

Monthly Status Briefing

April 2014



Blue Grass Chemical Agent-Destruction Pilot Plant



Program Executive Office
Assembled Chemical Weapons Alternatives



BGCAPP

Blue Grass Chemical
Agent-Destruction Pilot Plant

www.peoacwa.army.mil



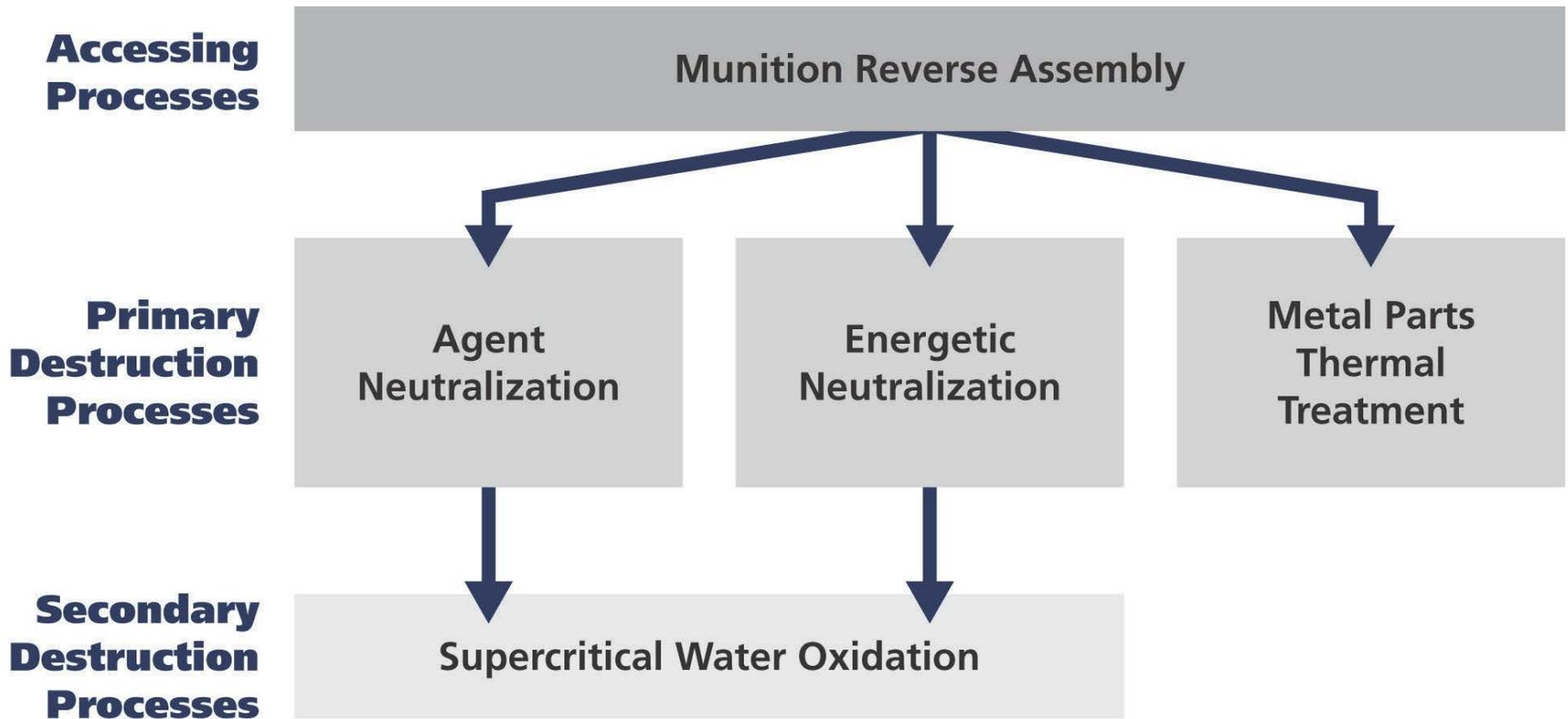
A PARTNERSHIP FOR SAFE CHEMICAL WEAPONS DESTRUCTION

Project Background

- The Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) will safely destroy 523 tons of chemical agent in rockets and artillery projectiles stored at the Blue Grass Army Depot in Richmond, Ky.
- The main plant technology selected by the Department of Defense to destroy the Blue Grass VX and GB (Sarin) nerve agent weapons stockpile is neutralization followed by supercritical water oxidation (SCWO).
- The technology selected by the Department of Defense to destroy the Blue Grass mustard (H) agent weapons stockpile is Explosive Destruction Technology.
- The Program Executive Office, Assembled Chemical Weapons Alternatives (PEO ACWA) Program, headquartered at Aberdeen Proving Ground, Md., is responsible for managing all aspects of the safe and environmentally sound destruction of the chemical weapons stockpiles in both Kentucky and Colorado.
- The Bechtel Parsons Blue Grass Team, a joint venture of Bechtel National, Inc., and Parsons Government Services Inc., along with teaming partners URS Corporation, Battelle, General Atomics and GP Strategies Corporation, is the systems contractor selected to design, build, systemize, pilot test, operate and close BGCAPP.

Main Plant Destruction Technology

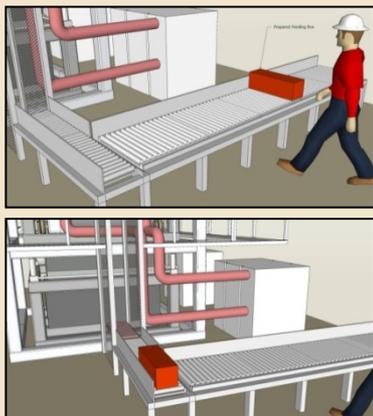
Neutralization followed by supercritical water oxidation will be used to destroy the nerve agent weapons stockpile.



Explosive Destruction Technology Static Detonation Chamber (SDC)

SDC will be used to destroy the mustard agent weapons stockpile.

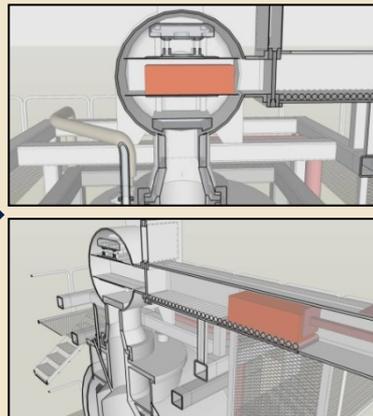
Step 1



Workers place mustard projectiles in feed tray with aid of material-handling equipment

System allows for single handling of projectiles by workers

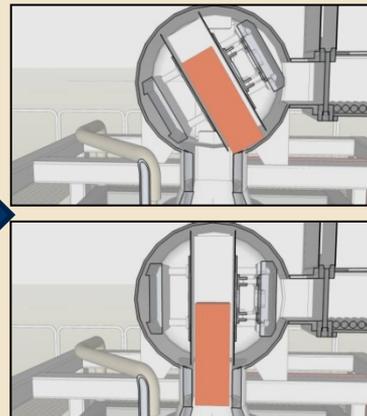
Step 2



Projectiles conveyed to top of vessel

For added safety, it is a fully automatic, double air-lock feeding conveyor system

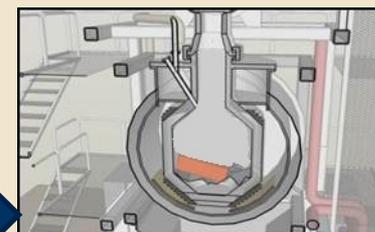
Step 3



Projectiles fed into electrically heated detonation chamber

Chamber temperature maintained above critical temperature of energetics inside the projectiles

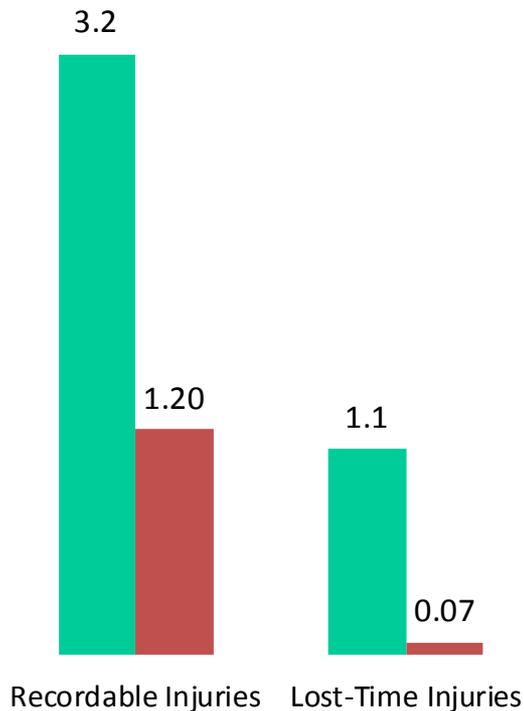
Step 4



High heat detonate/deflagrate projectiles, mustard agent and energetics destroyed by explosion/thermal decomposition

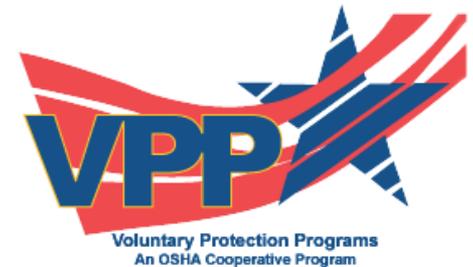
Off-gases treated by air pollution control system

Safety



- Safety remains a core value of the project workforce
- Occupational Safety and Health Administration Voluntary Protection Program Star Status site
- Lost-time injury rate is **94 percent lower** and recordable injury rate is **63 percent lower** than industry average
- As of March 31, 2014, the project has completed 1,617,487 hours and 200 days without a lost-time accident

■ Construction Industry
■ Bechtel Parsons
(12-month rolling rate)
Accidents per 200,000 job hours



Current Project Staffing

- **Total project employment—1,443**
- **Richmond, Ky.—1,436**
 - Nonmanual—738
 - Craft—698
 - Local hires—57 percent
- **Other locations—7**
 - San Diego, Calif.
 - Columbus, Ohio
 - Reston, Va.

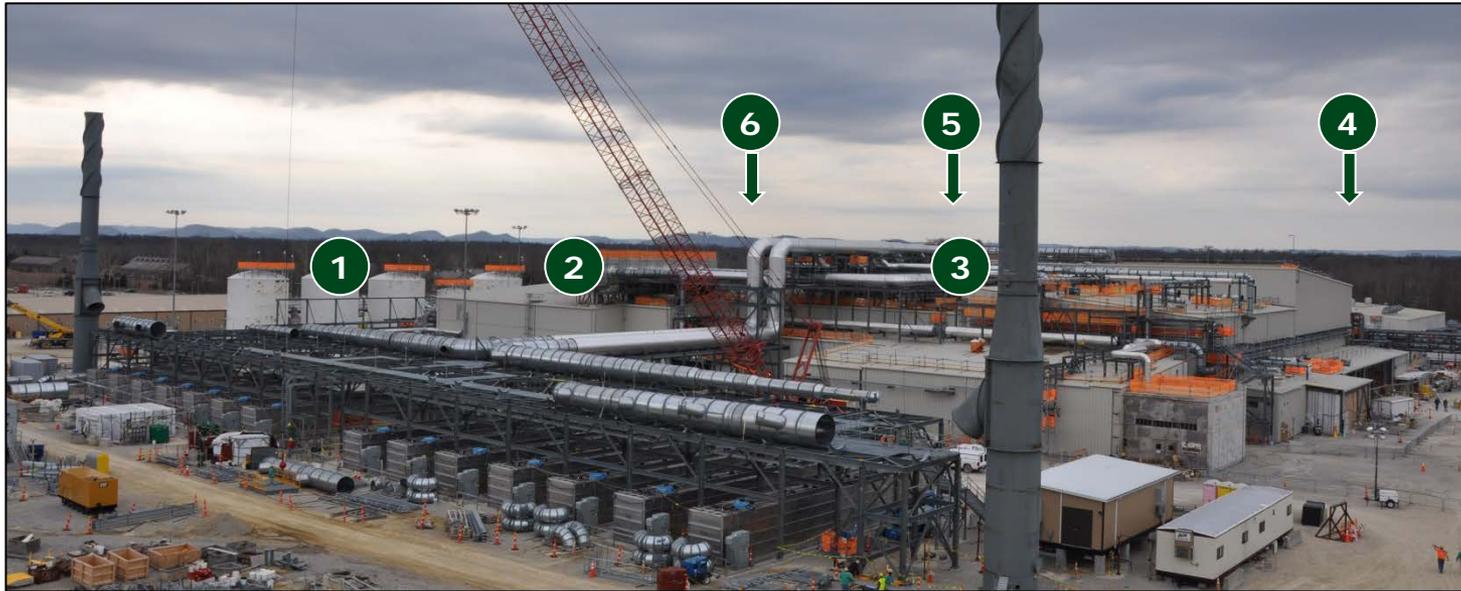


The BGCAPP workforce includes 698 local union building & construction trades craft workers.

Economic Impact

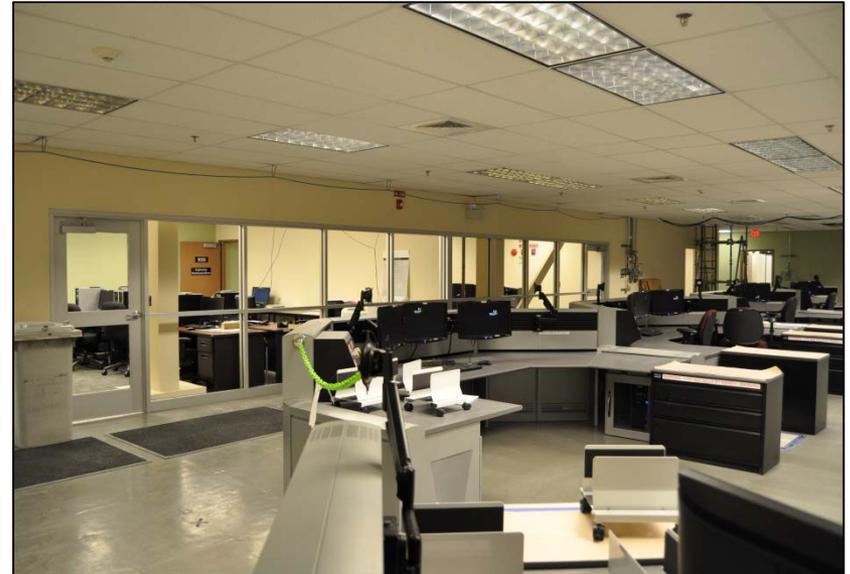
- **Acquisitions to date**
 - \$124.1 million spent with Kentucky companies
 - \$71.4 million spent in Madison and surrounding counties
- **Payroll to date**
(includes nonmanual and craft)
 - \$557 million of local payroll paid

Main Plant Work in Progress



- 1 Hydrolysate Storage Area**
 - Exterior tank painting and stairway lighting
- 2 Control and Support Building (CSB)**
 - Facility Control System electrical wiring
 - Systemization beneficial occupancy complete
- 3 Munitions Demilitarization Building (MDB)**
 - Heating, ventilation and air conditioning duct work, electrical, piping, mechanical systems
 - Fire detection and fire protection systems
- 4 Utility Building (UB)**
 - Exterior support systems infrastructure
 - Internal UB systems in systemization phase
- 5 Supercritical Water Oxidation (SCWO) Process Building** (not visible in photo)
 - Piping systems and interior walls
 - Fire detection and protection systems
- 6 Laboratory Building** (not visible in photo)
 - Systemization complete, personnel occupancy

Control and Support Building (CSB)



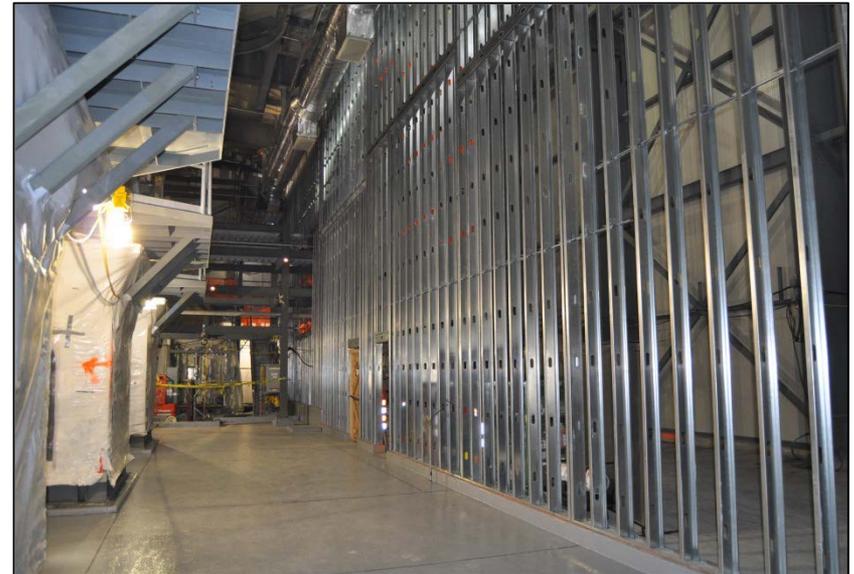
Glass windows and doors are installed inside CSB control room offices. During main pilot plant operations, the CSB houses the control room and the integrated control system used to operate the plant.

Munitions Demilitarization Building (MDB)



Electricians (above left) safely fasten cable tray to MDB filter area support steel. During plant operations, the MDB's negative air pressure system called cascading ventilation, draws fresh air into the building. The air returns to the atmosphere only after it passes through a series of carbon filter units that scrub the air as it passes through. An ironworker (above right) welds inside an MDB explosive containment vestibule. The MDB is where the chemical weapons will be disassembled, the explosives removed and the agent neutralized.

Supercritical Water Oxidation (SCWO) Process Building and Hydrolysate Storage Area (HSA)



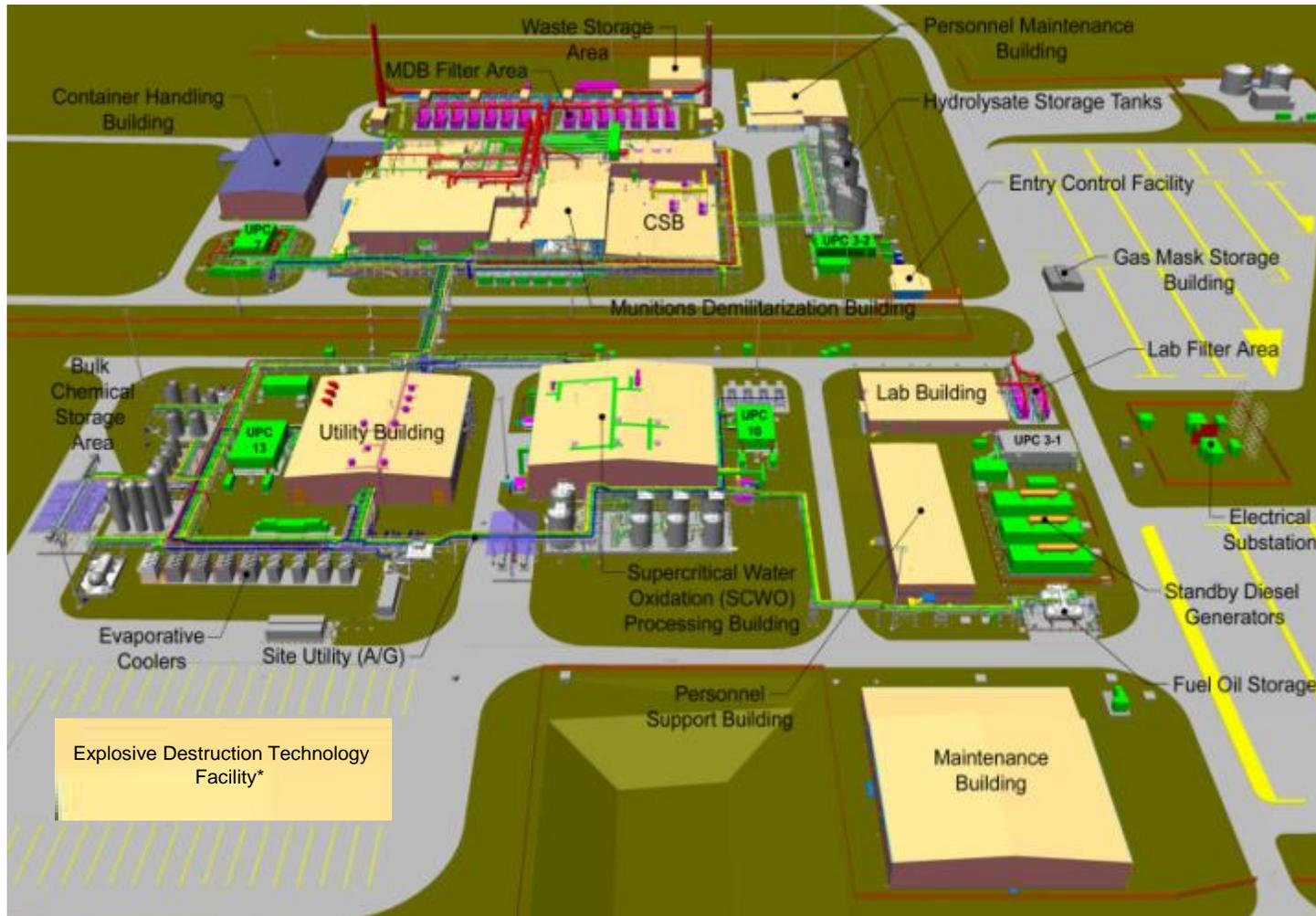
HSA tank exterior coatings are nearing completion and stairway lighting installation is underway (above left). At the SCWO Process Building, interior wall framing (above right) outlines the future SCWO Process Building control room. During operations, agent and energetic hydrolysates, byproducts of the neutralization process, are emptied into HSA holding tanks once agent destruction is verified. The hydrolysate is transferred to the SCWO Process Building which houses the reactors where agent and energetic hydrolysates will be subjected to very high temperatures and pressures to destroy their organic content.

Utility Building (UB)



Construction and Systemization team members (above left) recently turned over fully constructed UB boilers to begin the systemization and testing phase. Elsewhere in the UB, green tags (above right) signify building components are ready for systemization and testing. The Utility Building houses equipment to produce steam, compressed air, chilled water and hot water for operations.

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* Design under development