



Pueblo Chemical Agent-Destruction Pilot Plant

Monthly Status Briefing

February 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: **577**
 - Pueblo: 573 (167 local hires)
 - Other locations: 4
- Construction Workers: **835**
 - Bechtel direct-hire craft workers: 647
 - Subcontractor personnel: 188



Employment Opportunities

Hotline

(719)549-4003

Website

<http://pueblo.bechtel.com>



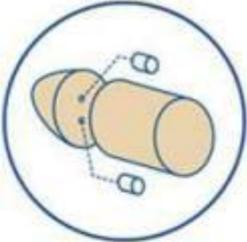
As of January 31, 2012,
PCAPP Project staff accomplished:

- 335 Safe Work Days
- 2,200,054 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.

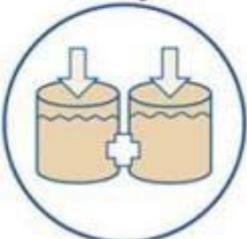
Step 2



REMOVAL OF MUSTARD AGENT

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

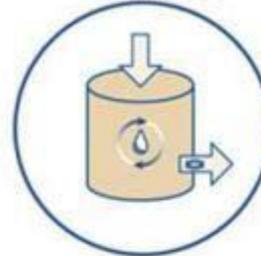
Step 3



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

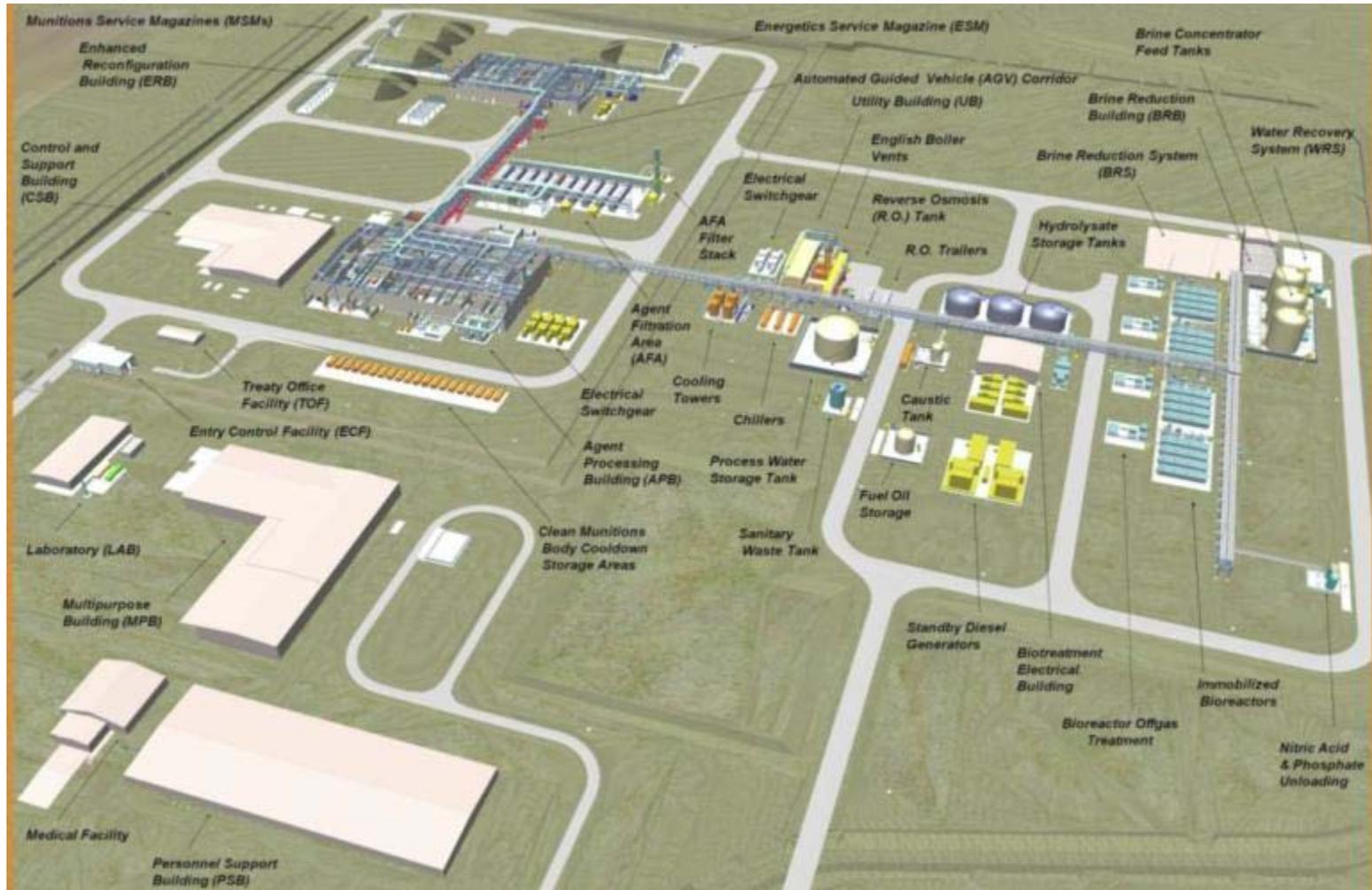


DISPOSAL OF METAL PARTS

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 (not shown) |
| 4 | Biotreatment Area | 8 | Munitions Service Magazine corridor |



Perforated Chemical Agent
Destruction Plant Plant



Construction Status – In Progress

- **Enhanced Reconfiguration Building**— Completed work activities associated to system and facility turnover. Initiating energetics equipment installation.
- **Agent Processing Building**— electrical conduit, cable and wire pulling at 55% complete, process piping, electrical and mechanical equipment setting at 90% complete.
- **Balance of Facilities**—cable raceway, pipe rack piping and supports, various mechanical equipment setting at 94% complete.
- **Control and Support Building**— turnover of facility to PCAPP Facility Management for beneficial occupancy has been completed; performing commissioning activities.
- **Immobilized Cell Bioreactors**—electrical and piping bulk installation complete. Final piping pressure testing is in progress. Poly urea specialty coatings MOCK 2 in process.
- **Medical Facility**—Decontamination room mechanical and electrical work, 50% complete.
- **Brine Reduction System**—Installation of vendor-supplied piping, supports and instrumentation at 35% complete.
- **Filter Press Building**— installation of overhead doors are complete, electrical and piping commodities at 80% 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
- Agent Filtration Area (AFA) instrument air
- AFA plant air
- Biotreatment Area (BTA) Essential motor control center
- 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
- ERB 480V Substation
- 2 ERB Critical Power Panels
- HVAC Hot Water Distribution to APB
- ERB facility protection controller
- APB facility protection controller
- APB supply air handlers chilled water
- Medical Building



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



Systemization (cont.)

- 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”
- Biotreatment Electrical Building Utilities Redundant Facility Control System (FCS) Controller
- BTA Uninterruptible Power Supply
- ERB Redundant FCS Controller
- Plant Air Compressors, Dryers, Main Air Receiver and Yard Distribution Piping*
- Utility Building Redundant FCS Controller*
- APB Redundant FCS Controller*
- Control and Support Building (CSB) Control Room Equipment and CSB Redundant FCS Controller*
- AFA Redundant FCS Controller*
- Lab Redundant FCS Controller*
- Lab Facility Protection Controller*
- Potable Water—Bulk Chemical Storage Area*
- Potable Water—Water Utility Drops*
- 4 BTA essential motor control centers*
- Control and Support Building*
- Maintenance Building (Maintenance Area of CSB)*



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

*Newly added

Enhanced Reconfiguration Building



On January 21, the Enhanced Reconfiguration Building was declared “mechanically complete,” reaching another PCAPP milestone. Pictured here is the night crew who worked many months, along with their day shift counterparts, to accomplish this.

Agent Processing Building



Complex piping is visible from the neutralization bay inside the Agent Processing Building.

Biotreatment Area



Three Brine Reduction System (BRS) distillate carbon filters stand out in the Biotreatment Area. The BRS system will be instrumental in recovering the water that will be recycled for reuse throughout the plant.

Brine Reduction System



Bechtel millwrights adjust the drive belt on the fan for the Brine Reduction System. The fan will pull the off-gas through the carbon filters.

Contact Information



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U.S. Army Element, Assembled
Chemical Weapons Alternatives

