

Pueblo Chemical Agent-Destruction Pilot Plant

Monthly Status Briefing

January 2012



PCAPP

Pueblo Chemical Agent-Destruction Pilot Plant

A PARTNERSHIP FOR SAFE CHEMICAL WEAPONS DESTRUCTION

Project Background

- 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 Program Manager, 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.
- 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.



Bechtel Pueblo Team

Systems Contractor

- Project management
- Business services
- Safety and quality



- Design/engineering
- Procurement/subcontracting
- Construction

Teaming Subcontractors



- Systemization
- Pilot testing
- Operations
- Closure



- Process design
- Process equipment fabrication
- Support to systemization and operations



- Environmental permitting and compliance
- Laboratory management
- Pilot testing

Staffing

- Bechtel Pueblo Team non-manual: **581**
 - Pueblo: 576 (169 local hires)
 - Other locations: 5
- Construction Workers: **754**
 - Bechtel direct-hire craft workers: 576
 - Subcontractor personnel: 178



Employment Opportunities

Hotline

(719)549-4003

Website

<http://pueblo.bechtel.com>



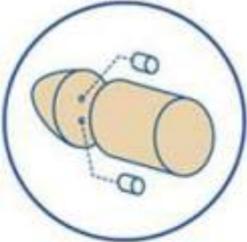
As of December 31, 2011,
PCAPP Project staff accomplished:

- 304 Safe Work Days
- 1,997,183 Safe Work Hours



Destruction Technology

Step 1



REMOVAL OF ENERGETICS

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

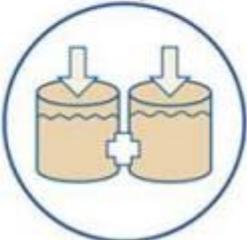
Step 2



REMOVAL OF MUSTARD AGENT

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

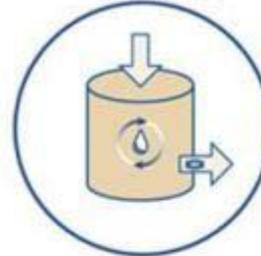
Step 3



NEUTRALIZATION OF MUSTARD AGENT

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

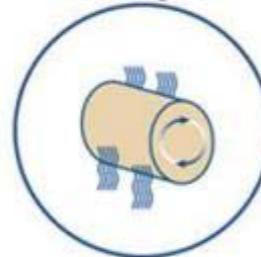
Step 4



BIOTREATMENT

The hydrolysate is treated with microbes that break down the solution into water and biosludge. Water is recycled in the plant, and biosludge is shipped for disposal at a permitted facility.

Step 5

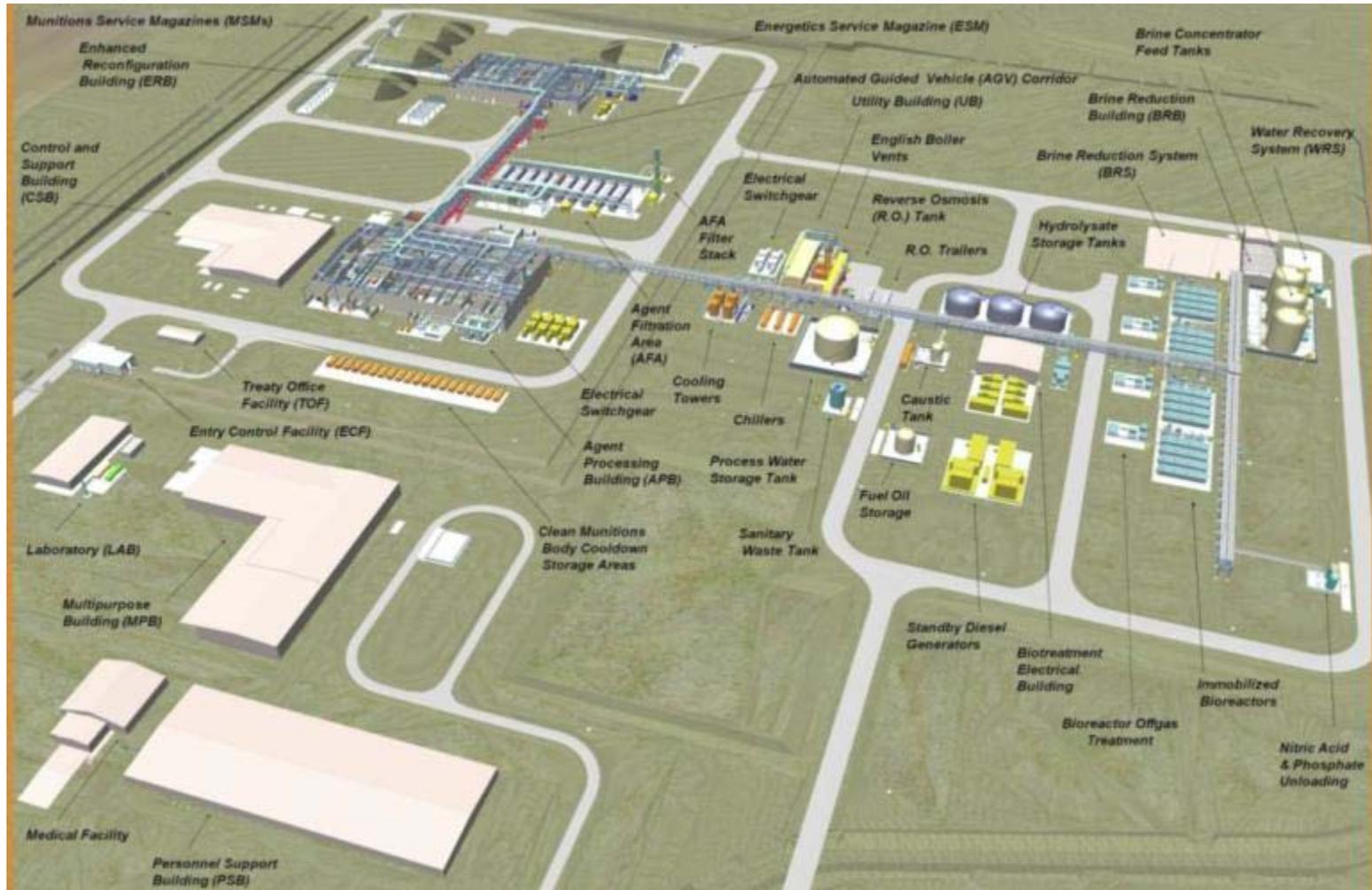


DISPOSAL OF METAL PARTS

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.

Pueblo Chemical Agent-Destruction Pilot Plant—Site Plan



PCAPP Site Overview



Northwestern Corner - Observation Point

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



Construction Status – In Progress

- **Enhanced Reconfiguration Building**— electrical conduit, cable & wire pulling, equipment setting at 85% complete. Electrical terminations were completed January 17 to support system and facility turnover milestones.
- **Agent Processing Building**— electrical conduit, cable and wire pulling, process piping, electrical and mechanical equipment setting at 85% complete.
- **Balance of Facilities**—cable raceway, underground duct banks, pipe rack piping and supports, various mechanical equipment setting at 93% complete.
- **Control and Support Building**— In process of being turned over to PCAPP Facility Management for beneficial occupancy.
- **Medical Facility**— Facility turnover to systemization is complete. Turned over to PCAPP Facility Management for beneficial occupancy. Decontamination room mechanical and electrical work in progress.
- **Brine Reduction System**—Installation of vendor-supplied piping and instrumentation at 30% complete.
- **Immobilized Cell Bioreactors**—electrical and piping bulk installation at 95% complete. Poly urea specialty coatings mock up in process.
- **Filter Press Building**— building exterior is complete; installation of overhead doors, electrical and piping commodities at 75% complete.



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:

- Utility Building 480V Substation
- Agent Processing Building (APB) 480V substation
- APB essential motor control center power
- Control and Support Building essential motor control center power
- Agent Filtration Area (AFA) instrument air
- AFA plant air
- Utility Building essential motor control center power
- BTA Essential motor control center
- Control and Support Building (CSB) Non-Essential power panels
- NETA (International Electrical Testing Association) testing for power calibration
- 13.2 kV Switchgear
- HVAC exhaust filter units 07 thru 16, common ductwork, and stack
- Agent Filtration Area
- Plant Air System—Enhanced Reconfiguration Building (ERB) Distribution
- Standby diesel generator 1A and 1B



To learn more about Systemization, watch the video at http://www.pmacwa.army.mil/info/video/systemization_yt.html



Systemization (cont.)

- ERB 480V Substation
- 2 ERB Critical Power Panels
- CSB Facility Protection Controller
- AFA Facility Protection Controller
- HVAC Hot Water Distribution to APB
- 2 ERB Critical Power Panels
- Biotreatment Electrical Building (BEB) facility protection controller
- ERB facility protection controller
- APB facility protection controller
- APB supply air handlers chilled water
- Permanent plant power underground fire water valves
- Process water storage tank and pumps, outside rack piping
- **Medical Building***
- **Utility Building Facility Protection Controller***
- **APB Uninterruptible Power Supply***
- **Instrument Air—IA Compressor “A,” Dryer “A,” Main Air Receiver and Yard Distribution Piping***
- **Instrument Air—IA Compressor “B” and Dryer “B”***
- **BEB Utilities Redundant Facility Control System (FCS) Controller***
- **BTA Uninterruptible Power Supply***
- **ERB Redundant FCS Controller***



*Newly added

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Agent Processing Building



Now installed in the Agent Processing Building is the robot that will pick up agent-filled munitions during the munitions washout process.

Enhanced Reconfiguration Building



Workers put together a Reconfiguration Room Transfer Conveyor. The Reconfiguration Room Lift Assist is located on the left. Boxed munitions will be baseline configured by these systems.

Biotreatment Area



Off-gas Treatment System Carbon Filters (left) remove odor-causing compounds and organics from the Brine Reduction System exhaust gas before being released to the atmosphere.



Perchlorate Chemical Agent
Destruction Plant Plant



Fire Water Pump Test



In January, U.S. Pueblo Chemical Depot Fire Chief Wes Huntley (center) visited the PCAPP site to look at the Compensatory Fire Water Supply System.



Contact Information



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U.S. Army Element, Assembled
Chemical Weapons Alternatives



Pueblo Chemical Agent
Destruction Plant Facility

