambers Works, Deepwater, New Jersey, the prospective TSD contractor for disposal of the caustic wastewater (hydrolysate) produced at NECDF, completed its environmental treatment assessments and concluded that treatment and disposal of the caustic wastewater can be performed safely.

The NECDF site project office is acquiring 48 4,500 gallon intermodal containers to provide interim hydrolysate holding capacity. This will enable the start of chemical agent operations prior to finalizing a contract for off-site treatment of the hydrolysate. Construction of the intermodal container storage area was completed on August 27, 2004, with 38 out of the 48 containers onsite.

Installation of the TC line-enhanced steam decontaminator structure, walls, and equipment at NECDF is complete.

Environmental Compliance

The CWA permit will be rendered unnecessary if NECDF ships hydrolysate to a licensed TSD. The current RCRA permit is being submitted for renewal and will reflect prior regulatory approval to treat the wastes in un-permitted, less-than-90-day hazardous waste tanks. A draft revised FONSI was published in December 2003 and public comments were received. All other necessary permit requirements have been met and maintained and entailed no action during fiscal year 2004.

The Army is examining the feasibility of shipping hydrolosate to DuPont Chambers Works, Deepwater, New Jersey for treatment and disposal. DuPont

prepared a series of analyses that demonstrated that it can safely and effectively treat the hydrolosate. At the request of the New Jersey and Delaware Congressional delegations, a review of DuPont's methodologies and findings is currently being undertaken by the Centers for Disease Control and Prevention (CDC) and EPA Region II; the results are pending. Once that review is received, an additional 30-day public comment period will be provided, the comments will be considered, and revised environmental documentation will be prepared.

Chemical Stockpile Safety

The chemical stockpile at NECD continues to be stored safely. During FY 2004, no leaking TCs were identified at NECD (see summary table in appendix B). There are no new or outstanding safety issues regarding chemical stockpile storage at NECD.

Public Outreach

The CMA and NECDF public affairs teams supported plans to treat caustic wastewater from NECDF at a TSD in New Jersey. Public meetings were conducted in Indiana, Delaware, and New Jersey, and CMA held a public comment period of more than 120 days on the proposal. A report on the proposal by the Centers for Disease Control and Prevention (CDC) and the EPA is pending. Once that report is received, an additional 30-day comment period will be provided for the public.

Focus groups were conducted during FY 2004 in the Newport, Indiana, area with key stakeholders and the public to identify community perceptions and concerns, and to assess the effectiveness of current outreach activities. In addition, a survey was conducted with the NECDF workforce to determine their information needs and attitudes. The information from these two public affairs research initiatives has been used to develop internal communications and external information programs. NECDF initiated roundtable discussions with key stakeholders in FY 2004 to encourage dialogue on CMA activities and to answer questions about chemical disposal.

Chemical Stockpile Emergency Preparedness

Cooperation between the U.S. Army, DHS-FEMA, and the local community continued to be successful in addressing emergency preparedness issues. The annual CSEPP exercise took place on April 21, 2004. Community emergency preparedness was maintained with the replacement of expiring Mark 1 nerve agent antidote kits and was enhanced with additional personal protective equipment. The D2-Puff version 4.4 hazard prediction model was installed in the Newport CSEPP community to provide enhanced hazard modeling capabilities.

In FY 2004, NECD became the first CSEPP site to obtain a Mobile JIC, a suite of computers, audio-visual equipment, printers, and other equipment that would enable the JIC to operate at an alternate location should the primary facility become unusable during an emergency.

Incidents

During FY 2004, there were no Category II chemical events (defined in accordance with Army Regulation 50-6, Chemical Surety) at Indiana facilities.

FY 2005 Planned Activities

NECDF is scheduled to begin chemical agent operations in FY 2005, pending receipt of the CDC and EPA report on the proposed off-site disposal of caustic wastewater and the subsequent FONSI. Systemization of the TC enhanced steam decontamination system will also be completed during FY 2005.

Pueblo Chemical Depot and Pueblo Chemical Agent-Destruction Pilot Plant, Colorado

Highlights

The Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP) is currently in design. A groundbreaking open house was held on September 18, 2004, to celebrate the authority to start construction.

Design

Design, pre-construction, and environmental permitting activities continued at the PCAPP during FY 2004. Bechtel Pueblo, the PCAPP SC submitted the initial design (30 percent complete) in January 2004 and the intermediate design (60 percent complete) in May 2004.

During FY 2004, the DoD, concerned that the design concept may not be fiscally executable, directed an evaluation of design alternatives for PCAPP. As a result of the design alternatives analysis, the government directed the SC to stop all work on the current design of process buildings and conduct trade studies. The intent of the trade studies is to identify areas that could potentially decrease the life cycle cost of PCAPP by reducing the design footprint, capital equipment, and number of personnel required for operations. DoD also requested independent assessments of the PCAPP design approach.

Environmental Compliance

The State of Colorado issued the RCRA RD&D permit for stage I construction of the PCAPP on July 1, 2004. Stage I construction includes clearing and grubbing, grading and backfilling, stormwater drainage, underground electrical and gas line, hi-mast lighting and fencing, potable water and fire lines, sanitary sewer, temporary construction facilities, and a warehouse. The Pueblo County Certificate of Designation was issued on August 23, 2004. The approval of these permits authorized the initial construction of the PCAPP facility.

The EIS was completed in March 2002; the ROD was signed in July 2002. An environmental assessment and a FONSI for off-site treatment and disposal of uncontaminated wood dunnage and uncontaminated and stable propellant were completed in July 2004.

All other necessary permit requirements have been met and maintained and entailed no action during fiscal year 2004.

Chemical Stockpile Safety

The chemical stockpile at Pueblo Chemical Depot (PCD) continues to be stored safely. During FY 2004, nine leaking munitions or overpack containers identified at

PCD (see summary table in appendix B). Other than human activity, the greatest contributor to storage risk at PCD remains the possibility of a seismic event. There are no new or outstanding safety issues regarding chemical stockpile storage at PCD.

Public Outreach

The PCAPP public affairs team organized the PCAPP groundbreaking open house on September 18, 2004, to celebrate the start of Stage 1 construction of the chemical disposal pilot facility. More than 400 people attended, including community members, depot employees and family members, and project personnel. Key local, state, and federal elected officials; community members; and SC personnel spoke at the event, which also included displays and information tables to provide details on the munitions stored at the depot, the destruction technology, construction phases, the history of the depot, and education opportunities related to the chemical demilitarization program being provided to the local school system.

Chemical Stockpile Emergency Preparedness

Cooperation among the U.S. Army, DHS-FEMA, the State of Colorado, and local governments continued to be excellent. The annual CSEPP exercise took place on May 19, 2004. The D2-Puff version 4.4 hazard prediction model was installed in the Pueblo CSEPP community to provide enhanced hazard modeling capabilities.

Incidents

During FY 2004, there were no Category II chemical events (defined in accordance with Army Regulation 50-6, Chemical Surety) at Colorado facilities.

FY 2005 Planned Activities

FY 2005 planned activities will be determined once a path forward has been selected.

Blue Grass Chemical Activity and Blue Grass Chemical Agent-Destruction Pilot Plant, Kentucky

Highlights

The Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) is currently in design.

BGCAPP Design

During FY 2004, the DoD directed a program to evaluate alternatives to the current design that would improve safety, technical executability, and cost-effectiveness. Technical risk reduction program testing is continuing in support of the intermediate and final design packages.

Environmental Compliance

A RCRA RD&D permit application was submitted to the Commonwealth of Kentucky in March 2004. A CAA permit application was submitted in September 2004. The EIS was completed in December 2002; the ROD was signed in February 2003. All other necessary permit requirements have been met and maintained and entailed no action during fiscal year 2004.

Chemical Stockpile Safety

The chemical stockpile at Blue Grass Chemical Activity (BGCA) continues to be stored safely. During FY 2004, there were no leaking munitions or overpack containers identified at BGCA (see summary table in appendix B). Lightning remains the top contributor to storage risk at BGCA. Options to mitigate lightning risk to M55 rockets, including placement of dielectric barriers in igloos, are being studied.

Public Outreach

The BGCA public affairs team worked closely with the Chemical Destruction Community Advisory Board, an independent body organized in 2003 to represent the community and provide advice on policy issues regarding the BGCAPP. In addition, the team distributed information products both through the local outreach office and the ACWA public Web site.

Chemical Stockpile Emergency Preparedness

Cooperation between the U.S. Army, DHS-FEMA, the Commonwealth of Kentucky, and local governments continued to be excellent. The annual CSEPP exercise took place on October 29, 2003. Community emergency preparedness was maintained with the replacement of expiring Mark 1 nerve agent antidote kits and was enhanced with additional personal protective equipment. The D2-Puff version 4.4 hazard prediction model was installed in the Blue Grass CSEPP community to provide enhanced hazard modeling capabilities.

The CMA CSEPP office provided the BGCA public affairs office funding to establish a Mobile JIC for use if the designated JIC became unavailable in a chemical emergency.

Incidents

During FY 2004, there were no Category II chemical events (defined in accordance with Army Regulation 50-6, Chemical Surety) at Kentucky facilities.

FY 2005 Planned Activities

FY 2005 planned activities will be determined once a path forward has been selected.

Legal Issues

On March 11, 2003, the Chemical Weapons Working Group (CWWG) and others filed suit in the U.S. District Court for the District of Columbia to stop the U.S. Army's chemical weapons incineration programs in Alabama, Arkansas, Oregon, and Utah. The suit alleged that the U.S. Army violated the National Environmental Policy Act (NEPA) and sought an injunction barring any further expenditure of funds for construction and/or operations at the U.S. Army's four incineration facilities until the U.S. Army prepares a Supplemental Programmatic Environmental Impact Statement (SPEIS). CWWG alleges that a SPEIS is required under NEPA because significant new information has become available since the decision to use incineration was made in 1988. On August 8, 2003, the U.S. District Court denied CWWG's motion for a temporary restraining order. Cross motions for summary judgment were filed on December 22, 2003, and replies were filed on February 18, 2004. As of September 30, 2004, the court has not ruled on the motions or set a date for hearings.

Although requiring the expenditure of resource, these legal challenges have had no direct impact on continuing operations.

ANCDF, Alabama

On November 19, 2002, a collective of citizens' groups, including the CWWG, filed a lawsuit against the U.S. Army, WDC (the ANCDF SC), and the Alabama Department of Environmental Management in the U.S. District Court for the Northern District of Alabama. The complaint seeks to permanently enjoin incineration operations at ANCDF, alleging that the U.S. Army has violated NEPA by failing to prepare a SPEIS analyzing alternative disposal technologies, that operation of the incinerator will pose an imminent and substantial endangerment in violation of RCRA, and that use of incineration rather than alternative disposal technologies near minority communities violates the "equal protection" clause of the Fifth Amendment. On July 8, 2003, the court dismissed the Fifth Amendment count, and one RCRA count. The plaintiffs withdrew their NEPA count. Cross motions for Summary Judgment were filed on December 22, 2003, and the court has not ruled on the motions, or set a hearing date as of September 30, 2004.

UMCDF, Oregon

A trial in the previously reported lawsuit filed by three anti-incineration groups, along with residents from Umatilla and Morrow Counties, Oregon, against the Oregon Department of Environmental Quality (ODEQ) (with the U.S. Army and the UMCDF SC intervening) concluded on August 15, 2003. On July 26, 2004, the Oregon Circuit Court issued its decision requiring additional protection for whistleblowers but otherwise upheld permit decisions by ODEQ and the Environmental Quality Commission (EQC). On August 20, 2004, the Oregon Court of Appeals heard arguments in *GASP v. EQC* (this case is informally known as "GASP I"). This appeal by a citizen activist group challenges a 1999 Multnomah County Circuit Court decision granting a motion for summary judgment in favor of the EQC, affirming the Commission's issuance in 1997 of hazardous waste permits for incineration of chemical weapons at UMCDF. After

hearing arguments, the Court of Appeals allowed all parties an opportunity to file a supplemental brief of five pages within 20 days. On September 21, 2004, the Court of Appeals rejected a request for an injunction filed by GASP to stop UMCDF operations while the case is pending. A court opinion on GASP vs. EQC is pending.

On February 6, 2004, the Federal District Court issued its decision in Phase I of the trial in Akers et al v. United States. The court found that the U.S. Army had a mandatory and specific duty under applicable service regulations and Memoranda of Agreement with local emergency service providers to take command of the situation when construction workers were evacuated on September 15, 1999, due to fumes in the UMCDF. Phase II of the trial began on June 15, 2004 to determine if there was a leak of chemical agents and what injuries, if any, it may have caused to the plaintiffs. The court decision is pending.

NECDF, Indiana

No trial date has been set for the suit filed by the Legal Aid Society of Dayton, Ohio, on July 17, 2003, seeking an injunction to stop off-site shipment of hydrolysate to a TSDF. The case is moot since the NECDF SC cancelled its contract with the Dayton, Ohio, TSDF, but the plaintiffs have not yet withdrawn their lawsuit.

IV. NON-STOCKPILE CHEMICAL MATERIEL

During FY 2004, the Project Manager for Non-Stockpile Chemical Materiel (PMNSCM) pursued the following activities to safely destroy NSCM.

Recovery and Destruction of Chemical Warfare Materiel

PMNSCM supported activities to recover and destroy CWM at the following locations:

- *Spring Valley, Former Camp American University, Washington, District of Columbia.* The U.S. Army Corps of Engineers (COE) and PMNSCM-supported remediation continued at several locations of the former Camp American University, Spring Valley, Washington, DC (formerly used defense site). Of the items recovered so far, only 18 were confirmed or suspect CWM that have been safely destroyed. The COE announced on August 19, 2004, that excavation activities will be halted until the beginning of FY 2005 and the receipt of additional funding.
- *Fort McClellan, Alabama.* In December 2003, a Chemical Agent Identification Set (CAIS) vial was recovered and successfully destroyed using the Single CAIS Assessment and Neutralization System (SCANS).¹ On August 31, 2004, three CAIS items were recovered during planned COE remediation activities. An assessment of these items revealed no chemical agent and the items were disposed of accordingly.
- *Bridgeville, Delaware.* On July 19, 2004, a World War I 75mm mustard-filled projectile was discovered near Bridgeville, Delaware. Three members from an U.S. Air Force explosive disposal team were injured following exposure to the blister agent within the projectile. The recovered munition was safely stored at Dover Air Force Base (AFB). PMNSCM deployed the Explosive Destruction System (EDS)² and destroyed the projectile on October 28, 2004.
- *Fort Benning, Georgia/Harmony Church Site.* COE is conducting a scoping study of the Fort Benning, Georgia location. PMNSCM is supporting the efforts and provided the COE with an Interim Holding Facility (IHF) plan on February 26, 2004. On-site operations are scheduled to begin during the second quarter of FY 2005.
- *Holloman Air Force Base, New Mexico.* PMNSCM is supporting the COE geophysical/intrusive investigations at Holloman AFB, New Mexico. PMNSCM shipped an IHF to Holloman AFB on March 15, 2004. To date, 15 K951 CAIS vials have been recovered. Of the 15 vials, seven were determined to be industrial compounds, which will be sent to a TSDF for destruction. Eight of the

¹ The SCANS is a disposable neutralization reactor used to treat individual CAIS components.

² The EDS is a total containment vessel used to dispose of individual chemical munitions by controlled detonation and chemical neutralization.

CAIS vials were determined to contain agent (dilute mustard or lewisite) and were destroyed using the SCANS. The SCANS operations were completed on September 29, 2004.

- *Harvard Target Range, Nebraska.* PMNSCM is supporting COE operations at Harvard Target Range, Nebraska. An IHF was delivered on February 25, 2004. So far one M74 bomb, two M69 bomblets, four PIGs (CAIS containers), and 35 CAIS bottles have been recovered. None of these items were found to contain chemical agent.
- *Edgewood Area of Aberdeen Proving Ground, Edgewood, Maryland.* PMNSCM supported the Lauderick Creek remediation at APG-EA, which was completed during FY 2004. No CWM was recovered.

Binary Chemical Weapons Disposal

Binary components (56,820 binary M20 DF canisters, 7 drums of DF, and 292 drums of QL¹) will be destroyed by neutralization at a facility in a portion of the former Integrated Binary Production Facility (IBPF) at PBA. Neutralization wastes will then be shipped to a commercial TSDF for final disposition. The 100 percent design was completed in June 2004. The detailed facility information was completed and submitted to the OPCW in September 2004. Pine Bluff Binary Destruction Facility (PB BDF) construction is currently approximately 50 percent complete. Minor construction and site modifications are expected to be completed concurrently with process equipment installation and checkout in the second quarter of FY 2005. The PB BDF is scheduled to begin binary destruction operations in the first quarter of FY 2006.

Destruction of Former Chemical Weapons Production Facilities

Activities at two CWC-declared FPFs during FY 2004 included:

- *Nerve Agent VX Production Facility, Newport Chemical Depot, Newport, Indiana.* Destruction of Step III of the nerve agent VX FPF continued during FY 2004. Activities included the draining and demolition of the settling basins, shipment of all wastes from the settling basins to a TSDF, the complete dismantling of agent and nitrogen piping from the pipe racks, and treaty destruction of the scrubber towers. Total destruction of the settling basins and scrubber towers is expected in FY 2005. The facility is scheduled to be completely destroyed by the third quarter of FY 2007.
- *Integrated Binary Production Facility, Pine Bluff Arsenal, Pine Bluff, Arkansas.* Destruction of the IBPF began in the first quarter of FY 2004. All specialized and standard equipment in the DF and QL areas has been destroyed in accordance with the standards of the CWC and removed from the site. Destruction

¹ DF is the military symbol for methylphosphonic difluoride, the critical binary precursor of the nerve agent in what would have been the GB₂ binary munition (the M687 binary projectile). QL is the military symbol for an organophosphorus ester, the critical binary precursor to form nerve agent in what would have been the VX₂ binary munition (the Big Eye bomb).

operations for the DF facility began on August 3, 2004, and continues to progress on schedule. Total facility destruction is expected in the third quarter of FY 2007.

Miscellaneous Chemical Warfare Materiel Disposal

Activities during FY 2004 to destroy miscellaneous CWM, which includes empty TCs, Category 3 CWM, and chemical samples, included:

- *Edgewood Area of Aberdeen Proving Ground, Maryland.* TC destruction operations at APG-EA, Maryland, began on April 21, 2004. To date, 415 5X-decontaminated TCs have been processed, relocated, cut, cleaned, and sampled. Of the 415 TCs, 82 have been shipped to Rock Island Arsenal (RIA), Illinois, for smelting and recycling. Cutting and cleaning operations will continue until all 752 TCs have been processed and shipped to RIA. Project completion is expected in FY 2005.

Disposal of chemical samples, which are bottles of chemical agent that the U.S. Army used for training, began in September 2000 at APG-EA, Maryland, and will continue through FY 2006. During FY 2004, destruction of approximately 58 pounds of tabun (GA) chemical samples began at the CTF. As of September 30, 2004, approximately 37.7 pounds (65 percent) of chemical agent GA have been destroyed.

- *Pine Bluff Arsenal, Pine Bluff, Arkansas.* In preparation for the start of TC decontamination, PMNSCM researched alternative rinse solutions for the trace amount of lewisite in sludge contained in several empty TCs. Three decontamination solutions were identified and proposed to deal with the lewisite residue; sodium permanganate was selected as the best solution. PBA began field testing the sodium permanganate rinse solution on August 9, 2004. Updates to the laboratory and monitoring procedures have been completed and baseline data are being gathered in preparation for the start of operations. On November 20, 2003, PBA began processing CNB (riot control agent compound) TCs. To date, 28 CNB TCs have been processed and shipped to APG-EA for cutting and cleaning operations.
- *Umatilla Chemical Depot (UMCD), Oregon.* Forty-three M441 shipping and firing tubes, 5 M60 training rockets, and 1 dummy rocket motor were discovered in an existing igloo at UMCD on July 22, 2003. The M441 shipping and firing tubes were declared as Category 3 chemical weapons and subsequently destroyed on May 7, 2004. These were the first Category 3 chemical weapons discovered and declared after the destruction deadline for initially declared Category 3 chemical weapons passed in April 2002. PMNSCM had previously met that deadline on March 5, 2002. All known Category 3 chemical materiel has been destroyed.
- *Chemical Samples Stored at Other Locations.* Pending issuance and/or modification of applicable environmental permits, disposal of chemical samples is scheduled to occur from FY 2004 through FY 2009 in the chemical stockpile disposal facilities at the following sites: Anniston, Alabama; Blue Grass,

Kentucky; Pine Bluff, Arkansas; Pueblo, Colorado; Tooele, Utah; and Umatilla, Oregon.

Technology Test Program

The "Partnering with Industry" approach (to establish a partnership with one or more TSDFs to transport and dispose of secondary wastes using non-incineration-based treatment technologies) continues with the site selection process. The re-solicitation for the TSDF contract was sent out on August 2, 2004, to 10 facilities. Responses were received on September 24, 2004.

Technologies that continue to be tested and evaluated include persulfate oxidation and wet air oxidation. In addition, PMNSCM is working on the development of the process chemistry for arsenicals contained in German Traktor rockets. Lastly, phase 1 testing of neutron-induced gamma spectroscopy was completed on June 25, 2004; additional testing began in July 2004.

PMNSCM continued to investigate a continuous DAAMS confirmation device. The device, when coupled to a near real-time (NRT) monitor, collects a sample concurrently with the NRT monitor. If the NRT monitor does not alarm, the DAAMS sample tube packing material is conditioned and a new sample is collected. Testing indicated the system was capable of passing a qualitative precision and accuracy testing protocol but did not succeed when tested against a quantitative protocol.

Environmental Compliance

The following table provides the status of environmental compliance documentation for PMNSCM activities.

Activity	Environmental Compliance Status
NSCMP	The final NSCMP Programmatic EIS for transportable treatment systems was released in April 2001. The ROD was signed in June 2002.
Multiple EDS at PBA, Arkansas	An environmental assessment was completed in June 2004. A draft FONSI was published in August 2004. The final FONSI is scheduled for completion in the first quarter of FY 2005. RCRA and CAA permits are expected to be issued during FY 2005.
EDS support for PBMAS operations at PBA, Arkansas	RCRA and Clean Air Act permits are expected to be issued for EDS deployment at Pine Bluff during the third quarter of FY 2005. An environmental assessment was completed in December 2002, and a FONSI was completed in May 2003.
Binary at PBA, Arkansas	The CAA permit was issued in January 2004. There will be no RCRA permit prepared for Binary operations at PBA. An environmental assessment was completed in June 2003. The FONSI was completed in January 2004.
Empty Ton Container Decontamination and Recycling Operation at PBA, Arkansas	An environmental assessment and FONSI were completed in December 1999.

All other necessary permit requirements have been met and maintained and entailed no action during fiscal year 2004.

Public Outreach

During FY 2004, the CMA PAO supported the start of operations at the PBMAS and public meetings to discuss the RCRA permit for the PBEDS. In December 2003, PAO assisted the PMNSCM in recognizing the achievement of the 80 percent completion for dismantling of FPFs, an accomplishment that was achieved 16 months in advance of the CWC April 2005 deadline. In May 2004, CMA PAO conducted a ribbon-cutting ceremony for the Munitions Assessment and Processing System (MAPS).¹

PAO continued to identify ways to keep the public involved with and informed of NSCMP activities, distributing more than 5,000 copies of the NSCMP semi-annual newsletter to interested parties throughout the nation; updating contents at NSCMP information repositories in 39 states and the District of Columbia; making current NSCMP information available online via the CMA Web site; and holding two meetings with the Non-Stockpile Core Group, a panel of government officials and representatives from local communities and national environmental groups that provides comments to NSCMP on important components of the program. PAO held NSCMP open houses showcasing the mobile treatment assessment systems in Tooele, Utah, and Dover, Delaware, and hosted exhibits at four major meetings and conferences.

Communications industry professionals honored NSCMP with seven awards for the outstanding quality and effectiveness of its stakeholder information products and tactics. These included awards for a series of program brochures, a conference exhibit and press kits used in media relations.

Program Reviews

At the request of the U.S. Army, the NRC reviewed the design for the Pine Bluff Non-Stockpile Facility (PBNSF) intended to dispose of approximately 1,200 recovered chemical munitions currently in storage at PBA, Arkansas. In its report entitled *Assessment of the Army Plan for the Pine Bluff Non-Stockpile Facility*, the NRC noted that because destruction of these munitions is subject to CWC destruction deadlines, little schedule flexibility was available for finalizing design, construction, and testing of the PBNSF. The report proposed an alternative solution that encompasses the use of multiple units of the EDS that has already been approved for operations and successfully destroyed recovered munitions at several sites around the United States. Implementing this proposed alternative would lower costs and enhance safety. In response to this report, PMNSCM completed an analysis of alternatives that resulted in selection of the multiple EDS project as the preferred method of disposing of the Pine Bluff recovered chemical munitions.

¹ MAPS is a fixed facility augmenting existing chemical disposal facilities at APG-EA, Maryland.

Incidents

During FY 2004, one Category II chemical event (defined in accordance with Army Regulation 50-6, Chemical Surety) occurred during NSCM operations.

a. MINICAMS[®] Alarm in Vapor Containment Structure During EDS Operations. On June 8, 2004, during cleanout operations of the EDS at APG-EA J-Field, MINICAMS[®] inside the vapor containment structure alarmed for mustard agent at 7.6 TWA. Operators were dressed in protective gear and continued cleanout operations. Alarms ceased after two additional 5-minute MINICAMS[®] cycles. The operation was completed without further alarms. The personnel performing the cleanout did not exhibit symptoms of chemical agent exposure. No agent was released to the environment.

APPENDIX A
ABBREVIATIONS AND SYMBOLS

APPENDIX A ABBREVIATIONS AND SYMBOLS

ABCDF	Aberdeen Chemical Agent Disposal Facility
ACWA	Assembled Chemical Weapons Alternatives
AEL	airborne exposure limit
AFB	Air Force Base
ANCA	Anniston Chemical Activity
ANCDF	Anniston Chemical Agent Disposal Facility
APG-EA	Edgewood Area of Aberdeen Proving Ground
ATAP	Alternative Technologies and Approaches Project
ATB	agent trial burn
BGCA	Blue Grass Chemical Activity
BGCAPP	Blue Grass Chemical Agent-Destruction Pilot Plant
CAA	Clean Air Act
CAC	Citizens' Advisory Commission
CAIS	chemical agent identification set
CAMD, A	Chemical Agent Munitions Destruction, Army [account]
CAMDS	Chemical Agent Munitions Disposal System
CDC	Centers for Disease Control and Prevention
CDP	Chemical Demilitarization Program
CMA	U.S. Army Chemical Materials Agency
CNB	military symbol for a riot control agent, which is a mixture of carbon tetrachloride and benzene
COE	U.S. Army Corps of Engineers
CS	military symbol for an irritant/lachrymatory agent, which is ortho-chlorobenzylidene malononitrile
CSDP	Chemical Stockpile Disposal Project
CSEPP	Chemical Stockpile Emergency Preparedness Program
CWA	Clean Water Act
CWC	Chemical Weapons Convention
CWM	chemical warfare materiel
CWWG	Chemical Weapons Working Group
CY	calendar year [January 1 through December 31]
D2-Puff	dispersion model for predicting downwind hazard distances
DAAMS	depot area air monitoring system
DCD	Deseret Chemical Depot
DF	military symbol for the critical binary precursor for GB ₂ , which is methylphosphonic difluoride
DFS	deactivation furnace system
DHS-FEMA	Department of Homeland Security Federal Emergency Management Agency
DoD	Department of Defense
ECA	Edgewood Chemical Activity

EDS	Explosive Destruction System
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency
EQC	Environmental Quality Commission
FONSI	Finding of No Significant Impact
FPF	former [chemical weapons] production facility
FY	Fiscal Year [October 1 through September 30]
GAO	General Accounting Office
GB	military symbol for the nonpersistent nerve agent sarin
GB ₂	military symbol for the nonpersistent nerve agent sarin formed from the binary munition
IBPF	Integrated Binary Production Facility [Pine Bluff Arsenal, Arkansas]
IHF	Interim Holding Facility
ISO 14001	International Organization for Standardization's standard for environmental management systems
JACADS	Johnston Atoll Chemical Agent Disposal System
JIC	Joint Information Center
K951	military model number for a chemical agent identification set containing ampules of mustard agent, lewisite, chloropicrin, and phosgene
LIC	Liquid Incinerator
M20	military model number for DF canister portion of the binary nerve agent GB ₂ projectile, M687
M441	military model number for fiberglass shipping/firing tube
M55	military model number for nerve agent GB or VX 115-millimeter rocket
M60	military model number for simulant-filled 115-millimeter rocket
M69	military model number for 2.7 kilogram incendiary bomblet
M74	military model number for 4.5 kg incendiary bomb
MAPS	Munitions Assessment and Processing System
MPF	Metal Parts Furnace
NECD	Newport Chemical Depot
NECDF	Newport Chemical Agent Disposal Facility
NEPA	National Environmental Policy Act
NRT	near real-time
NSCM	non-stockpile chemical materiel
NSCMP	Non-Stockpile Chemical Materiel Project
ODEQ	Oregon Department of Environmental Quality
O&M	operation and maintenance
OPCW	Organisation for the Prohibition of Chemical Weapons
OSD	Office of the Secretary of Defense

PAO	Public Affairs Office
PBA	Pine Bluff Arsenal
PBCDF	Pine Bluff Chemical Agent Disposal Facility
PBNSF	Pine Bluff Non-Stockpile Facility
PCAPP	Pueblo Chemical Agent-Destruction Pilot Plant
PCBs	polychlorinated biphenyls
PCD	Pueblo Chemical Depot
PFS	pollution abatement filter system
PL	Public Law
PM ACWA	Program Manager for Assembled Chemical Weapons Alternatives
PMCSDF	Project Manager for Chemical Stockpile Disposal
PMNSCM	Project Manager for Non-Stockpile Chemical Materiel
QL	military symbol for the critical binary precursor for VX ₂ , which is an organophosphorus ester
RCRA	Resource Conservation and Recovery Act
RD&D	research, development, and demonstration
RDT&E	research, development, test, and evaluation
REC	record of environmental consideration
ROD	record of decision
SC	Systems Contractor
SCANS	Single CAIS Assessment and Neutralization System
SFRX	Service Response Force Exercise
SPEIS	Supplemental Programmatic Environmental Impact Statement
STB	surrogate trial burn
TCC	ton container cleanout
TOCDF	Tooele Chemical Agent Disposal Facility
TSCA	Toxic Substances Control Act
TSDF	treatment, storage, and disposal facility
UMCD	Umatilla Chemical Depot
UMCSDF	Umatilla Chemical Agent Disposal Facility
U.S.	United States
VX	military symbol for a persistent nerve agent, which is o-ethyl S-(2-diisopropylaminoethyl)methylphosphonothioate
VX ₂	military symbol for a persistent nerve agent VX formed from the binary munition
WDC	Washington Demilitarization Company

APPENDIX B
OCCURRENCES OF LEAKING CHEMICAL MUNITIONS

**APPENDIX B
OCCURRENCES OF LEAKING CHEMICAL MUNITIONS**

Fiscal Year	Leaker Occurrences by Type				Leaker Occurrences by State ^a									
	M55 Rockets ^b	SUPLECAM Samples ^c and Overpack Containers	All Other Munitions	TOTAL	AL	AR	CO	IN	JI	KY	MD	OR	UT	Other
2004	34	26	76	136 ^d	33	0	9	0	0	0	1	11	82	0
2003	15	7	25	47 ^d	15	0	1	0	0	2	0	8	21	0
2002	45	18	32	95 ^d	40	6	0	0	0	0	0	8	41	0
2001	58	35	187	280 ^d	58	0	1	0	2	5	0	8	206	0
2000	68	142	35	245 ^d	51	2	0	0	0	6	0	6	180	0
1999	72	69	222	363 ^d	65	1	0	0	0	7	0	4	286	0
1998	27	27	45	99 ^d	17	2	0	0	0	1	0	5	74	0
1997	61	11	46	118 ^d	62	0	12	0	1	2	0	6	35	0
1996	153	3	98	254 ^d	119	0	2	0	70	7	0	3	53	0
1995	107	11	17	135 ^d	66	0	0	0	0	1	0	13	55	0
1994	144	29	27	200	82	4	2	0	0	4	0	5	103	0
1993	82	3	37	122	37	1	1	0	2	13	0	7	61	0
1992	81	139	52	272	52	1	1	1	6	21	0	7	183	0
1991	68	3	42	113	28	3	0	0	5	6	0	8	63	0
1990	76	5	27	108	17	11	1	0	7	2	0	12	58	0
1989	131	9	44	184	19	5	3	0	12	7	0	14	124	0
1988	50	5	26	81	14	2	3	0	2	0	0	20	40	0
1987	44	22	45	111	41	3	0	0	8	3	0	6	50	0
1986	82	18	28	128	40	0	11	0	12	4	0	10	51	0
1985	204 ^e	4	27	235	41	0	0	0	4	15	0	8	167	0
1984	160 ^e	0	62	222	8	0	2	0	1	14	0	183	14	0
1983	14	0	52	66	6	0	1	0	6	26	0	4	23	0
1982	12	0	71	83	12	0	0	0	12	9	0	7	38	5
1981	55	0	478	533	54	1	4	0	10	16	0	8	427	13
1980 ^f	99	2	89	190	82	4	2	0	5	11	0	20	57	9
TOTAL	1,942	588	1,890	4420	1,059	46	56	1	165	182	1	391	2,492	27

Notes:

The inventory of leaking munitions continues to be reduced at sites with operating chemical disposal facilities.

- ^a AL Alabama (ANCA and ANCDF)
AR Arkansas (PBA)
CO Colorado (PUCD)
IN Indiana (NECD)
JI Johnston Island (includes the storage site and JACADS; mission completed in 2000)
KY Kentucky (BGAD)
MD Maryland (APG-EA and ABCDF)
OR Oregon (UMCD and UMCDF)
UT Utah (DCD, Dugway Proving Ground, and TOCDF)
Other Germany (munitions from German retrograde program that were transferred to Johnston Island in December 1990)
- ^b Includes GB and VX rockets and rocket warheads.
- ^c Surveillance Program, Lethal Chemical Agents and Munitions (SUPLECAM) (leakers from drilled and tapped holes in munitions used for chemical agent sampling).
- ^d Some leaking munitions were detected during disassembly at the CDFs prior to their destruction, rather than at the storage area (5 in 1995, 64 in 1996, 11 in 1997, 102 in 1998, 161 in 1999, 24 in 2000, 168 in 2001, 6 in 2002, 16 in 2003 and 45 in 2004). All leaks detected during these operations were under engineering controls.
- ^e A large number of M55 rockets were inspected in 1984 and 1985. Quarterly storage monitoring inspections of nerve agent GB M55 rockets were conducted thereafter.
- ^f Specific totals for years prior to FY 1980 are not included, as early records are incomplete and any total incorporating these time frames cannot be considered accurate.

APPENDIX C
PROGRAM DISBURSEMENTS SUMMARY

Appendix C
U.S. Army Chemical Demilitarization Program
FY 2004 Disbursements Summary (\$ in thousands)
(includes FY 2004 and prior year funds)

Project/Facility	Chemical Agents and Munitions Destruction, Army				Military Construction
	RDT&E	PROC	O&M	Total	Total
Program Management (CMA)	0	0	21,593	21,593	0
Program Management (PMCSA)	0	8,030	41,453	49,483	0
Chemical Demilitarization Training Facility	0	403	4,410	4,813	0
CAMDS (Operations)	0	29	25,114	25,143	0
JACADS (Closure)	0	314	35,532	35,846	0
TOCDF (Operations)	0	2,032	143,007	145,039	0
ANCDF (Operations)	0	1,254	114,075	115,329	251
UMCDF (Systemization/Operation)	0	5,231	132,926	138,157	207
PBCDF (Systemization)	0	25,083	115,694	140,777	7,508
ATAP Program Management	1,549	0	5,301	6,850	0
ABCDF (Operations)	8,968	0	87,875	96,843	1,096
NECDF (Construction/Systemization)	37,604	0	72,112	109,716	12,385
Non-Stockpile Chemical Materiel	42,271	3,865	116,251	162,387	3,921
ACWA Program Management	19,519	0	0	19,519	0
PCAPP (Design)	72,648	0	0	72,648	35,331
BGCAPP (Design)	30,567	0	0	30,567	18,540
Chemical Stockpile Emergency Preparedness	1,262	15,718	93,656	110,636	0
TOTAL	214,388	61,959	1,008,999	1,285,346	79,239