



# **Assembled Chemical Weapons Assessment Program**

## **Annual Report to Congress**

**December 1997**

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## **A Message From Michael A. Parker, Program Manager**

Meaningful stakeholder involvement has been, and will continue to be, the cornerstone of this program. It has been my belief, now validated by experience, that establishing and promoting a cooperative working relationship and understanding between a broad spectrum of stakeholders can and will yield positive results. Rather than giving up authority, I have found that involving the public in the decision making process is a powerful tool for increasing the authority and legitimacy of the ultimate decisions. This program has involved various stakeholders up front and throughout the process. This public involvement process has evolved to the Dialogue on Assembled Chemical Weapons Assessment. Early on, a set of ground rules was established and agreed upon allowing everyone involved to work towards and successfully establish a set of technology assessment criteria. Establishing assessment criteria for the first phase of this program proved not to be an agonizing exercise but a methodical process by which everyone (including potential technology providers) worked toward consensus. The final product agreed upon by all during our Dialogue meeting in Baltimore continues to be the backbone of this highly technical program. The consensus process, rather than yielding to the lowest common denominator of the stakeholders actually has allowed us to focus on technical viability of alternatives as the priority. Operating in a fully open manner based on trust and complete information has allowed an environment where parochial agendas were put aside in favor of the more critical factors.

The task of identifying and demonstrating alternative technologies is not only challenging technically, but also is challenging logistically when attempting to include stakeholders in the full range of activities being conducted by the Program to include the procurement process. By utilizing innovative methods, both DoD and the Dialogue worked hard to establish a means by which the Dialogue could be fully involved. Dialogue participants established a Citizens' Advisory Technical Team (CATT) consisting of four Dialogue participants and an independent contractor with technical expertise to act as a liaison between the PMACWA technical team and the full Dialogue membership. The technical contractor provides the necessary technical support to both the CATT and the full Dialogue. All CATT participants signed appropriate confidentiality and other agreements to make this happen.

The Dialogue has appropriately taken a longer term view than I have as PMACWA. As PMACWA, I have a clear mandate from Congress to "identify and demonstrate" not less than two alternative technologies and prepare a report for the Under Secretary of Defense for Acquisition and Technology to provide to Congress. A decision on deployment, a clear Dialogue goal, is beyond the scope of my charter and rests with the Office of the Secretary of Defense leadership and ultimately the Congress.

To date, we have been successful in developing a solid process by which everyone involved understands the roles, responsibilities, and limitations associated with identifying and demonstrating new alternative technologies. The first phase, creating a three-tiered

assessment criteria has been accomplished. The assessment criteria will continue to serve us as we turn the corner from the assessment phase into the demonstration phase. I have a very high degree of confidence that this program will be able to successfully demonstrate multiple technology options.

Michael A. Parker  
Program Manager

## A Message from the Dialogue on Assembled Chemical Weapons Assessment

The Dialogue on Assembled Chemical Weapons Assessment was formed in an effort to effectively address the charge of Public Law 104-201 and Public Law 104-208 to demonstrate not less than two alternatives to the baseline incineration process. DoD and others interested in this issue stated the need to integrate the input of communities, regulators, and other concerned parties into the process of developing criteria and assessing alternative technologies so that decisions are technically sound and publicly acceptable. DoD and a diversity of other perspectives asked the Keystone Center, a neutral facilitator specializing in environmental and health policy issues, to design a meaningful process for stakeholder involvement. The Keystone Center convened a wide array of perspectives, including:

- representatives from the nine affected communities;
- state regulators and tribal representation;
- Environmental Protection Agency (EPA) staff;
- Department of Defense staff from affected sites and headquarters; and
- representatives from national citizen groups that regularly work on this issue.

Many Dialogue participants volunteer their time, and all have committed a tremendous amount of personal resources to this effort.

As a Dialogue, we understand the complex political, social, economic, environmental and technical issues involved in ridding the nation of stockpiled assembled chemical weapons. Most of us have been involved in chemical demilitarization issues for a number of years and we are familiar with the local and national context of chemical demilitarization. We applaud the hallmark nature and design of a collaborative process that values a diversity of perspectives at the onset and throughout the life of the program. We believe this model worthy of consideration for other technically and politically complex DoD efforts with a history of controversy.

The unique nature of this process has enabled us to successfully work toward the Dialogue's goal to:

*proactively work to identify, demonstrate, and ultimately deploy safe, effective, and broadly acceptable methods for disposing of chemical weapons.*

We believe the up-front collaborative problem-solving approach to identify and address programmatic concerns will:

- produce durable agreements supported by a diversity of perspectives;

- enable the Department of Defense to meet the ACWA Program and Chemical Weapons Convention (CWC) deadlines; and,
- minimize total program costs by addressing technical, political, and social concerns early in the process.

The Dialogue on Assembled Chemical Weapons Assessment recognizes that destroying the nation's stockpile of assembled chemical weapons is challenging. The Dialogue is encouraged by the seven technologies which have passed the Threshold Criteria and, until the completion of the ACWA technology demonstrations, remains cautiously optimistic regarding the viability of alternative technologies.

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Pine Bluff for Safe Disposal

## **EXECUTIVE SUMMARY**

### **Background**

This annual report is submitted to the United States (U.S.) Congress in compliance with requirements contained in Section 142 of the National Defense Authorization Act for Fiscal Year (FY) 1997 (Public Law 104-201) and Title VIII, Section 8065 of the Department of Defense Appropriations Act, 1997 (Public Law 104-208). This report presents the status of activities associated with the Department of Defense (DoD) Assembled Chemical Weapons Assessment (ACWA) Program accomplished during FY 1997 and significant activities projected for FY 1998.

Identifying and demonstrating alternative technologies to destroy assembled chemical weapons is a technically complex undertaking. However, true success and acceptance cannot be attained without total participation by the public ultimately affected by this effort. Public participation has been and will continue to be a significant part of this program. To that end, this report was developed with assistance from the ACWA Dialogue participants.

In accordance with Public Law 104-208, the Under Secretary of Defense for Acquisition and Technology appointed Mr. Michael A. Parker the Program Manager for Assembled Chemical Weapons Assessment (PMACWA) with the mission to demonstrate not less than two alternative technologies to the baseline incineration process for the demilitarization of assembled chemical weapons. Assembled chemical weapons for this purpose represent the chemical weapons stockpile configured with fuzes, explosives, propellant, chemical agents, shipping and firing tubes, and packaging materials.

The Program involves a three phased approach – evaluation criteria development, technology assessment, and demonstration of not less than two technologies. The PMACWA established four teams (Technical Team, Environmental Team, Business Team, and Public Outreach Team) to accomplish the mission of the program. The Technical Team's objective is to conduct a detailed assessment of proposed technologies using the integrated criteria developed in conjunction with stakeholders. The Environmental Team is charged with (1) identifying the environmental regulatory requirements with which the program must comply as it develops demonstration test plans and (2) analyzing the impact that compliance with these regulatory requirements will have on the test demonstration schedules. The Business Team handles all procurement activities and provides legal services to the program. The Public Outreach Team's goal is to provide the necessary tools and information to support the program in effectively communicating with the public and interested parties.

### **Dialogue on ACWA**

In response to the desire to integrate stakeholder input, The Keystone Center, a non-profit, neutral facilitation organization specializing in environmental and health policy issues, was asked by a diversity of individuals from DoD and community organizations to convene the Dialogue on Assembled Chemical Weapon Assessment and to facilitate Dialogue meetings. The Dialogue will continue to collaborate with the DoD to best position the ACWA Program to meet its objectives

and any follow-on mandates regarding the safe and responsible disposal of chemical weapons stockpiles.

Participants of the Dialogue on ACWA include representatives from affected communities, appropriate state and/or tribal representation, relevant Environmental Protection Agency (EPA) staff, appropriate DoD staff from affected sites and headquarters, representatives from national citizen groups that work regularly on this issue, and other concerned entities. Some Dialogue participants noted the need for independent technical assistance to advise them throughout the program; therefore, the PMACWA agreed to fund the Citizens' Advisory Technical Team (CATT). The CATT works on behalf of Dialogue participants and is charged with overseeing, consulting, and reporting duties regarding complex and technical information during the program.

### **Program Status and Proposed Activities**

The evaluation criteria development phase took place during the months of May, June, and July 1997. There were three meetings of the Dialogue on Assembled Chemical Weapons Assessment, two technical workshops, a Pre-Solicitation Conference for industry, and a meeting of the CATT liaison group.

During the evaluation criteria development phase of the program, the following items were accomplished:

- The Dialogue on Assembled Chemical Weapons Assessment was established and ground rules were developed.
- Program Evaluation Criteria were developed consisting of the Threshold (Go/No Go) Criteria, Demonstration Selection Criteria, and Implementation Evaluation Criteria.
- The CATT was established.
- The Request for Proposal (RFP) was issued on July 28, 1997.
- The Broad Agency Announcement (BAA) was issued on August 27, 1997. For more information on the BAA, see paragraph II.3.b.

The technology assessment phase of the program is currently under way and consists of four steps: (1) Go/No Go Evaluation, (2) Initial Assessment/Data Gap Resolution, (3) Final Assessment/Technology Ranking, and (4) Demonstration Work Plan Development/Review. Within the assessment phase, the following items have been accomplished:

- Contracts were awarded to seven companies that met the threshold (Go/No Go) criteria (step 1).
- Data gaps were identified and \$50,000 was awarded to each of the seven companies to prepare Data Gap Resolution Work Plans (step 2).

In fiscal year 1998, the Technical Team will complete steps 3 and 4 of the Assessment Phase and will begin the Demonstration Phase of the program. In step 3, Final Assessment/Technology Ranking, the Evaluation Team will perform a final assessment of each technology using the Data

Gap Resolution Report (to be completed in approximately February 1998) and the original proposal. The Evaluation Team will then rank each technology against the Demonstration Criteria and recommend which technologies should go to demonstration. The contractors recommended for demonstration will receive \$50,000 to prepare a Demonstration Work Plan.

In step 4, Demonstration Work Plan Development/Review, the Demonstration Work Plans will be evaluated against the full Demonstration Selection Criteria (Process Efficacy, Human Health and Environment, Safety and Business Factors). The contractors, whose Demonstration Work Plans are selected for final demonstration, will receive contracts to fully fund the demonstration testing.

During the Demonstration Phase of the program, the PMACWA in consultation with the Dialogue will oversee and validate the selected contractors' demonstration test program and data. An evaluation of the results of the demonstration testing will be provided to the Under Secretary of Defense for Acquisition and Technology and then to Congress. The recommendations will indicate (1) those technologies that should be considered for implementation and (2) any additional work that is needed prior to full-scale implementation. The preliminary results of the Demonstrations and associated implementation rankings will be included in the December 1998 Report to Congress while the final results will be provided in a Supplemental Report to Congress along with the National Research Council (NRC) report in April 1999.

### **National Research Council**

As required by Public Law 104-201, Section 142, the assessment of alternative technologies is being "conducted in coordination with the National Research Council (NRC)." Specifically, the NRC is performing an independent review and evaluation of the technologies that passed the PMACWA threshold (Go/No Go) criteria. The principal anticipated result of the NRC study will be a report evaluating the current status of each technology which passed the threshold criteria (including advantages, disadvantages, knowns, unknowns, and potential for implementation).

## **I. INTRODUCTION**

### **A. General**

This annual report is submitted to the United States (U.S.) Congress in compliance with requirements contained in Section 142 of the National Defense Authorization Act for Fiscal Year 1997 (Public Law 104-201) and Title VIII, Section 8065 of the Department of Defense Appropriations Act, 1997 (Public Law 104-208).

Public Law 104-201 establishes the requirement for an assessment of alternative technologies for demilitarization of assembled munitions. This assessment is limited to those that would minimize the risk to the public and reduce the total cost of the chemical agents and munitions destruction program while ensuring maximum protection for the general public, the personnel involved in the demilitarization program, and the environment. Additional requirements for this program include:

- The assessment must be conducted in coordination with the National Research Council (NRC).
- Based on the results of the assessment, appropriate recommendations must be made for revision of the chemical demilitarization program.
- The assessment shall be conducted without regard to any limitation that would otherwise apply to the conduct of such assessment.
- A report must be submitted by December 31, 1997 to Congress on the assessment conducted and any recommendations for revision of the chemical demilitarization program.

Public Law 104-208 provides funding to identify and demonstrate not less than two alternatives to the baseline incineration process for the demilitarization of assembled chemical munitions. Specific requirements to be accomplished by the Under Secretary of Defense for Acquisition and Technology are as follows:

- Designate a program manager who is not, nor has been, in direct or immediate control of the baseline reverse assembly incineration demilitarization program to carry out the program.
- Evaluate the effectiveness of each alternative chemical munitions demilitarization technology identified and demonstrated under this program to demilitarize assembled chemical munitions while meeting all applicable federal and state environmental and safety requirements.

- Transmit, by December 15 of each year, a report to the congressional defense committees on the activities carried out under this program during the preceding fiscal year in which the report is to be made.

## **B. Scope of Report**

This report presents the status of activities associated with the Department of Defense (DoD) Assembled Chemical Weapons Assessment (ACWA) Program. This report addresses activities accomplished during fiscal year (FY) 1997 and significant activities projected for FY 1998.

## **II. PROGRAM STATUS AND PROPOSED ACTIVITIES**

### **A. Assembled Chemical Weapons Assessment Program**

In accordance with Public Law 104-208, the Under Secretary of Defense for Acquisition and Technology appointed Mr. Michael A. Parker the Program Manager for Assembled Chemical Weapons Assessment (PMACWA) with the mission to demonstrate not less than two alternate technologies to the baseline incineration process for the demilitarization of assembled chemical weapons. Assembled chemical weapons for this purpose represent the chemical weapons stockpile configured with fuzes, explosives, propellant, chemical agents, shipping and firing tubes, and packaging materials.

The ACWA Program involves a three phased approach – evaluation criteria development, technology assessment, and demonstration of not less than two technologies. The PMACWA established four teams (Technical Team, Environmental Team, Business Team, Public Outreach Team) to accomplish the mission of the program. The Technical Team's objective is to conduct a detailed assessment of proposed technologies using the integrated criteria developed in conjunction with stakeholders. The Environmental Team is charged with (1) identifying the environmental regulatory requirements with which the program must comply as it develops demonstration test plans and (2) analyzing the impact that compliance with these regulatory requirements will have on the test demonstration schedules. The Business Team handles all procurement activities and provides legal services to the program. The Public Outreach Team's goal is to provide the necessary tools and information to support the program in effectively communicating with the public and interested parties.

The foundation of the ACWA program is based on stakeholder involvement from each of the chemical stockpile storage sites and identification of their concerns about the program. In response to the desire to integrate stakeholder input, The Keystone Center, a non-profit, neutral facilitation organization specializing in environmental and health policy issues, was asked by a diversity of individuals from DoD and community organizations to convene a Dialogue on Assembled Chemical Weapons Assessment and to facilitate Dialogue meetings.

Participants of the Dialogue on ACWA include representatives from affected communities, appropriate state and/or tribal representation, relevant Environmental Protection Agency (EPA) staff, appropriate Department of Defense staff from affected sites and headquarters, representatives from national citizen groups that work regularly on this issue, and other concerned entities. Some Dialogue participants noted the need for independent technical assistance to advise them throughout the program, therefore the PMACWA agreed to fund the Citizens' Advisory Technical Team (CATT). The CATT works on behalf of Dialogue participants and is charged with overseeing, consulting, and reporting duties regarding complex and technical information during the program.

## **1. Technical Team**

### **a. Goals and Objectives**

The Technical Team has three goals and objectives:

- Develop sound technical criteria (Program Evaluation Criteria) in conjunction with the ACWA Dialogue to thoroughly assess proposed technologies.
- Conduct a detailed assessment of proposed technologies using the Program Evaluation Criteria.
- Recommend which technologies (at least two) should be demonstrated.

The following sections describe the process that has been implemented to address each of these objectives.

### **b. Evaluation Criteria Development**

During the criteria development phase (Phase 1), the Program Evaluation Criteria were developed by the PMACWA in concert with the Dialogue on Assembled Chemical Weapons Assessment. The criteria development phase took place during the months of May, June, and July 1997. Its objective was to develop a detailed set of criteria against which industry-proposed technologies will be assessed. The criteria were divided into three general groupings: Threshold (Go/No Go) Criteria - the minimum threshold criteria any proposed technology must meet to be considered in the program; Demonstration Selection Criteria - the criteria by which PMACWA will select technologies for demonstration; and finally Implementation Evaluation Criteria - the criteria that represent the basis for the recommendations that will be made in the 1998 Report to Congress. The evaluation criteria are summarized in Appendix A.

The criteria development phase consisted of three meetings of the Dialogue on Assembled Chemical Weapons Assessment, two technical workshops, a Pre-Solicitation Conference for industry, and a meeting of the CATT liaison group.

The PMACWA sponsored a two-day Criteria Development Workshop on May 13-14, 1997. During this technical workshop, the team developed a first draft of "Go/No Go" criteria and

evaluation criteria, as well as definitions and scoring factors that will be used in the assessment of technologies. These draft criteria were provided to the Dialogue on Assembled Chemical Weapons Assessment for their initial meeting May 29-31, 1997, in Colorado Springs, CO.

The three-day Colorado Springs meeting accomplished the following:

- Ground rules were established and agreed upon.
- Draft Go/No Go Criteria were agreed upon.
- PMACWA agreed to publish a Broad Agency Announcement (BAA) addressing partial solutions to chemical munitions disposal.
- PMACWA agreed to share the National Research Council's Statement of Work with the Dialogue and solicit their comments.

The PMACWA held another Criteria Development Workshop on June 4-5, 1997, to incorporate comments from the Dialogue meeting held in Colorado Springs, CO; further refine the threshold Go/No Go criteria; and continue the development of the detailed evaluation criteria. The meeting resulted in the final threshold "Go/No Go" criteria that were published in the Commerce Business Daily on June 9, 1997.

The second meeting of the Dialogue was held on June 16-17, 1997, in Lexington, KY. During this meeting, the following items were accomplished:

- Discussed outreach efforts being employed.
- Refined June 17, 1997 Draft Evaluation Criteria.
- Developed action plan for the selection of the CATT.
- Obtained DoD agreement to support an independent technical team for the Dialogue.
- Decided on using the Internet as the primary means of communication for Dialogue materials and for communication between Dialogue participants, to the extent feasible.

Approximately 150 representatives from firms interested in the ACWA Program attended a PMACWA Pre-Solicitation Conference for industry on June 25-27, 1997, at the Edgewood Area of Aberdeen Proving Ground (APG-EA). The PMACWA staff presented the program objectives and procurement milestones and opened the session to questions and comments. A tour of the Chemical Demilitarization Training Facility was given to interested attendees, with a focus on the reverse assembly process which will be available to firms for incorporation into their total solution proposal. Representatives from the Dialogue presented an overview of the Dialogue process and their role in technology selection. In keeping with DoD's goal of a total solution to the disposal problem, teaming among firms was highly encouraged. Industry representatives were invited to make 20-minute presentations to the conference outlining their technologies, in the hope of facilitating teaming arrangements.

The third meeting of the Dialogue was held June 30-July 2, 1997, in Baltimore, MD. This meeting was held to further refine the evaluation criteria. At the meeting, the following items were accomplished:

- The Dialogue group agreed to the Program Evaluation Criteria composed of the Threshold (Go/No Go) Criteria, Demonstration Selection Criteria, and the Implementation Evaluation Criteria.
- The Request for Proposal (RFP) release date was changed from July 14, 1997, to July 28, 1997.
- A Broad Agency Announcement (BAA) publication date was established as August 11, 1997.
- The CATT Liaison Group was established.

The CATT Liaison Team met with the PMACWA technical team on July 21-22, 1997. During the meeting, the following items were accomplished:

- Program Evaluation Criteria were finalized for publication in the RFP.
- Scoring factor weights were established.
- The Draft RFP was reviewed.
- The role of CATT in the procurement process was defined.

The evaluation criteria development phase culminated with the publication of the Request for Proposal on July 28, 1997, with responses due no later than September 15, 1997.

### **c. Technology Assessment Process**

The technology assessment phase (Phase 2) of the program is currently under way and consists of four steps: (1) Go/No Go Evaluation, (2) Initial Assessment/Data Gap Resolution, (3) Final Assessment/Technology Ranking, and (4) Demonstration Work Plan Development/Review. In the first step, the proposals were evaluated against the Threshold (Go/No Go) criteria and overall responsiveness to the RFP. The proposals were evaluated by representatives of the Technical Team, Business Team, and CATT. As a result of this evaluation, task contracts were awarded to seven companies that met the Threshold (Go/No Go) Criteria and were responsive to the RFP. Descriptions of successful technologies are shown in Table 1. For a more detailed description of the entire acquisition process, see Appendix B.

In step 2 (Initial Assessment/Data Gap Resolution), the Program Evaluation Team assessed the selected candidate technologies using a subset of the Demonstration Selection Criteria (Process Efficacy, Human Health and Environment, and Safety) and prepared a list of data gaps (prioritized in order of importance) for each technology. The Evaluation Team consisted of representatives of the Technical Team, Business Team, and CATT. Based on this assessment, each task order contract awardee received a task order (\$50,000) to prepare a Data Gap Resolution Work Plan and subsequently fill the identified data gaps.

**Table 1: TECHNOLOGY DESCRIPTIONS FOR  
THE ASSEMBLED CHEMICAL WEAPONS ASSESSMENT PROGRAM**

<b>Offerer*</b>	<b>Munitions Access</b>	<b>Agent Treatment</b>	<b>Energetics Treatment</b>	<b>Metal Parts Treatment</b>	<b>Dunnage Treatment</b>
AEA Technology CH2M Hill	Modified reverse assembly (high-pressure wash, new rocket shearing)	Electrochemical oxidation using silver ions in nitric acid at 90°C (SILVER II)	Treated with SILVER II process	High-pressure acid wash, thermal treatment to 3X, shipped to Rock Island Arsenal (RIA)	Shredded and treated with SILVER II process
ARCTECH ICF Kaiser, Inc.	Reverse assembly	Hydrolysis with a-HAX (humic acid and strong base, KOH) at 90°C	Hydrolysis with dilute a- HAX at 80°	Hydrolysis with dilute a- HAX at 90°C	Hydrolysis with dilute a- HAX at 90°C, shipped to landfill. Metal parts to 10C for 5X
Burns and Roe Foster-Miller Startech	Minor modifications to reverse assembly	Plasma arc in inert argon	Plasma arc in inert argon	Plasma arc in inert argon	Shredded and processed in plasma arc
General Atomics	Modified reverse assembly, cryofracture	Hydrolysis with caustic, supercritical water oxidation (SCWO)	Hydrolysis with caustic, SCWO	Hydrolysis with caustic, thermal treatment to 5X	Shredded and destroyed in SCWO
Lockheed Martin SAIC Kvaerner John Brown Foster Wheeler Corporation Elf Eco Logic International El Dorado Engineering, Inc. Aerojet General Corporation Illinois Institute of Technology Research Institute	Modified reverse assembly (multiple lines, compact layout, new drain and wash)	Hydrolysis with caustic at 90°C, SCWO, Eco Logic gas phase chemical reduction (GPCR)	Hydrolysis with caustic, SCWO, GPCR	Washed in caustic, treated in thermal reactor to 5X, GPCR	Washed in caustic, treated in thermal reactor to 5X, GPCR
Allied Signal and Parsons	Modified reverse assembly (jet washout and cutting)	Hydrolysis with caustic at 90°C followed by biotreatment	Hydrolysis with caustic biotreatment	Thermal treatment to 5X	Thermal treatment to 5X
Teledyne Commodore Mason & Hanger Stone & Webster Southwest Research Institute University of Kentucky	Fluid Jet Cutting  Remove, initiate fuzes and capture residues in Solvated Electron Technology (SET)  Access and drain agent  Wash energetics out in ammonia	Solvated electron process using sodium metal and ammonia  Chemical oxidation destroys Schedule 2 products	Solvated electron process  Chemical oxidation destroys residual toxicity of product	Wash in SET followed by oxidation treats residues and heels to 3X  Shipped to RIA for government disposal	Crush or shred Charcoal, PPE, wood, fiberglass  Treat in SET, shipped to landfill  Destroys contamination on dunnage

\*Offerors listed above in alphabetical order propose to apply these technologies to all munitions.

**d. Proposed Activities - Fiscal Year 1998**

In fiscal year 1998, the Technical Team will complete steps 3 and 4, Final Assessment/Technology Ranking and Demonstration Work Plan Development/Review, of the Assessment Phase of the program and will begin the Demonstration Phase to demonstrate at least two candidate technologies. In step 3, the Program Evaluation Team will perform a final assessment (using a subset of the Demonstration Selection Criteria) of each technology using the Data Gap Resolution Report (to be completed in approximately February 1998) and the original proposal. The Evaluation Team will then rank each technology against the Demonstration Criteria and recommend which technologies should go to demonstration in the June 1998 time frame. The contractors recommended for demonstration will receive a \$50,000 contract to prepare a Demonstration Work Plan.

In step 4, the contractors will prepare a detailed Demonstration Work Plan that includes a technical/management approach for the demonstration testing, past performance, socioeconomic plan, demonstration schedule, and a cost proposal for the demonstration testing. The Program Evaluation Team will evaluate the Demonstration Work Plans against the full set of Demonstration Selection Criteria (Process Efficacy, Human Health, and Environment, Safety, and Business Factors). The contractor Demonstration Work Plans selected for demonstration will receive contracts to fully fund the demonstration testing. The number of contractors selected for demonstration testing is subject to the availability of both program funds and government-approved demonstration test facilities.

During the Demonstration Phase (Phase 3) of the program, the PMACWA in consultation with the Dialogue will oversee and validate the selected contractors' demonstration test program and data. An evaluation of the results of the demonstration testing will be provided to the Under Secretary of Defense for Acquisition and Technology and then to Congress. The recommendations will indicate (1) those technologies that should be considered for implementation and (2) any additional work that is needed prior to full-scale implementation. The preliminary results of the Demonstrations and associated implementation rankings will be included in the December 1998 Report to Congress while the final results will be provided in a Supplemental Report to Congress along with the National Research Council (NRC) report in April 1999.

**2. Environmental Team**

Public Law 104-201 and Public Law 104-208 provide no exclusions or exemptions from applicable environmental permitting and other requirements for Assembled Chemical Weapons Assessment demonstrations. Because these demonstrations will involve the testing of alternative baseline technologies with chemical warfare agents, a host of environmental regulations are potentially applicable to the conduct of the demonstrations envisioned as part of the ACWA program. State regulatory authorities where potential ACWA demonstrations may be held will have to review ACWA's demonstration test plans for compliance with the Resource Conservation and Recovery Act (RCRA) and other environmental statutes before ACWA can begin testing. ACWA

must also perform the prerequisite program planning, evaluation, and documentation work called for in the National Environmental Policy Act (NEPA) to evaluate whether proposed demonstration activities will have a significant impact on the environment. The demonstration of specific technologies or the use of specific testing regimes may also trigger specific environmental statutory or regulatory requirements on a case-by-case basis. This list includes federal and state regulations, executive orders, and tribal nation requirements.

**a. Objectives**

The PMACWA established the Environmental Team to:

- Identify the environmental regulatory requirements with which PMACWA must comply as it develops its demonstration test plans;
- Analyze the impact that compliance with these regulatory requirements will have on ACWA test demonstration schedules; and
- Recommend program management strategies to address those situations when compliance with specific environmental laws or regulations could extend ACWA demonstration activities beyond December 15, 1998, the PL 104-208 deadline when PMACWA is to deliver its final recommendations to Congress.

**b. Environmental Strategy Development**

The Environmental Team has assisted PMACWA in developing an environmental compliance strategy that addresses the enabling language and the statutory language that creates the ACWA program scope (PL 104-201 and PL 104-208). PMACWA's environmental compliance strategy is structured to assist ACWA conduct no less than two demonstrations of alternative technologies by December 1998 while, simultaneously, remaining compliant with all applicable Federal and state environmental and safety requirements. The formulation of such a strategy presents both a challenge and an opportunity. The challenge is to reconcile two competing interests: staying within the scope of an aggressive schedule that requires that all demonstrations be completed within two years while, simultaneously, fully complying with environmental laws that call for environmental studies and permits that sometimes take as long as two years to process. The opportunity is to develop an aggressive, focused, success-oriented demonstration schedule that serves as a pilot project for Federal and state programs facing similar issues.

The Environmental Team examined three sources of law that, in the context of implementing PL 104-201 and PL 104-208, may have a potential impact on ACWA's demonstration schedule:

- Chapter 32 of Title 50 United States Code (U.S.C.) (Sections 1511 through 1521) that detail statutory requirements affecting the U.S. Army Chemical and Biological Warfare Program, the command authority for the ACWA program;

- Environmental protection and safety statutes with a potential impact on ACWA demonstration activities; and
- Specific environmental statutory requirements that may be triggered on a case-by-case basis with ACWA's demonstration of specific alternative technologies or the use of specific testing regimes.

As a result of this analysis, the Environmental Team identified three concerns with potential impact on the ACWA demonstration schedule. They are: (1) Environmental permitting lead time; (2) Demonstration site selection; and, (3) Compliance with NEPA. Following the identification of these specific concerns, an effort was undertaken to discuss possible actions, time lines and alternatives with state and federal regulatory agencies, legal counsel and other members of the PMACWA team. By accounting for the diverse technical requirements, possible solutions, and overall program constraints and assumptions, an analysis to determine potential approaches was developed with corresponding advantages and disadvantages. The resulting action has the Environmental Team addressing each of these concerns through the development of program management strategies and compliance initiatives as shown in Table 2. The detailed rationale for each concern is at Appendix C.

**Table 2: ENVIRONMENTAL TEAM CONCERNS AND STRATEGY**

<i>CONCERN</i>	<i>STRATEGY</i>
The lead-time to process the requisite RCRA permits before ACWA can begin its technology demonstrations.	Use treatability studies, modified to provide for public notification and interaction, as the primary mechanism for accomplishing ACWA testing.
The selection of sites at which ACWA can conduct its demonstrations.	Use the US Army Chemical Agent Munitions Disposal System (CAMDS) Activity, Deseret Chemical Depot, Utah; West Desert Test Center, Dugway Proving Ground (DPG), Utah; and Edgewood Research Development and Engineering Center (ERDEC), Aberdeen Proving Ground (APG), Maryland, which have suitable facilities to conduct the ACWA demonstrations and meet statutory requirements.
Compliance with NEPA.	Prepare an Environmental Assessment (EA) to assess potential environmental impacts resulting from the ACWA demonstrations.

**c. Proposed Activities - Fiscal Year 1998**

The Environmental Team will continue to address each of the above concerns through the development of program management strategies and compliance initiatives. Specifically, the Environmental Team will:

- 1) Assist the Technical Team in developing test plans for RCRA treatability studies which are modified to provide technical flexibility for demonstration testing and address the need for public information and participation.
- 2) Provide advice to the Technical Team with regard to the selection of sites for demonstration testing considering munition and munition component transportation limitations.
- 3) Initiate the preparation of an Environmental Assessment (EA) for the demonstration program which complies with the requirements of the NEPA.

Due to the extremely aggressive schedule established for the ACWA demonstration program, the environmental compliance component of the effort will require intensive, focused efforts to ensure that required approvals are in place to initiate the testing program. This effort will require close coordination between PMACWA teams, regulatory officials, demonstration host facilities, technology providers and the Dialogue group. As a result of discussions with the Dialogue additional efforts will be focused to resolve the issues and concerns expressed by some members regarding the strategy of using treatability studies to accomplish ACWA demonstrations. Additional strategies may need to be developed and negotiated with state regulatory officials to meet program requirements.

The availability and prioritization of state regulatory resources for the timely review of ACWA documentation will also be a key factor in ensuring that schedule delays are not encountered. Negotiations with other DoD agencies, primarily the PMCD, may be required to avoid delays with state regulatory reviews caused by multiple projects from PMCD and PMACWA arriving for review and approval during the same period in early 1998. Funding for state regulatory reviews will also be identified and processed.

The Environmental Team will continually assess the applicability of other environmental laws and regulations as technology/site decisions are made for demonstrations. In addition to the three primary DoD facilities identified for possible chemical agent testing, other federal and/or commercial facilities may be identified as demonstration sites for other non-agent component testing. Compliance requirements for these facilities will be addressed as required. This will include the identification and application of any pertinent Executive Orders.

### **3. Business Team**

#### **a. Objectives**

The PMACWA established the Business Team to:

- Handle all procurement activities throughout the process, and
- Provide legal services to the program.

#### **b. Procurement Activities**

The ACWA Solicitation was issued to 153 firms on July 28, 1997. The Solicitation was developed to evaluate alternative technologies for a total process to demilitarize assembled chemical weapons. The Solicitation was structured for three sequential tasks. Task one provides firms the opportunity to fill “Data Gaps” in their proposed technology. Task two requires firms to prepare a technology demonstration work plan. Task three is for demonstration testing. Twelve firms responded to the Solicitation with proposals by the proposal closing date of September 15, 1997. Two additional proposals were received after the proposal closing date and could not be considered for award. The twelve timely proposals were evaluated in accordance with the Solicitation evaluation criteria and seven firms were awarded contracts to fill technology “Data Gaps.” The five firms that did not receive contract awards were provided with a formal debriefing on the results of the evaluation of their proposals.

The ACWA Broad Agency Announcement (BAA) was issued on August 27, 1997 to 174 firms. The BAA was issued to evaluate less mature technologies or partial alternative technology solutions to demilitarizing assembled chemical weapons. One BAA proposal has been received as of the date of this report.

#### **c. Stakeholder Involvement in the Procurement Process**

The evaluation criteria set forth in the Solicitation are a joint work product of Dialogue Members and PMACWA staff. This criteria development was conducted at three public meetings in Colorado Springs, CO; Lexington, KY; and Baltimore, MD. In addition to the public meetings, several Dialogue members participated in government criteria workshops. Although the PMACWA staff and the Dialogue were able to reach a consensus on the criteria, all understood that the final decision authority remained with PMACWA.

During the initial technology evaluation, the Dialogue was represented by the CATT. CATT members have signed appropriate procurement non-disclosure statements and conflict of interest agreements and have access to contractor proposals. The CATT members performed their independent assessment of industry proposals and provided their input to the PMACWA staff.

**d. Proposed Activities - Fiscal Year 1998**

The activities planned for the Business Team for Fiscal year 1998 include the following:

- Award contract tasks for preparation of demonstration work plans (April 1998).
- Provide formal debriefings to firms who did not receive demonstration work plan contracts (April 1998).
- Award contract tasks for demonstration testing (June 1998).
- Provide formal debriefings to firms not selected for technology demonstration (June 1998).

**4. Public Outreach Team****a. Objective**

The goal of the Public Outreach Team is to advise the Program Manager and other program team members on matters involving public participation. The Team provides the necessary tools and information needed to support the Department of Defense's mission to communicate effectively with the public and interested parties. The open exchange of ideas among the Team and program members enables evaluation of outreach needs to ensure that interactive public involvement is not only incorporated but also encouraged at every stage of the program.

**b. Information Services**

**Outreach Initiatives.** Information is easily accessible by interested citizens through two venues. Public Affairs Officers (PAOs) are located at storage sites to ensure dissemination of current and accurate information. Outreach offices were previously established in each stockpile community and are being used to provide information and address concerns posed by the public. The Team develops and updates detailed program information which is regularly distributed to site PAOs and Outreach Coordinators.

**Resource Book.** The Team has developed a Resource Book that contains detailed program information for the site PAOs and Outreach Coordinators. The book serves as a reference guide for PAOs and Outreach Coordinators to answer questions about the program, prepare briefings on the program, access accurate and timely program updates, and identify key points of contact within the program. Instant access to the most current program information ensures that all offices communicate an accurate and consistent message.

**Tabletop Display.** The Team has developed a tabletop information center to attract attention to the available printed materials; it is currently on display in the Anniston, Blue Grass, Pueblo, Tooele, and Umatilla outreach offices. The display incorporates the ACWA logo and provides detailed

information on the program via timeline graphs and relevant printed literature. Printed information includes fact sheets, press releases, *Commerce Business Daily* announcements, news articles, and information packets. The literature and display will be updated accordingly as the program evolves.

**Technology Provider Assistance.** The Team assists the technology providers in actively involving and informing the public. The technologies that passed the initial threshold criteria are described in videos and brochures that are provided for the public through each PAO and outreach office.

**Mailing List.** The Team has compiled a master mailing list which comprises Dialogue members, federal and state congressional members and Citizens' Advisory Commission (CAC) members. In addition, interested individuals and organizations within each stockpile community can add their names to the mailing list by completing a form which is available in the outreach offices. The Team periodically updates the master mailing list to accurately disseminate detailed program information, including fact sheets, press releases, and briefings. The Team also sends periodic updates on the assessment to highlight new developments and milestone accomplishments.

**Electronic Resources.** The Team provides electronic information resources for public access through the development and maintenance of an informational web site that provides links to related sites such as the Keystone Center and the Dialogue Exchange web sites.

**Public Meetings.** While the above mediums of communication are effective, the Team stresses the importance of meetings with the public at large. Team members attend public and community meetings and coordinate continual efforts to provide information directly to the public.

**c. Related Support**

The Team advises PMACWA in the areas of government and media relations. The Team monitors government relations activities to ensure that mission progress is effectively communicated to federal, state, and local elected officials. The Team facilitates responses to general information inquiries, supports interviews with the media, and arranges photographic coverage. In addition, the Team provides public outreach advice and support to other ACWA teams as required.

**d. Proposed Activities - Fiscal Year 1998**

**1) Objective**

As the assessment program moves ahead, the goal of the Outreach Team is to provide the public with information that is current and easy to understand.

**2) Information Services**

**Periodic Updates.** Electronic and printed resources will be updated periodically to highlight new developments and milestone accomplishments. Printed materials will be disseminated to all contacts

on the ACWA mailing list. Electronic information via the World Wide Web will undergo daily maintenance to provide the most current program information.

**Public Meetings.** In addition to issues addressed by standing CAC meetings, each involved community has unique concerns regarding the assessment program. The Team will identify these issues and coordinate public meetings designed to address specific community concerns.

**On-going Analysis.** Frequent evaluation of public outreach needs is essential to the success of the ACWA program. Therefore, the Team will continue to encourage active public involvement for the duration of the program. Outreach needs and strategies will continually be examined to determine the most effective way for DoD to communicate program progress and developments.

**Data Interpretation.** Because ACWA terminology is complex, the Team will provide the public with streamlined explanations of technical data leading to easier comprehension of the basic technical principles and pertinent regulations.

**Lessons Learned** Although this assessment is separate and distinct from other programs, a contributing factor to the success of ACWA's public outreach activities is the application of lessons learned from previous experiences. The knowledge gained from the Program Manager for Chemical Demilitarization Alternative Technology and Approaches Product (Alt Tech) lends valuable insight into outreach activities for the ACWA assessment. To support the PMACWA with knowledge from prior experiences, the Team will evaluate lessons learned to prepare DoD for what lies ahead in the arena of public involvement.

## **B. Dialogue on ACWA**

### **1. Current Status**

**The Keystone Center.** In response to the desire to integrate stakeholder input, The Keystone Center, a non-profit, neutral facilitation organization specializing in environmental and health policy issues, was asked by a diversity of individuals from DoD and community organizations to convene the Dialogue on Assembled Chemical Weapon Assessment and to facilitate Dialogue meetings.

**Dialogue Participants.** Participants include representatives from affected communities; appropriate state and/or tribal representation; relevant Environmental Protection Agency (EPA) staff; appropriate Department of Defense staff from affected sites and headquarters; representatives from national citizen groups that regularly work on this issue; and other concerned entities.

**Dialogue Goal.** The Dialogue participants defined their goal as: to draw on a wide range of experience, perspectives, and expertise in support of efforts to identify, demonstrate and deploy safe, effective and broadly acceptable methods for disposal of chemical munitions and any resulting materials and/or waste streams.

**Dialogue Meetings.** Dialogue meetings have been in a variety of locations, whenever possible near stockpile sites. All Dialogue meetings are open to the public.

To date, this collaborative group, in conjunction with the ACWA Technical Team, has:

- **Created rigorous, three-tiered Program Evaluation Criteria in coordination with the PMACWA Technical Team.** Each alternative technology will be evaluated using the collaboratively agreed upon criteria. This same set of criteria also has been adopted by the National Research Council, which is conducting an independent technical assessment of the alternative technologies;
- **The Dialogue has maintained an active role in the Assessment Phase of the ACWA Program.** The Citizens' Advisory Technical Team, comprised of four Dialogue participants with a diversity of perspectives as well as a Technical consulting firm, has been working in coordination with the PMACWA Technical Team using the Dialogue-approved criteria to assess the alternative technology proposal; and
- **Solicited and incorporated additional input** through public meetings, mailings, and electronic correspondence from those communities, agencies, groups, and individuals not directly represented in the Dialogue.
- **Incorporated an avenue for promising partial technologies to be assessed.** A Broad Agency Announcement was released asking for partial technologies which may be appropriate for some specific sites to be considered throughout the ACWA Program.

## **2. Proposed Activities - Fiscal Year 1998**

The Dialogue will continue to collaborate with the DoD to best position the ACWA Program to meet its current objectives, and any follow-on mandates regarding the safe and responsible disposal of chemical weapons stockpiles. The Dialogue will continue to (1) have meetings that address ACWA Program issues; (2) solicit and incorporate input from the diversity of perspectives in the respective communities, agencies, organizations, and appropriate congressional representatives; and (3) aid in the identification, assessment, and demonstration of alternative technologies to the baseline incineration process with an eye towards possible follow-on deployment.

### **C. National Research Council (NRC)**

#### **1. Current Status**

As required by Public Law 104-201, Section 142, the assessment of alternative technologies is being "conducted in coordination with the NRC." Specifically, the NRC is performing an independent review and evaluation of the technologies that pass the PMACWA threshold (go/no-go) criteria. A committee of experts has been formed whose expertise ranges from chemical

process engineering to public involvement. The principal anticipated result of the NRC study will be a report evaluating the current status of each technology (including advantages, disadvantages, knowns, unknowns, and potential for implementation).

The NRC committee has met twice since the start of the program. Prior to the first committee meeting, NRC representatives attended the first three Dialogue meetings and made presentations about the NRC and its role in the program. At the first committee meeting, members received briefings from PMACWA representatives about the ACWA program and the evaluation criteria. Three members of the Dialogue also attended this meeting and gave a presentation about the Dialogue process. The second committee meeting was held in conjunction with the Dialogue, and presentations were made to the entire group by the potential technology providers.

## **2. Proposed Activities - Fiscal Year 1998**

The NRC is very interested in maintaining open communication with all parties in the ACWA process, including the Dialogue; but is also firmly committed to maintaining the independence of its assessment. Accordingly, NRC representatives will attend future Dialogue meetings, and time will be allotted at NRC meetings for members of the Dialogue to interact with the committee. Information gathering sessions of the committee meetings will be open, but once the committee begins to formulate its findings and recommendations, meetings will be closed to ensure the independence of the work.

During FY 1998, the NRC committee will conduct the majority of its data gathering activities. Visits to stockpile sites are planned to collect information about community concerns. Committee members will also visit technology provider facilities and demonstration locations to observe testing and examine process equipment first hand. Committee representatives will continue to attend Dialogue meetings and will give update briefings at such meetings.

Toward the end of the year, the draft NRC report will be developed and sent out for external review. The NRC requires approximately 4 months to review and publish their independent evaluation report. In order to enable the NRC's review to cover the entire Assessment and Demonstration Phases, acceptance of the NRC report will be in the April 1999 time frame (4 months after the congressionally mandated December 15, 1998 date) along with the PMACWA Supplemental Report to Congress.

### **III. KEY ISSUES**

#### **A. ACWA Program**

##### **1. Impact of the ACWA Program on the Chemical Demilitarization Program**

House Report 105-132 (June 16, 1997) directed the Secretary of Defense to report to the Congress by December 31, 1997 on the impact of the ACWA Program on the costs and schedule

for completion of destruction operations at Pueblo and Blue Grass storage sites. In response to this direction, the DoD believes that sufficient information and data do not currently exist to project an impact on construction and systemization costs or schedules for those sites. Currently, the ACWA Program is in the Assessment Phase, which is the phase prior to actual demonstration of potential chemical weapons destruction technologies. The program schedule calls for the evaluation of technologies to be completed and demonstration contracts awarded in June 1998. The DoD expects to have sufficient information on both potential cost and schedule impact for Pueblo and Blue Grass at the completion of the demonstration contracts and in time for the December 1998 Report to Congress. For cost and schedule impacts associated with the two year moratorium at Pueblo and Blue Grass, refer to Section II, Chemical Stockpile Disposal, of the FY 97 Annual Status Report on the Disposal of Lethal Chemical Weapons and Materiel.

Additionally, the potential impact of the ACWA Program on the overall Chemical Demilitarization Program, specifically, the baseline incineration program, could be in terms of cost, schedule, safety, timeliness of permits, and many additional factors leading to mission accomplishment. However, since the ACWA Program is still in its early stages, it is difficult to determine impacts at this time. The program schedule calls for the demonstrations to be completed in 1998. Therefore, in the next Report to Congress (December 1998), information addressing the impact on the Chemical Demilitarization Program will be available and contained in that report.

## **2. Implementation of Successfully Demonstrated Alternative Technologies**

During the first year of this program, there are varied implementation issues that PMACWA has identified and should address to provide the kind of recommendations that would allow Congress to make decisions regarding implementing any alternative technology(ies). Costs, implementation schedule, and environmental regulatory requirements are a few of the issues that must be studied and analyzed to make sound business judgments and recommendations. Additional discussions with Congress on this matter will be required.

## **3. Demonstration of the Maximum Number of Alternative Technologies**

Although Public Law 104-208 requires the DoD to identify and demonstrate a minimum of two alternative technologies, PMACWA hopes to identify and demonstrate more. In fact, the solicitation is structured so that the maximum number of viable alternative technologies may be demonstrated. PMACWA remains committed to that goal, although it is recognized that demonstrations may be limited by available funding and testing facilities. Nevertheless, PMACWA believes that demonstrating the maximum number of viable alternative technologies will serve several important public purposes. First, it will maximize PMACWA's ability to demonstrate a range of technologies covering the breadth of munitions and locations. Second, it will maximize PMACWA's ability to successfully demonstrate two or more technologies. Third and finally, in the event two or more demonstrations prove successful, it will maximize the DoD's ability to compete any subsequent pilot and/or implementation effort, which could ultimately lead to lower program costs.

#### **4. Impact of Chemical Weapons Convention Restrictions**

One of the requirements under the Chemical Weapons Convention (CWC) Verification Annex Part VI, ratified by the U.S. in April 1997, is a limit in the amount of schedule 1 chemical agents that can be used within a calendar year. The U.S. is allotted one metric ton (1000 kilograms) per year for permitted purposes. The Department of Defense is annually apportioned 440 kilograms (kg) of the 1000 kg for protective purposes. And, no more than 368 kg of the 440 kg allotment could be available to support demonstration testing. The goal of the ACWA program is to demonstrate as many viable alternative technologies as possible within the schedule and budget. The 368 kg is a cumulative total and the demonstration testing will more than likely require testing with H, HD, HT, GB, and VX. The testing will be required to show that the proposed technology(ies) adequately destroy the chemical agents. In addition, the neutralized agent products will also be required for secondary treatment testing to show the final waste stream leaving the facility meets all regulatory requirements. More than likely, the demonstration will require more than the 1,000 kg allotment to support adequate demonstration testing of the proposed technologies to prove they have the potential for pilot scale testing and eventually implementation. Adequate demonstration is defined as conducting enough tests at the proper scale to show the proposed technologies produce repeatable results -- statistically valid data -- and can be integrated into a total solution system.

PMACWA is considering four sites for the technology demonstrations. The sites include the Edgewood Research, Development and Engineering Center at the Aberdeen Proving Ground, the Chemical Agent Munitions Disposal System (CAMDS) at the Deseret Chemical Depot, the Material Test Facility at Dugway Proving Ground, and possibly one contractor facility in New York State. The final selection for demonstration testing will be made in March 1998.

One potential solution to the 368 kg ceiling is to declare each of the above test facilities as new Chemical Weapons Destruction Facilities. A Destruction Facility is covered under CWC Verification Annex Part IV(A) and does not have a limit established for the amount of agent that can be destroyed annually. NOTE: The CAMDS facility was declared a destruction facility in April 1997.

The CWC currently shows a 360 day lead time required before the start of a new destruction facility. The requirements include:

- a. U.S. submit detailed facility information 360 days before beginning of destruction (BOD)
- b. Organization for the Prohibition of Chemical Weapons (OPCW) provides draft inspection plan to U.S. for comment 270 days before BOD
- c. OPCW conducts initial visit to destruction facility 240 days before BOD
- d. U.S. submits final facility agreement 210 days before BOD
- e. Inspectors granted access to destruction facility not less than 60 days before BOD

f. BOD and OPCW inspectors begin systematic on-site verification

The above requirements are suited for a full scale destruction facility. The ACWA program will not make the selection for demonstration testing until March 1998 and will not begin demonstration testing until June 1998. The detailed information required by the OPCW will not be available until that time. Therefore, without the above mentioned declaration as Destruction Facilities, the CWC requirements are incompatible with the ACWA program and schedule.

The U.S. Army has initiated efforts to declare the needed new destruction facilities, but will need DoD and U.S. Government support in requesting relief from the OPCW in order to meet the requirements set forth by Public Law 104-208.

Another issue related to the destruction facility declaration will be the presence of on-site OPCW inspectors. Specifically, there could be a concern over technology transfer. Verification measures must include means of protecting these new technologies and the companies who sponsor them during the destruction, verification and assessment processes.

**B. Dialogue on ACWA**

The Dialogue considers the following to be the key issues facing the ACWA Program:

1. While the Dialogue recognizes the scope of the ACWA Program is limited to Demonstration, the Dialogue has an obvious interest in follow-on programming to include possible deployment. The diversity of perspectives represented on the Dialogue is committed to ridding the nation's stockpiled chemical weapons in a safe, cost-effective, and publicly acceptable manner which meets CWC deadlines.
2. The Dialogue supports and recommends strategic coordination with the current Program Manager for Chemical Demilitarization while maintaining ACWA as an independent process. Although it will continue to support the ACWA Program's independence, the Dialogue believes that limited coordination between these Programs as the ACWA Program moves forward, will enable possible future deployment at existing and future stockpile facilities to meet the CWC schedule cost-effectively.
3. The Dialogue supports demonstrating ALL viable technologies. Through the course of our discussions, it has become evident that each site has specific and unique requirements. What may be acceptable and feasible in one community, may not be appropriate for another community. Therefore, the Dialogue supports the demonstration of as many technologies as appear viable. The Dialogue is, however, sensitive to the fact that limited funding is available for demonstration at this time.

In conclusion, the Dialogue on Assembled Chemical Weapons Assessment is pleased with the inclusive and collaborative ACWA Program thus far. It looks forward to continuing discussions with DoD and members of Congress about the key issues identified above and other issues that will surely emerge as the ACWA Program continues to advance and mature.

## **Appendix A**

### **Evaluation Criteria Summary**

## Appendix A

### Evaluation Criteria Summary

#### Threshold (Go/No Go) Criteria

Criteria Type	ACWA Program Phase and Step
<b><i>Threshold ("Go/No Go") Criteria</i></b>	
<ul style="list-style-type: none"> <li>• The technology must be a total ACWA Program solution.</li> <li>• The treatment process must be an alternative to baseline incineration.</li> <li>• The technology must be capable of meeting the ACWA program schedule.</li> <li>• Laboratory-scale testing must have been completed with agent(s) or simulants.</li> <li>• Laboratory-scale testing must have been completed with energetic(s) or simulants.</li> <li>• Contractors must have the legal right to use any proprietary technology.</li> </ul>	These criteria are used to evaluate proposals and award Data Gap Resolution task orders (Phase 2, Step 1).

#### Demonstration Selection Criteria

Criteria Type	ACWA Program Phase and Step
<b><i>Demonstration Selection Criteria</i></b>	
Process Efficacy <ul style="list-style-type: none"> <li>Process Performance               <ul style="list-style-type: none"> <li>Effectiveness</li> <li>Products</li> <li>Sampling and Analysis</li> </ul> </li> <li>Process Maturity</li> <li>Process Operability</li> <li>Process Monitoring and Control</li> <li>Process Applicability</li> </ul>	The first three categories of this criteria are used to identify data gaps (Phase 2, Step 2) and for ranking technologies and award of Demonstration Work Plan task orders (Phase 2, Step 3).
Safety <ul style="list-style-type: none"> <li>Worker Health &amp; Safety               <ul style="list-style-type: none"> <li>Design and Normal Facility Occupational Impacts</li> <li>Facility Accidents with Worker Impacts</li> </ul> </li> <li>Public Safety               <ul style="list-style-type: none"> <li>Facility Accidents with Public Impacts</li> </ul> </li> </ul>	
Human Health and Environment <ul style="list-style-type: none"> <li>Impact on Human Health and Environment</li> <li>Completeness of Effluent Characterization</li> </ul>	All four categories are used for the evaluation of the Demonstration Work Plan and the award of Technology Demonstration task orders (Phase 2, Step 4).
Business Factors (not numerically scored) <ul style="list-style-type: none"> <li>Non-Cost Factors (These will be scored Pass/Fail)               <ul style="list-style-type: none"> <li>Schedule for Demonstration</li> <li>Technical/Management Approach</li> <li>Past Performance</li> <li>Socioeconomic Plan</li> </ul> </li> <li>Demonstration Cost</li> </ul>	



### Implementation Evaluation Criteria

Criteria Type	ACWA Program Phase and Step
<b>Implementation Evaluation Criteria</b>	
<ul style="list-style-type: none"> <li>Process Efficacy               <ul style="list-style-type: none"> <li>Process Performance</li> <li>Effectiveness</li> <li>Products</li> <li>Analysis</li> </ul> </li> <li>Process Maturity</li> <li>Process Operability</li> <li>Process Monitoring and Control</li> <li>Applicability</li> <li>Safety               <ul style="list-style-type: none"> <li>Worker Health &amp; Safety                   <ul style="list-style-type: none"> <li>Design and Normal Occupational Impacts</li> <li>Facility Accidents with Worker Impacts</li> </ul> </li> <li>Public Safety                   <ul style="list-style-type: none"> <li>Facility Accidents with Public Impacts</li> <li>Off-Site Transportation Accidents</li> </ul> </li> </ul> </li> <li>Human Health and Environment               <ul style="list-style-type: none"> <li>Completeness of Effluent Characterization</li> <li>Effluent Characterization and Impact on Human Health and Environment</li> <li>Effluent Management Strategy</li> <li>Environmental Compliance and Permitting</li> <li>Resource Requirements</li> </ul> </li> <li>Potential for Implementation               <ul style="list-style-type: none"> <li>Life-Cycle Cost</li> <li>Schedule</li> <li>Public Acceptance</li> </ul> </li> </ul>	<p>These criteria represent the basis for the recommendations that will be made in the Report to Congress (Phase 3).</p>

# **Appendix B**

## **Acquisition Process**

## **Appendix B**

### **Acquisition Process**

#### **A. Overview**

The ACWA Program's acquisition process is complex (see Figure B-1). As explained in the body of this report, acquisition of technologies will follow a two Phase, multi-step process. The following provides a detailed description of the ACWA acquisition.

The ACWA Demonstration requirements are threefold: (1) Data gap resolution; (2) Preparation of a Demonstration Work Plan; and (3) Conduct of a Demonstration/Validation Test Program. Each of these three requirements will be executed under a separate contract.

- **Data Gap Resolution.** Based on an initial assessment of the information provided in the contractor's proposal, the government prepared a prioritized list of data gaps that exist for that particular technology. Using the government's identified data gaps, the contractors are in the process of preparing a Data Gap Resolution Work Plan to resolve as many of the data gaps as possible. The Data Gap Resolution Work Plan will be submitted to the government within 19 days of the receipt of the government's list of data gaps. The Data Gap Resolution Work Plan will provide a detailed description of how the contractor will resolve the data gaps (including any testing) and a milestone schedule for completion of the work.

Upon receipt of the government's approval of the Data Gap Resolution Work Plan, the contractor shall be authorized to proceed with the approach presented in the Data Gap Resolution Work Plan. Upon completion of the data gap resolution, the contractor will prepare a Data Gap Resolution Technical Report that clearly responds to each of the data gaps. The Data Gap Resolution Technical Report will be submitted to the government within 54 days of the government's approval of the Data Gap Resolution Work Plan. The government will use this report in conjunction with the information provided in the original proposal to conduct a final assessment of the technology.

- **Demonstration Work Plan.** If the contractor's technology is recommended for further consideration, the government will provide the contractor a Demonstration Scope of Work (SOW). The Demonstration SOW will detail what aspects of the contractor's technology are to be tested, where the tests are to be conducted, and what government furnished materials and facilities will be provided.

Within 12 days of receipt of the Demonstration SOW, the contractor will attend a meeting in Aberdeen Proving Ground, MD to discuss the Demonstration SOW and the proposed demonstration test program. At the conclusion of the meeting,

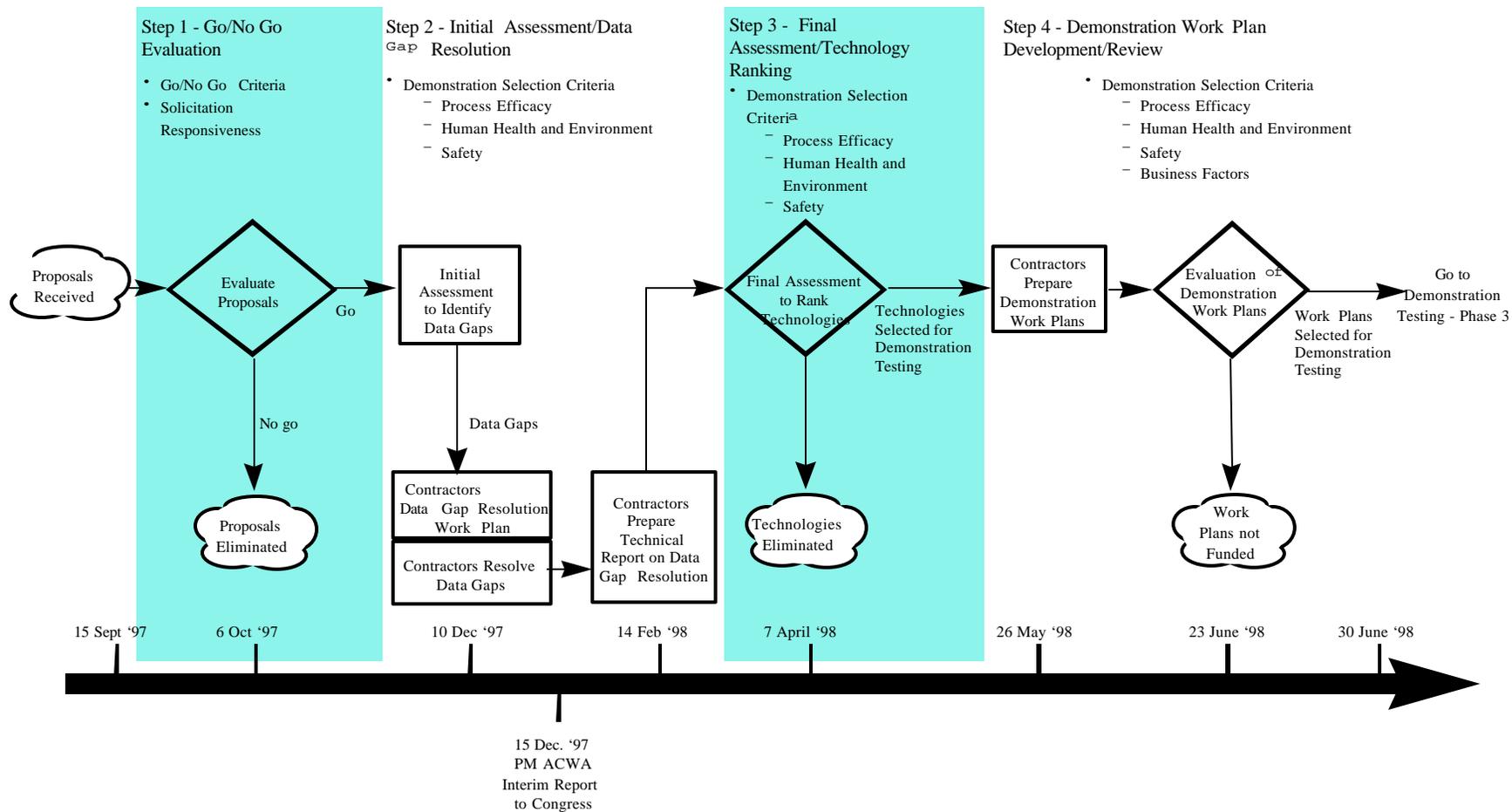


Figure B-1. Program Milestones

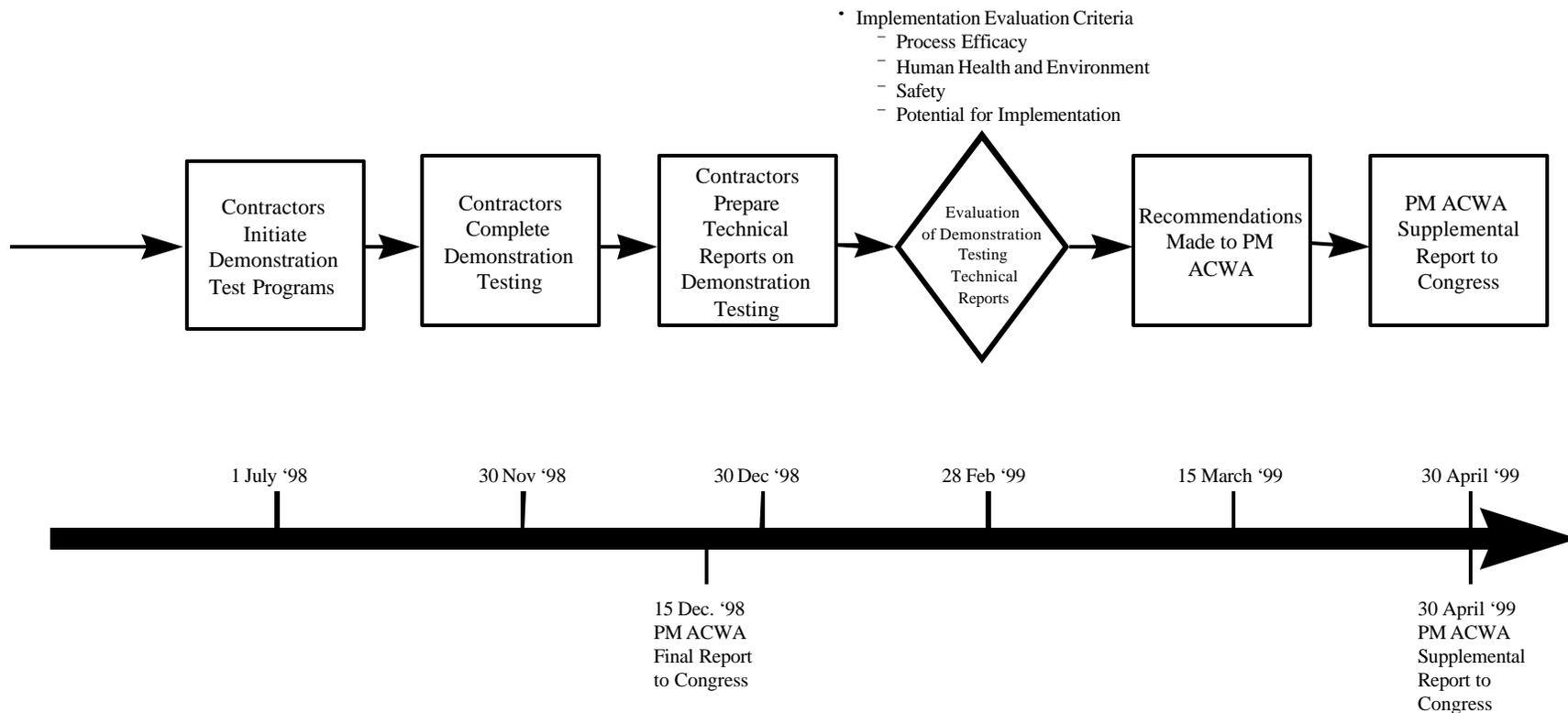


Figure B-1 Program Milestones (Continued)

the government will prepare minutes of the meeting that clearly identify all agreed upon changes to the Demonstration SOW. Upon agreement between the government and the contractor to the Demonstration SOW changes, the contractor shall prepare a detailed Demonstration Work Plan.

The Demonstration Work Plan shall be divided into two volumes: Volume 1 – Technical/Management and Volume 2 – Cost. The Technical/Management Volume will have five sections:

- Technical approach to preparing the necessary plans and reports and to performing the demonstration test program;
- Management approach that presents the technical personnel and the proposed methods and procedures which will be used to ensure adequate schedule and cost monitoring and control, participant interface, program importance, timely identification and reaction to potential problems, and timely progress reporting methods;
- Schedule for completing the demonstration testing;
- Examples of contractor past performance for programs of a similar nature and complexity (a template for Past Performance will be provided in the Demonstration SOW); and
- Subcontracting Plan.

In the Demonstration Work Plan Volume 2–Cost, the contractor will prepare an estimated level-of-effort for demonstration testing. The estimate will include material requirements; a list of all subcontractors with their roles identified; travel requirements; estimated cost; the period of performance or completion date; and a description of all assumptions used by the contractor to calculate all costs for labor, materials, subcontracts, and travel.

- Technology Demonstration/Validation. If the contractor's Demonstration Work Plan is selected for demonstration/validation testing, then the contractor will be awarded a contract to conduct the demonstration test program as proposed in the Demonstration Work Plan as approved by the government.

The Demonstration/Validation Test Program will be designed to individually test the proposed solution's critical process steps (unit operations). PMACWA's intent is not to test all of the process steps for every proposed solution but only to test those critical steps where there is uncertainty about the operation or where validation of the contractor's claims are necessary. For the purpose of the demonstration test, the

critical process steps include: chemical munition access, destruction/treatment of the agent (GB, VX, HT, H, HD), destruction/treatment of the energetics/propellants (TNT, Composition B4, Tetrytol, Tetryl, etc.), destruction and/or treatment of the metal parts, and treatment of dunnage and other plant process wastes. The test programs will be conducted at a government approved facility as determined through negotiations with the contractor.

PMACWA will develop specific objectives for the testing of each proposed solution, and the overall program objectives shall be as follows:

- Confirm the applicability of the technology(ies) as a total solution
- Define the critical design characteristics and operating parameters
- Test critical processing steps and their ability to be incorporated into an overall operating system
- Verify the proposed solution meets the performance criteria (i.e., ability to successfully destroy/treat agent; energetics; and metal parts)
- Define the type, quantity, and chemical/physical characteristics of the actual process emissions (air, liquid, solid) to assist in future permitting efforts
- Demonstrate operation of critical instrumentation for monitoring and control (to the extent possible)
- Identify potential environmental, health, and safety consequences and appropriate mitigation measures
- Provide information to refine system safety hazards analysis for the total integrated solution

To the maximum extent practical, the government will issue at least two task orders for Technology Demonstration to those contractors representing the “best value” to the government. The Contracting Officer’s “best value” determination will be based on an integrated assessment of all the demonstration selection factors, considering their relative order of importance. This integrated assessment will consider the technical ranking performed prior to issuance of Demonstration Work Plan task orders, as well as the Business Factors, including cost.

## **B. Description of Acquisition Process Implementation**

Synopses have been published in the Commerce Business Daily (CBD) announcing the

requirement to identify total solutions alternatives to incineration for the disposal of assembled chemical weapons. A presolicitation conference with industry was held June 25-27, 1997 at the Chemical Demilitarization Training Facility, Aberdeen Proving Ground, MD, addressing program objectives, stakeholder concerns, and a description of the procurement process. Time slots were allotted at that conference for contractors to present an overview of their proposed technology/approach in an effort to encourage teaming.

The request for proposal (RFP) was published on July 28, 1997. The contractors (companies proposing a technology(ies)) had 49 days to prepare their proposals. The RFP closed on September 15, 1997. A total of 14 proposals were received. Only 12 timely proposals underwent the Threshold (Go/No Go) evaluation. The remaining two proposals were not evaluated because their proposals were received after the 4:00 PM (eastern standard time) closing date on September 15, 1997.

Each of the six Go/No Go criteria was scored as either “Go”, to indicate the proposed technology met the criteria, or “No Go”, to indicate that it failed to meet the criteria. Each rating was supported by narrative rationale prepared by each evaluator. Each day, at the completion of reviewing each proposal, the Core Evaluation Team conducted a daily consensus meeting to discuss the individual ratings. A technical advisor from the CATT and various adjunct advisors were present at these meetings. As a group, the Core Evaluation Team reached consensus on each of the Go/No Go criteria ratings. After all the proposals were reviewed, a general consensus meeting was conducted with all core members, adjunct members, subject matter experts, and other process participants.

The responsiveness factor and Go/No Go were of equal importance. All Go/No Go criteria are of equal relative importance; failure to meet one of the criteria disqualified a contractor from receiving a contract award.

- Responsiveness. Each contractor’s proposal was evaluated on the proposal’s responsiveness to the requirements presented in Section L (Instructions, Conditions and Notices To Contractors) of the request for proposal.
- Go/No Go Criteria. The contractor’s proposal was evaluated against the Go/No Go criteria described in the following bullets. These criteria represent the minimum requirements for a contractor’s proposal to be considered for award of a task-order contract and the issuance of a task order for data gap resolution. Failure to meet all of these requirements eliminated the proposal from further consideration.
  - Total Solution. The technology(ies) must be a total ACWA Program solution for at least one single agent-filled munition type (VX Rockets or HD 105mm Projectile, etc.). The proposed solution may include use of any of the following processes: (1) the reverse assembly process to access the components (i.e., agent, metal parts, energetics, and dunnage/packaging); (2) neutralization for

agent (HD and VX); and (3) smelting for metal parts (if already decontaminated to a 3X condition).

- Alternative to Baseline Incineration. The treatment technology(ies) must be an alternative to baseline incineration.
- ACWA Schedule. The technology(ies) must utilize processes and equipment that are developed or capable of being developed in time to meet (not extend) the current ACWA program schedule (initiate demonstration test program by June 1998).
- Laboratory Testing with Agent or Similar Chemicals. Laboratory-scale testing must have been completed with agent(s) or chemicals with similar properties to agent to support the viability of the technology being proposed.
- Laboratory Testing with Energetics or Similar Chemicals. Laboratory-scale testing must have been completed with energetic(s) or chemicals with similar properties to energetics to support the viability of the technology being proposed.
- Legal Right to Technology. Contractors must have the legal right to use any proprietary technology for testing and demonstration purposes, as evidenced by unencumbered ownership or by an existing licensing or other agreement granting such right.

Based on the above criteria, the Government awarded seven contracts. The seven successful companies are currently in the process of addressing data gaps.

## **Appendix C**

# **Environmental Concerns and Strategies**

## **Appendix C**

### **Program Manager Assembled Chemical Weapons Assessment Program Environmental Concerns and Strategies**

#### **I. INTRODUCTION**

The following paragraphs discuss the Environmental Team's work to address the RCRA, site selection, and NEPA-related concerns.

#### **II. RESOURCE CONSERVATION AND RECOVERY ACT**

The purpose of the ACWA program is to demonstrate alternatives to the baseline incineration process for the demilitarization of assembled chemical munitions. When analyzing the ACWA program for environmental protection, the primary consideration will be RCRA, which is the dominant hazardous waste regulatory statute in the United States.

##### **A. Concern**

The Environmental Team reviewed the schedule and other program constraints associated with the proposed demonstration testing to evaluate possible strategies for environmental compliance. The timing of the test phase is identified as a critical element that would force tradeoffs between technical and regulatory requirements. The conclusion from this analysis, which included discussions with state and federal regulators, was that the use of RCRA treatability studies would provide the best compromise to allow program goals and objectives to be met within the current reporting schedule. Treatability studies, modified to provide for public notification and interaction, were recommended by DoD as the primary mechanism for accomplishing ACWA testing.

##### **B. Strategy for ACWA Demonstrations**

Test plans will be developed to meet the requirements of a RCRA treatability study. The ACWA program will seek to perform technology demonstrations as RCRA treatability studies as defined by federal and state hazardous waste regulations. To allow for adequate testing of proposed systems, variances to the one kilogram (kg) acute hazardous waste limit for treatability studies will be requested.

##### **C. Rationale**

Three methods are available for the PMACWA to seek regulatory approval under RCRA to proceed with ACWA's technology: RCRA Part B permits; Research, Development and Demonstration (RDD) permits; and treatability study submissions. Treatability studies have a shorter associated lead-time for approval than do RCRA Part B and RDD permits. The

disadvantage with the use of treatability studies is the limitation on quantities of agents and energetics that can be tested.

RCRA Part B permits have an associated lead-time of more than one year to write and process. RDD permits generally can be written and processed in less than a year. However, due to the aggressive schedule for ACWA demonstrations, insufficient lead-time for a RDD permit is available to avoid program delays. Adding this lead-time to ACWA's test schedule will push the completion date for all demonstrations beyond December 1998.

Hazardous waste treatment, storage, and disposal facilities are required to obtain a detailed permit for their operations. These permits are commonly known as RCRA Part B permits. Typically, a RCRA Part B permit requires more than one year to be written, reviewed, presented for public comment, and approved. There is insufficient time for this process to be completed if technology demonstrations are to be finished before December 1998.

As RCRA Part B permits are site- and process-specific, none of the chemical stockpile sites or Army chemical agent test facilities have permits in place, or in the approval process, that can be used for the technology demonstrations without major modifications. The needed modifications would be comparable to preparing and obtaining approval for a new permit. Part B permits are also non-temporary in nature and may not be as appropriate for this type of program as would other regulatory mechanisms.

RDD permits are one means to evaluate new and innovative technologies. This form of permit would be applicable to the ACWA demonstrations. An RDD permit could conceivably be developed and approved in less than one year. However, the probability of accomplishing this is not high. RDD permits are also specific to a site and a process. This means that multiple RDD permits would need to be formulated and approved to support the diverse set of ACWA testing anticipated. Therefore, it cannot be assumed that an RDD permit would be available in time to support ACWA technology demonstrations.

In contrast to the RCRA Part B and RDD permits, treatability studies have a shorter associated lead-time to complete. This shorter lead-time would allow ACWA to complete its technology demonstrations.

Treatability studies are intended to allow technology and process evaluations of hazardous waste treatment and disposal systems. The test plans for a treatability study are subject to review and approval by regulatory agencies, but the process is not as lengthy as the permit process. However, the use of treatability studies will constrain the quantities of agents and energetics that can be tested. Of particular concern, treatability studies are limited to less than one kg (2.2 pounds) of acute hazardous waste (this includes waste chemical agents in most chemical stockpile states) or 1000 kg (2205 pounds) of non-acute hazardous waste per test. This arises from the fact that individual states have listed the chemical agents as acute hazardous waste. The one kg limitation is not

applicable under federal standards because the U.S. EPA has not specifically listed the chemical agents. In this instance, state standards are more stringent. Variances to the quantity limits are allowed to the one kg acute hazardous waste limitation in some cases. Such variances appear appropriate to pursue for ACWA demonstrations and could allow the use of up to 1000 kg of agent per study. For purposes of ACWA's demonstrations, the one kg limitation is incompatible with most testing scenarios envisioned, thereby necessitating quantity variances.

The EPA or any state authorized by the EPA can administer the RCRA requirements. However, even in authorized states, the EPA will continue to carry out federal provisions imposed by the Hazardous and Solid Waste Amendments (HSWA) of 1984 until the states obtain additional authorization to administer the HSWA requirements. The states may adopt more stringent and extensive requirements than those contained in the federal regulations. The states within which the chemical stockpile sites are located are authorized to administer their RCRA programs. Colorado, Indiana, Kentucky, Maryland, Oregon, and Utah have specific provisions that address chemical munitions with their state regulations.

### **III. SITE SELECTION**

PMACWA is planning technology demonstrations to address a multifaceted, scientific and technical challenge in a complex regulatory environment of laws that govern the conduct of those demonstrations. More technologies could be demonstrated if there could be concurrent tests spanning several states. But Title 50 U.S.C. statutory provisions specifically limits the transportation of assembled chemical weapons.

#### **A. Concern**

Transportation within state boundaries is not specifically prohibited. Such restrictions could limit the number of sites to which ACWA can plan its demonstrations, if full live munitions were required for testing. However, this will not limit component testing of various munition types and should have minimal impact on the overall program. Intra-state transport, specifically within Utah, may be required for testing.

#### **B. Strategy for ACWA Program**

Of potential DoD sites with chemical munitions available for potential demonstration, three meet the statutory restrictions for transportation and are suitable to host ACWA's demonstrations. They are US Army Chemical Agent Munitions Disposal System (CAMDS) Activity, Deseret Chemical Depot, Utah; West Desert Test Center, Dugway Proving Ground (DPG), Utah; and Edgewood Research Development and Engineering Center (ERDEC), Aberdeen Proving Ground (APG), Maryland.

#### **C. Rationale**

CAMDS, DPG, and APG/ERDEC have suitable facilities to conduct the ACWA demonstrations, and the Title 50 U.S.C. statutory transportation restrictions can be met.

CAMDS has been in operation since 1979 conducting research, development, and demonstration of methods to demilitarize chemical munitions and to treat the wastes resulting from the demilitarization process. ACWA demonstrations can use portions of the CAMDS facility that are not being used for other scheduled projects. Both chemical agent containment and blast containment structures are available. CAMDS can also store both hazardous wastes and chemical agent waste residues generated during demonstrations. Some of the current incineration units at CAMDS may be used to treat demonstration waste residues, if needed. Both storage and treatment of wastes would be subject to the State of Utah approval. CAMDS has a broad range of chemical munitions available for ACWA demonstrations.

DPG is a major DoD range and test facility. The primary mission of DPG is the testing and evaluation of military materiel and military training. This mission includes chemical warfare defense testing and training. ACWA demonstrations at DPG would use the Materiel Testing Facility (MTF), which was specifically designed to test equipment under a variety of environmental conditions and in a chemical agent environment. Any technology testing would be fully contained in the test chambers. The MTF is not designed for blast containment. Any ACWA demonstrations involving energetic materials would have to have blast containment integrated within the process itself to use the MTF. DPG has some storage capacity for wastes generated during demonstrations, but no hazardous waste treatment is available. DPG has only limited quantities of agents and chemical munitions on site. Items for ACWA demonstrations may have to be shipped from Desert Chemical Depot to DPG.

The ERDEC facilities were used during the first Alternative Technology testing by U.S. Army Program Manager, Chemical Demilitarization (PMCD). Two test chambers are located at ERDEC. Both chambers are designed to contain any chemical agent released within them. The chambers also are designed for blast containment. ERDEC has some capability to hold demonstration test residues, but no on-site hazardous waste treatment is available for ACWA demonstration wastes. APG has no assembled chemical weapons on site. Therefore, testing will be limited to weapon components.

Technology providers may offer other locations for consideration. These sites will have to be evaluated in light of the needs of the ACWA program and constraints such as environmental regulations.

#### **IV. NATIONAL ENVIRONMENTAL POLICY ACT**

NEPA requires federal agencies to integrate environmental considerations into the decision-making process and to document the environmental review in agency records. These NEPA requirements are statutorily triggered for federal actions potentially affecting the quality of the human environment. Under these circumstances, NEPA requires that copies of the environmental analysis documentation

and the comments and views of federal, state, and local agencies be made available to the public.

NEPA applies to the ACWA program. The mere fact that the technologies being demonstrated belong to private industry does not exempt the demonstration from being a federal action. The decisions concerning where and what to demonstrate rest with PMACWA; therefore, it is a federal action and NEPA applies.

#### **A. Concern**

A NEPA Environmental Assessment can result in either a Finding of No Significant Impact (FNSI) or a Notice of Intent (NOI) to conduct an Environmental Impact Statement (EIS). An EA that results in an NOI will delay ACWA demonstration activities for 18 months, while the EIS is conducted. This work would extend ACWA demonstration activities beyond the PL 104-208 statutory deadline of December 1998 to have completed no less than two demonstrations of alternative technologies.

#### **B. Strategy for ACWA Demonstrations**

PMACWA consulted Army Regulation 200-2 to determine the appropriate level of analysis and documentation under NEPA for this proposed action. None of the examples in the Army Regulation specifically addresses a program such as ACWA. However, the size and scope of the ACWA program does not allow it to qualify for a categorical exclusion. The EIS does not appear to be warranted as the program is designed to have minimal environmental impact. For example, no new facility construction is planned and testing is to be performed in facilities that can provide full containment of the demonstrations. Therefore, the PMACWA will prepare an EA to assess potential environmental impacts resulting from the demonstrations. The EA will consider that multiple demonstration activities will likely take place at one or more sites that currently have the capacity for such testing and evaluation. The EA will not address potential impacts from implementing the technologies beyond the demonstration phase.

The EA can result in a FNSI or an NOI. If the EA determines that there are no potentially significant impacts from the demonstration activities, a FNSI will be published for appropriate public comment, after which PMACWA can sign a Record of Decision and begin the demonstrations. However, if the EA determines that there are potentially significant impacts, a NOI to prepare an EIS will be published, and the entire EIS process will begin.

The draft EA and FNSI or NOI should be available for comment by April 1998. The EA and FNSI or NOI will be completed and published in May 1998.

#### **C. Rationale**

PMACWA does not intend to prepare an EA with a predetermined conclusion of FNSI. The Environmental Team, as part of its activities for calendar year 1998, is assessing options to address

the potential impact of an NOI on ACWA demonstration schedules.

## **Appendix D**

### **Acronyms/Abbreviations**

**Appendix D****ACRONYMS/ABBREVIATIONS**

3X	the state of absence of agent in a closed headspace, signifying that the material has been appropriately surface decontaminated
5X	the state of agent decontamination after heating to 538°C (1000°F) for 15 minutes, signifying that the material is clean of chemical agent and may be released from government control
ACWA	Assembled Chemical Weapons Assessment
a-HAX	A solution of humic acid in potassium hydroxide
Alt Tech	Alternative Technology
APG	Aberdeen Proving Ground
BAA	Broad Agency Announcement
CAC	Citizens' Advisory Commission
CAMDS	U.S. Army Chemical Agent Munitions Disposal System
CATT	Citizens' Advisory Technical Team
CBD	Commerce Business Daily
CWC	Chemical Weapons Convention
DoD	Department of Defense
DPG	Dugway Proving Ground
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ERDEC	Edgewood Research Development and Engineering Center
FNSI	Finding of No Significant Impact
GPCR	Gas Phase Chemical Reduction
HSWA	Hazardous and Solid Waste Amendments
Kg	Kilogram
KOH	Potassium Hydroxide
MTF	Materiel Testing Facility
NEPA	National Environmental Policy Act
NOI	Notice of Intent
NRC	National Research Council
PAO	Public Affairs Officer
PL	Public Law
PMACWA	Program Manager, Assembled Chemical Weapons Assessment
PMCD	Program Manager for Chemical Demilitarization
RCRA	Resource Conservation and Recovery Act
RDD	Research, Development and Demonstration
RFP	Request for Proposals
RIA	Rock Island Arsenal
SCWO	Supercritical Water Oxidization
SET	Solvated Electron Technology
SOW	Scope of Work

U.S.                      United States  
U.S.C.                  United States Code