

# Monthly Status Briefing

*February 2014*



Pueblo Chemical Agent-Destruction Pilot Plant



Program Executive Office  
Assembled Chemical Weapons Alternatives



# PCAPP

Pueblo Chemical Agent-Destruction Pilot Plant

[www.peoacwa.army.mil](http://www.peoacwa.army.mil)



**A PARTNERSHIP FOR SAFE CHEMICAL WEAPONS DESTRUCTION**

# Project Background



The Program Executive Officer, Assembled Chemical Weapons Alternatives (ACWA), headquartered at Aberdeen Proving Ground, Maryland, is responsible for managing all aspects of the safe and environmentally sound destruction of the chemical weapons stockpiles in Colorado and Kentucky.



Pueblo Chemical Agent-  
Destruction Pilot Plant

The Pueblo Chemical Agent-Destruction Pilot Plant (PCAPP) will safely destroy 2,611 tons of mustard agent in mortar rounds and artillery projectiles stored at the U.S. Army Pueblo Chemical Depot (PCD).

- Neutralization followed by biotreatment is the technology selected by the Department of Defense to destroy the Pueblo chemical weapons stockpile.



The Bechtel Pueblo Team (BPT) is a partnership of Bechtel National, Inc., URS, Parsons, and Battelle Memorial Institute. The BPT functions as the systems contractor selected to design, build, systemize, pilot test, operate, and close the PCAPP.



# Staffing



- Bechtel Pueblo Team non-manual: **858**
  - Pueblo County local hires: 200
  - Colorado hires (outside Pueblo County): 38
  - From other locations: 620
  
- Construction Workers: **135**
  - Bechtel direct-hire craft workers: 66
  - Subcontractor personnel: 69



# Employment Opportunities



## Hotline

(719)549-4003

## Website

<http://pueblo.bechtel.com>

As of Jan. 31, 2014,  
PCAPP staff  
accomplished:

**645**

Safe Work Days\*

**3,484,685**

Safe Work Hours



\* Last Lost Time occurred on April 26, 2012

## Step 1



### Removal of Energetics

Robotic equipment removes energetics (explosives) from the weapon. The energetics will be disposed of at a permitted facility offsite.

## Step 2



### Removal of Mustard Agent

The inside of the weapon is remotely accessed and mustard agent is washed out with high-pressure water.

## Step 3



### Neutralization of Mustard Agent

The mustard agent is neutralized with caustic solution and hot water. The byproduct is called hydrolysate.

## Step 4



### Biotreatment

Microbes treat the hydrolysate, breaking it down into brine. The brine is separated with water being recycled back to the plant and salt cakes shipped for disposal at a permitted facility.

## Step 5



### Thermal Treatment and Disposal of Metal Parts

Metal Parts are heated to 1,000 degrees Fahrenheit for 15 minutes and can then be recycled.

**Neutralization followed by biotreatment will be used to destroy the Colorado chemical weapons stockpile.**

# Explosive Destruction System



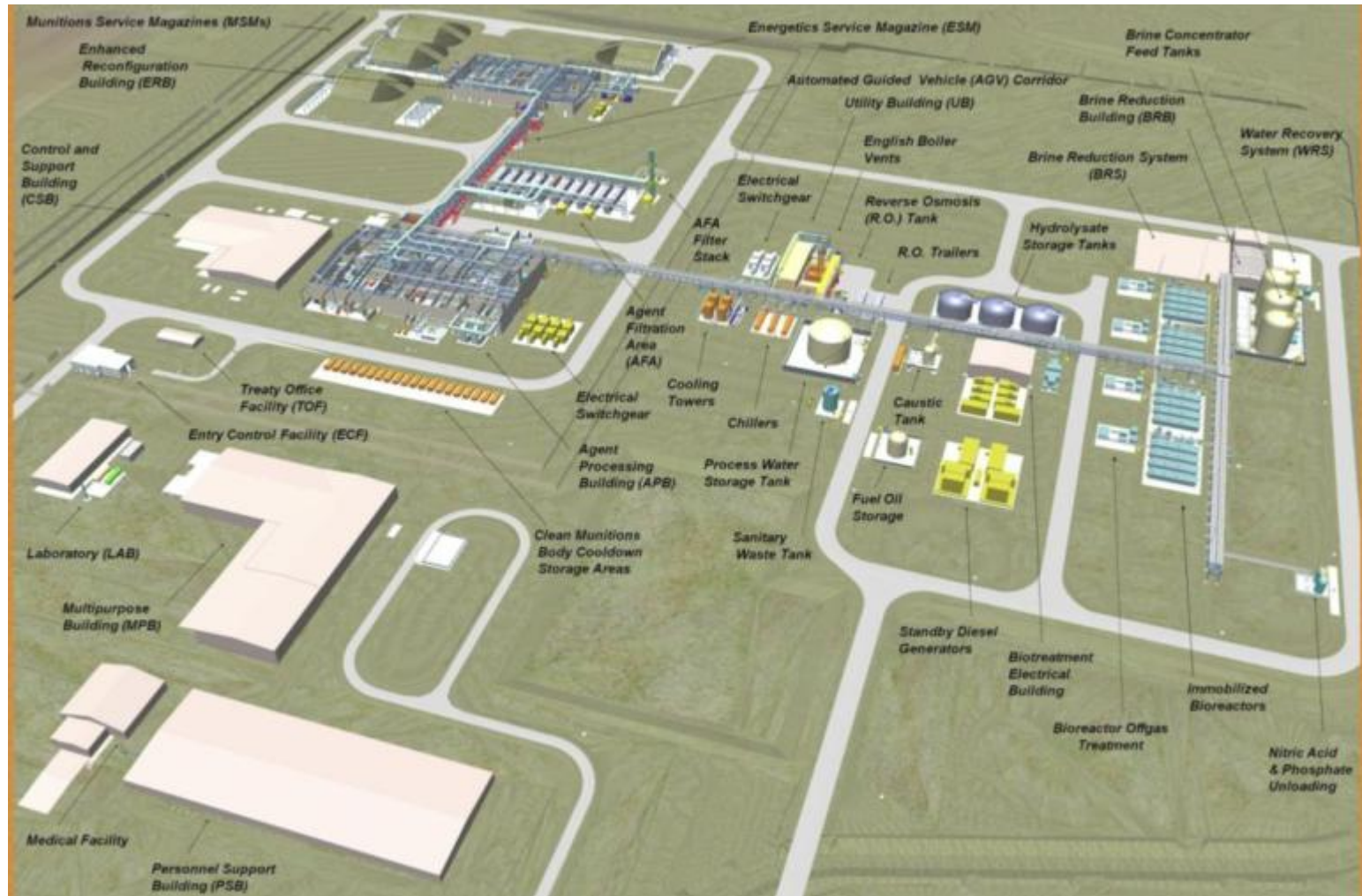
- The Army's Explosive Destruction System (EDS) will augment the Pueblo pilot plant's automated destruction technology
- EDS will be used to destroy problematic munitions that are unsuited for automated processing

- EDS uses explosive “cutting” charges to access the chemical agent inside a munition; neutralization chemicals are then added to destroy the chemical agent





# Pueblo Chemical Agent-Destruction Pilot Plant—Site Plan





# PCAPP Site Overview



Northwestern Corner - Observation Point

- |          |  |          |  |
|----------|--|----------|--|
| <b>1</b> | <b>Enhanced Reconfiguration Building</b> | <b>5</b> | <b>Agent Filtration Area</b>               |
| <b>2</b> | <b>Automated Guided Vehicle Corridor</b> | <b>6</b> | <b>Munitions Service Magazine</b>          |
| <b>3</b> | <b>Agent Processing Building</b>         | <b>7</b> | <b>Control and Support Building</b>        |
| <b>4</b> | <b>Biotreatment Area</b>                 | <b>8</b> | <b>Munitions Service Magazine Corridor</b> |

## As the project transitions from construction to systemization, the following systems have been turned over to the start-up group to begin the systemization process:

- Agent Collection and Neutralization System—Hydrolysate Collection and Storage—Yard
- Breathing Air—A & B Compressor/Purifier Packages, Receiver and Chiller, Bottle Filling Station, Supply and Change Stations
- Enhanced Reconfiguration Building (ERB) HVAC: Supply Air Handling Units/Control Room and Support Areas Ventilation System; ERB Cascade Ventilation System; Electrical Room Ventilation System
- Steam Supply—Fuel Oil Piping, Natural Gas Piping, Amine Feed Skid, Boilers A & B and Outside Rack Steam; Agent Processing Building (APB)/Biotreatment Area (BTA)/Brine Reduction System (BRS) Distribution
- Bulk Chemical Storage and Distribution—DAP, UREA and 25% caustic
- Projectile Handling and Projectile Disassembly—Projectile Mortar Disassembly systems and Related Equipment—Lines 1, 2, and 3; Munitions/Parts Monitoring
- Chilled Water—Chillers, Distribution to various HVAC units, recirculation units, autoclave and Off-Gas Treatment scrubber
- Immobilized Cell Bioreactor (ICB) Feed, Biotreatment, ICB Blower and Off Gas Treatment—Modules 1/2/3/4, Biotreatment Electrical Building
- Process Cooling Water—pumps, tanks, chemical feed skids, cooling towers, BRS Distribution
- Brine Reduction System (BRS)—Brine Concentrator Feed (BCF) Tanks “A”, “B”, and “C” and BCF Tanks Off-Gas Treatment; Brine Reduction Belt Feed System, BRS Filter Press Building, all BRS Electrical Systems



To learn more about Systemization, watch the video at [http://www.peoacw.a.army.mil/info/video/systemization\\_yt.html](http://www.peoacw.a.army.mil/info/video/systemization_yt.html)

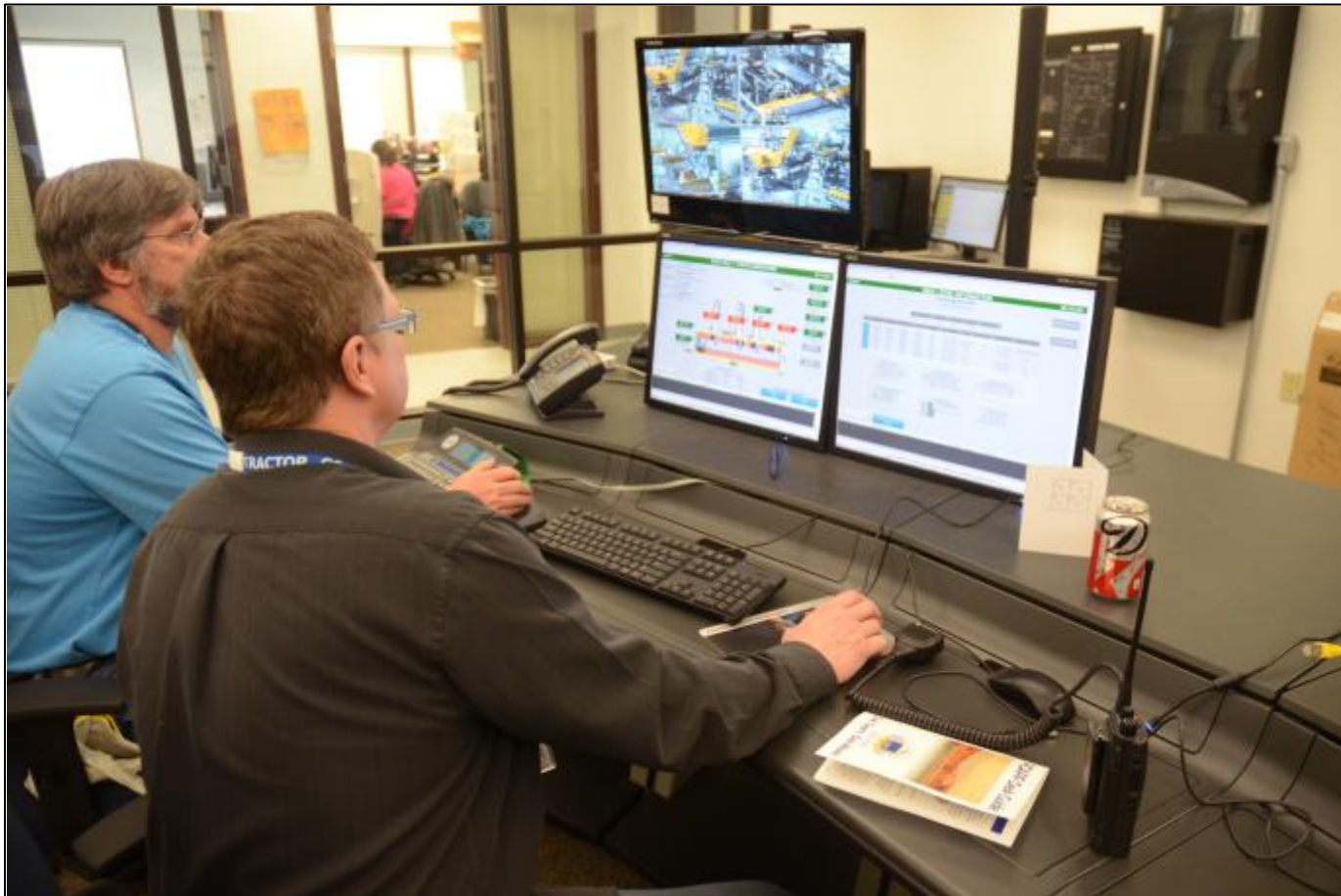
# Systemization (cont.)

- APB—Munitions Washout System (MWS) Instrument Air Distribution; Process Water Distribution; Hydraulic Power Line 1 & 2; Hot Process Water Tank and Heating Coil; MWS High Pressure Water Supply and Distribution; MWS Drain, Wash and Collection Line 1 & 2; Off-Gas Treatment System; MWS Agent Wash Water Transfer; APB Fire Protection Systems
- APB Decon Storage (SDS) Holding Tanks and Feed Pumps; SDS "A" Sumps; SDS "B" pumps; SDS "C" Pumps
- Munitions Treatment Units #1 and #2; Muniton Body Storage Building—Gravity Conveyors
- APB HVAC: Supply Air Handling Units, Battery Room Ventilation System; Cascade Ventilation System, Operator Work Station Ventilation System, Recirculation Units, Unit Heaters and Ventilators; Electrical Room Ventilation System; Entry Support Area Ventilation System; Electrical Room Ventilation System; Entry Support Area Ventilation System
- Agent Monitoring: Agent Filtration Area; Laboratory, APB, Automated Guided Vehicle (AGV) corridor, ERB
- Facilities: Control Support Building; Medical Building; Laboratory; Utility Building, APB, ERB, AGV corridor, Entry Control Facility, Brine Reduction Filter Building (BRB), Biotreatment Electrical Building
- APB Agent Collection and Neutralization System— Agent Collection; Agent Neutralization; Hydrolysate Collection and Sampling Systems
- Site Security Diesel Generator
- Secondary Waste Treatment: Secondary Decontamination Unit System & Autoclave
- Residue Handling System
- Site Security Essential Power
- Site Grounding System
- Closed Circuit TV (CCTV): APB, ERB, Yard, BTA
- AGVs with maintenance charge





# Control Room



**Control Room workers remotely control the robots in the Explosion Containment Room of the Enhanced Reconfiguration Building. This is a milestone reflecting all the successful systemization activities that were involved in making this happen.**

# Enhanced Reconfiguration Building



In an Explosion Containment Room, a PCAPP worker, with the help of a lift assist, loads an ACWA Test Equipment munition onto the conveyor. From there, Control room operators take over remotely.

# Biotreatment Area



**Workers install insulation on the Distillate Carbon Filter tanks at the Brine Reduction System (BRS). The BRS will be used to distill the water from the salts and bio solids. The distilled water is then filtered and recycled back into the plant as process water.**



# Steam Blow Testing



**A cloud of steam escapes the exhauster during steam blow testing. The testing is performed to clear the system piping.**

# Contact Information



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