

Pueblo Chemical Agent-Destruction Pilot Plant

Monthly Status Briefing

November 2011



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: **586**
 - Pueblo: 578 (180 local hires)
 - Other locations: 8
- Construction Workers: **840**
 - Bechtel direct-hire craft workers: 666
 - Subcontractor personnel: 174



Employment Opportunities

Hotline

(719)549-4003

Website

<http://pueblo.bechtel.com>



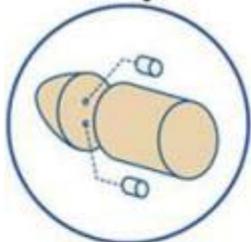
As of October 2011,
PCAPP Project staff accomplished:

- 243 Safe Work Days
- 1,515,851 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.

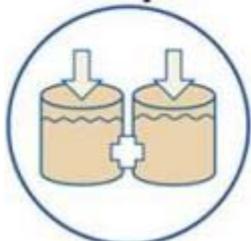
Step 2



REMOVAL OF MUSTARD AGENT

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

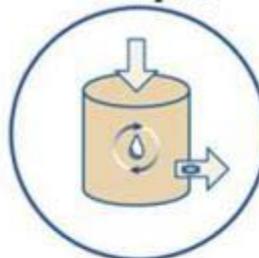
Step 3



NEUTRALIZATION OF MUSTARD AGENT

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

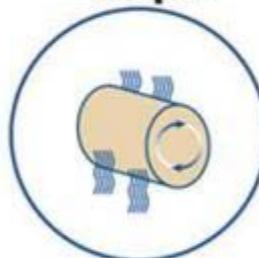
Step 4



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

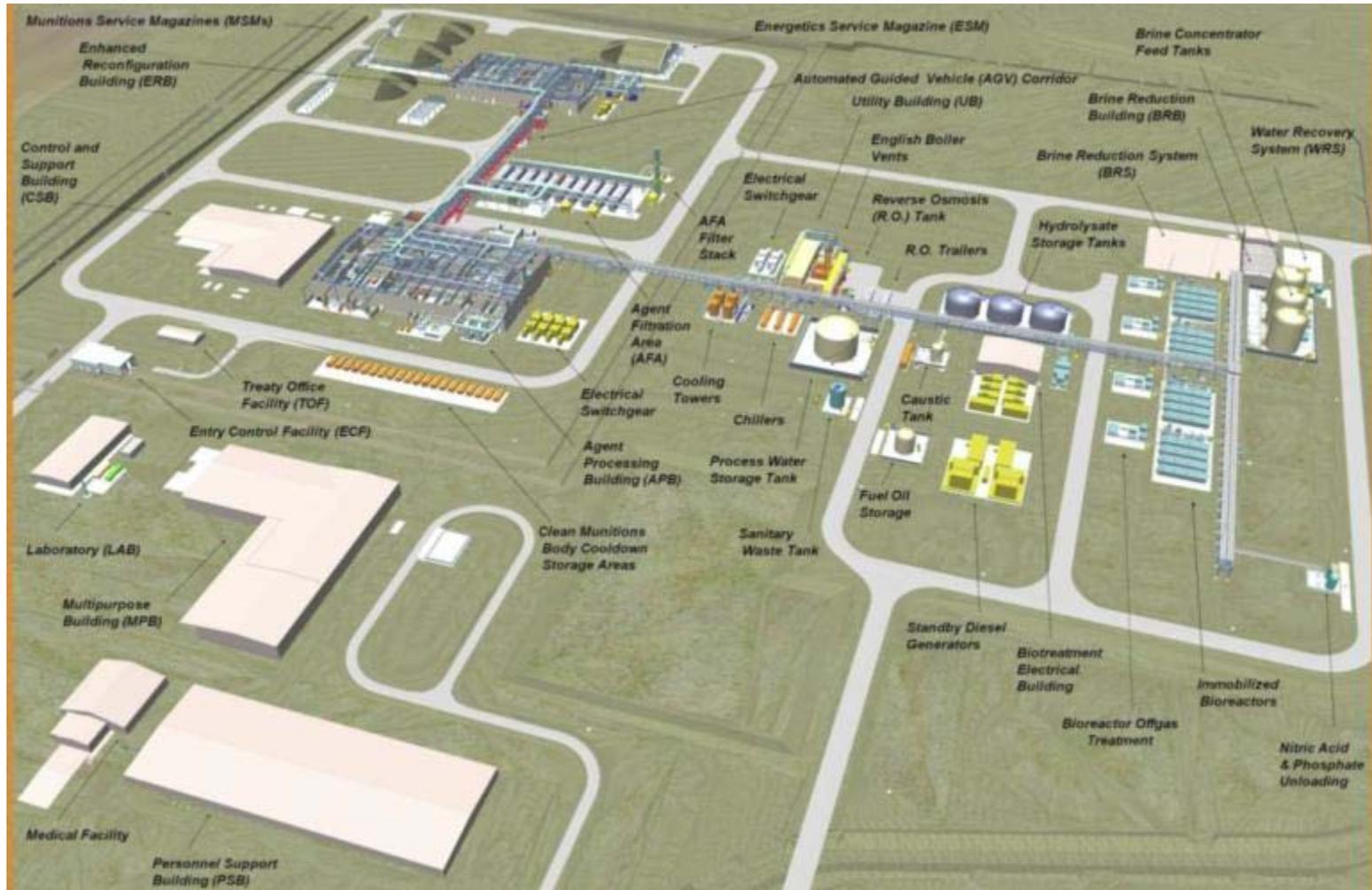


DISPOSAL OF METAL PARTS

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 and terminations, installation of robotics and conveyors in the explosion and vapor containment rooms
- **Agent Processing Building**— electrical conduit, cable and wire pulling, process piping, electrical and mechanical equipment setting
- **Balance of Facilities**—cable raceway, underground duct banks, pipe rack piping and supports, various mechanical equipment setting; final site grading is complete
- **Control and Support Building**— completing facility control/power system testing, including prep for beneficial occupancy in November
- **Medical Facility**— completing final permanent power terminations and exterior final grading; starting furniture installation to support beneficial occupancy in November
- **Brine Reduction System**—platform steel, tank/vessels placement and specialty coatings are complete; installing vendor supplied piping and instrumentation
- **Immobilized Cell Bioreactors**—electrical and piping bulk installation and equipment insulation
- **Filter Press Building**— building installation complete; starting mechanical, electrical and piping commodities



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 Non-Essential motor control center power
- 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
- AFA critical power panels monitoring houses
- Control and Support Building (CSB) Non-Essential power panels
- NETA (International Electrical Testing Association) testing for power calibration
- 13.2 kV Switchgear
- Utility Building Critical power panels
- BTA Critical power panels
- CSB Critical power panels



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



Systemization (cont.)

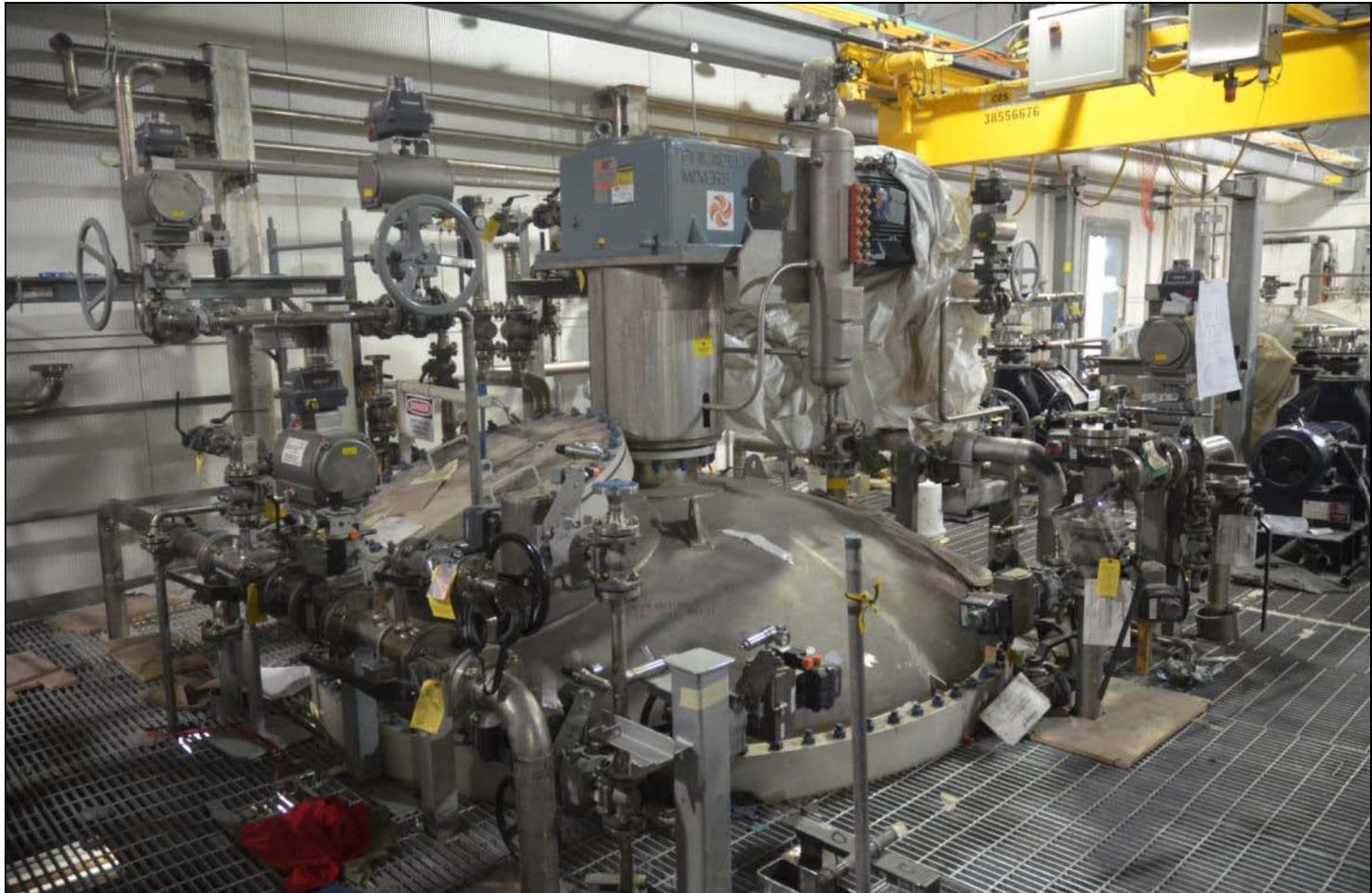
- APB Critical Power Panels
- HVAC exhaust filter units 07 thru 16, common ductwork, and stack
- BTA 480V Substations
- Agent Filtration Area (facility)
- Plant Air System—Enhanced Reconfiguration Building (ERB) Distribution
- Site Water: Existing potable water pumps and tie-ins
- Existing Potable water pumps and tie-ins
- 2 ERB Non-essential Motor Control Centers (MCC's)
- 2 ERB Essential MCC's
- 1 BTA Non-essential MCC's
- 1 BTA Essential MCC's
- Standby diesel generator 1A
- Standby diesel generator 1B*
- ERB 480V Substation*
- 2 ERB Critical Power Panels*
- CSB Facility Protection Controller*
- AFA Facility Protection Controller*
- HVAC Hot Water Distribution to APB*



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*Newly added

Agent Processing Building



Taken from the upper level processing room, this photo shows one of the agent reactor tanks. The motor, visible on top, will turn the agitators inside the tank.

Pipe Rack



The pipe rack now encases the Immobilized Cell Bioreactors (left). In the distance, the Brine Reduction System evaporator can be seen.



Biotreatment Area



The Brine Reduction System includes an evaporator (tall tower) and filter press steelwork on the right.



FEMA/Army VIP Tour



Bechtel Pueblo Team Project Manager Doug Omichinski (right) gives a tour of the PCAPP site on Nov. 3 to members of the Federal Emergency Management Agency, Colorado Division of Emergency Management, and the local emergency services bureau.



Contact Information



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