Monthly Status Briefing

February 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

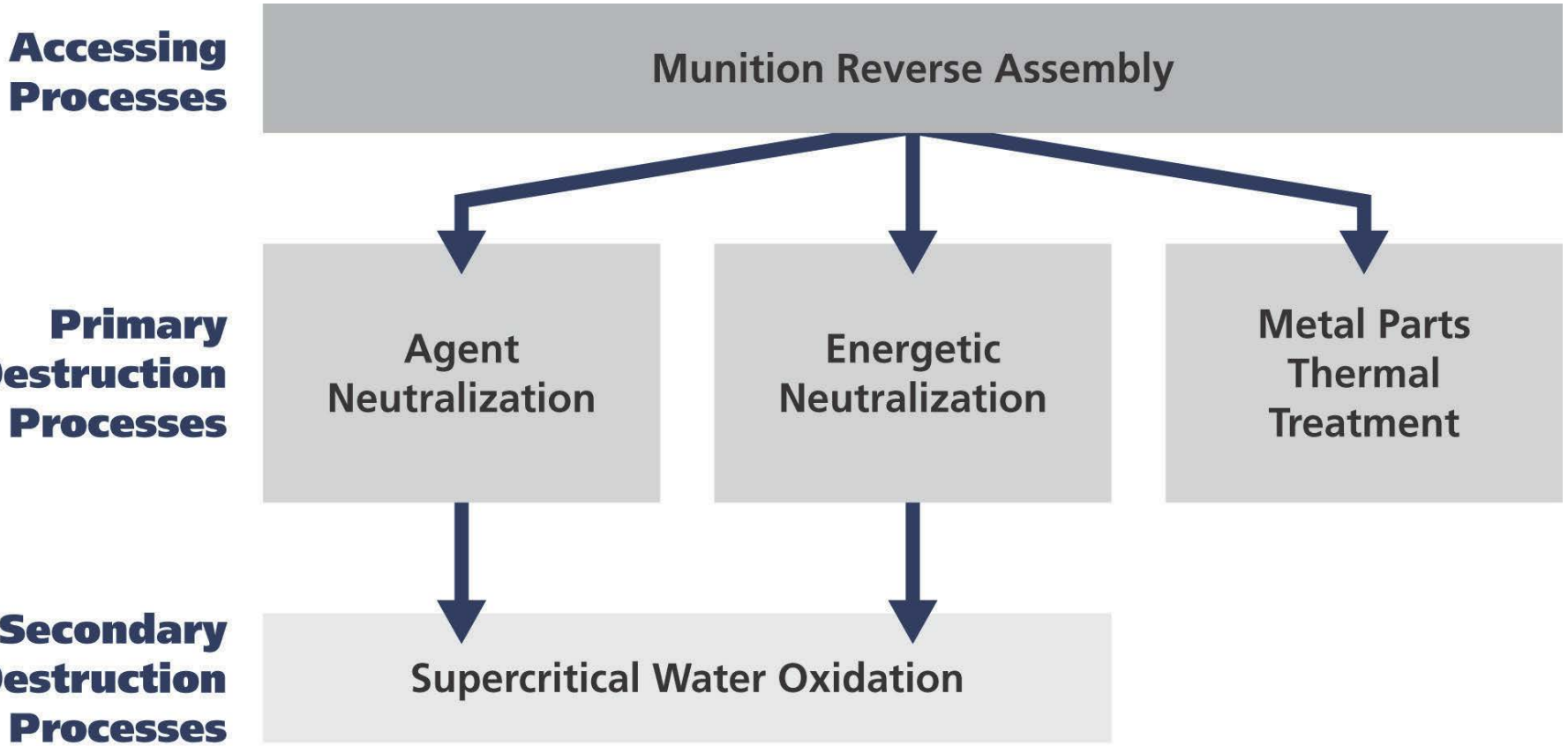
A Partnership for Safe Chemical Weapons Destruction

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

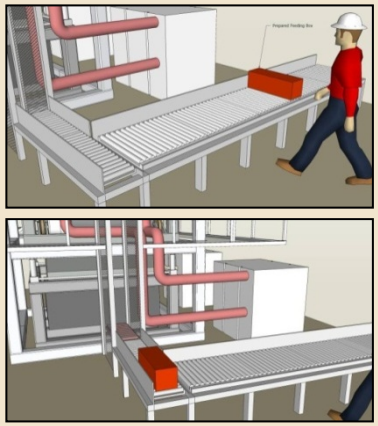
Neutralization followed by supercritical water oxidation will be used to destroy the nerve agent weapons stockpile.



Explosive Destruction Technology
Static Detonation Chamber (SDC)

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

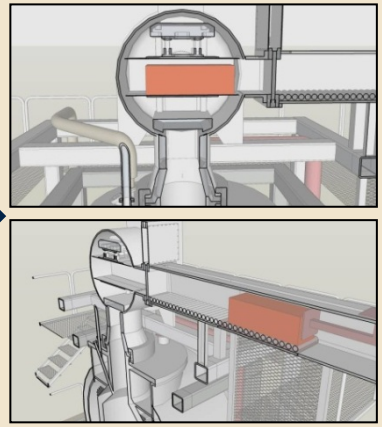
Step 1



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

System allows for single handling of projectiles by workers

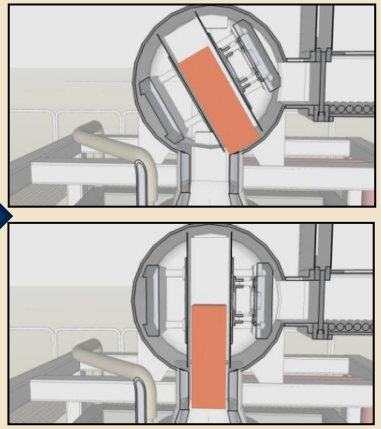
Step 2



Projectiles conveyed to top of vessel

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

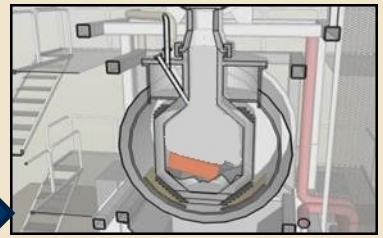
Step 3



Projectiles fed into electrically heated detonation chamber

Chamber temperature maintained above critical temperature of energetics inside the projectiles

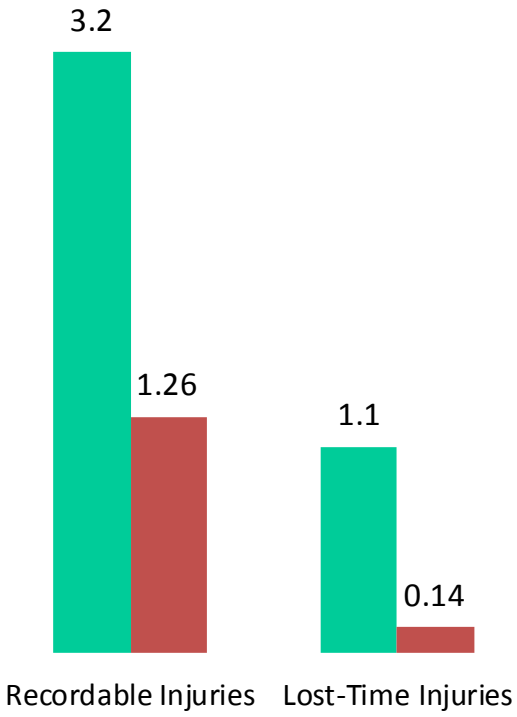
Step 4



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 **87 percent lower** and recordable injury rate is **61 percent lower** than industry average
- As of January 31, 2014, the project has completed 661,376 hours and 95 days without a lost-time accident

DEDICATED TO ACCIDENTS SAFETY EXCELLENCE

VPP Voluntary Protection Programs An OSHA Cooperative Program

Current Project Staffing

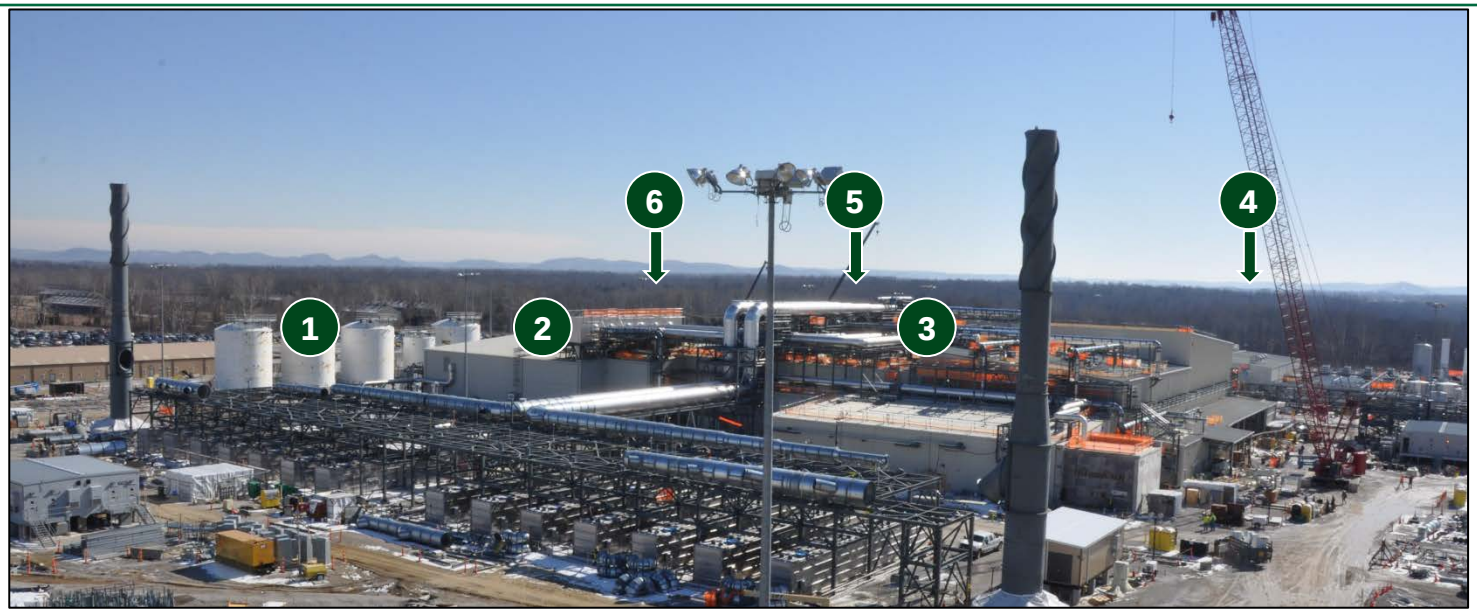
- **Total project employment—1,340**
- **Richmond, Ky.—1,333**
  - Nonmanual—671
  - Craft—669
  - Local hires—58 percent
- **Other locations—7**
  - San Diego, Calif.
  - Columbus, Ohio
  - Reston, Va.

There are 669 local union building & construction trades craft workers safely working at BGCAPP.

Economic Impact

- **Acquisitions to date**
  - $121.2 million spent with Kentucky companies
  - $69.8 million spent in Madison and surrounding counties
- **Payroll to date**
  (includes nonmanual and craft)
  - $534 million of local payroll paid

Main Plant Work in Progress



1 Hydrolysate Storage Area
- Exterior tank painting

2 Control and Support Building (CSB)
- Facility Control System electrical wiring
- Preparing for systemization beneficial occupancy

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
- Exterior pipe rack support steel
- Preparing for internal systems turnover to systemization phase

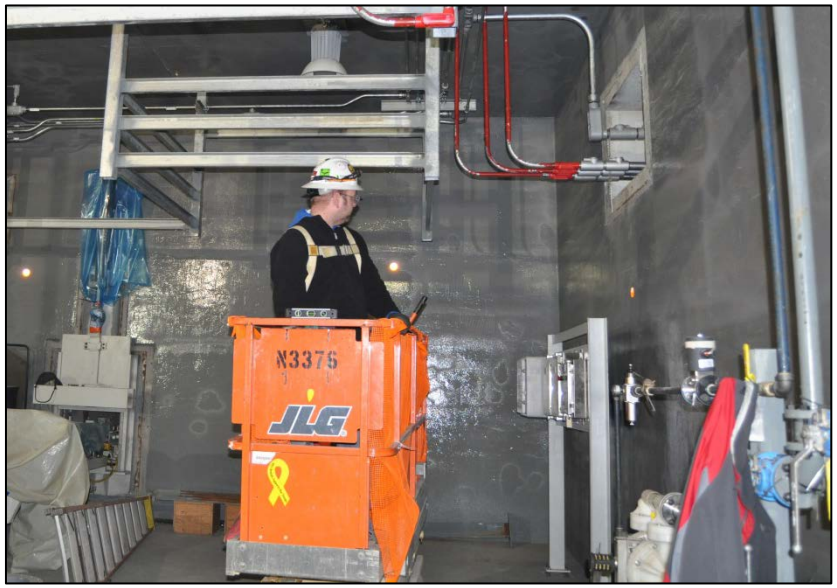
5 Supercritical Water Oxidation (SCWO) Process Building (not visible in photo)
- Mechanical equipment and piping systems
- Interior walls

6 Laboratory Building (not visible in photo)
- Systemization complete, personnel occupancy

Control and Support Building (CSB)

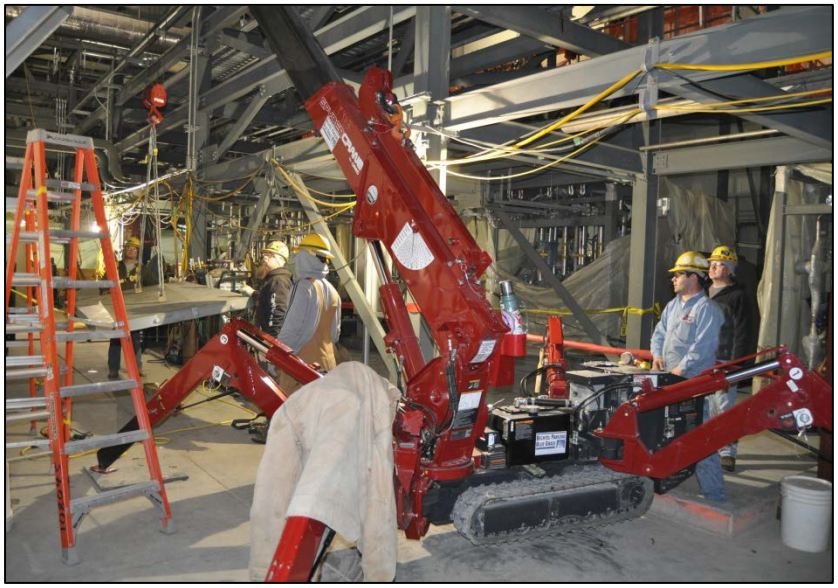
Carpenters (above left) survey locations of pipe rack concrete piers outside the CSB. Inside the CSB, electricians (above right) install backup battery systems. Once complete, the CSB will house the control room and the integrated control system used to operate the plant.

Munitions Demilitarization Building (MDB)



A worker (above left) installs fire detection conduit inside an MDB explosive containment room. 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



Workers (above left) install heating, ventilation and air conditioning ductwork to the SCWO Process Building exterior. Inside the SCWO Process Building, ironworkers and operating engineers (above right) use a mobile "spider" crane to safely lift a section of platform steel.
The SCWO Process Building will house the reactors where agent and energetic hydrolysates, byproducts of the neutralization process, will be subjected to very high temperatures and pressures to destroy the hydrolysates' organic content.

Utility Building (UB)

Construction team members are preparing the UB internal systems for turnover to systemization personnel. Three large steam boilers (above left) reside inside UB along with large air handling units and dryers (above right). Once complete, the Utility Building will house equipment to produce steam, compressed air, chilled water and hot water for operations.

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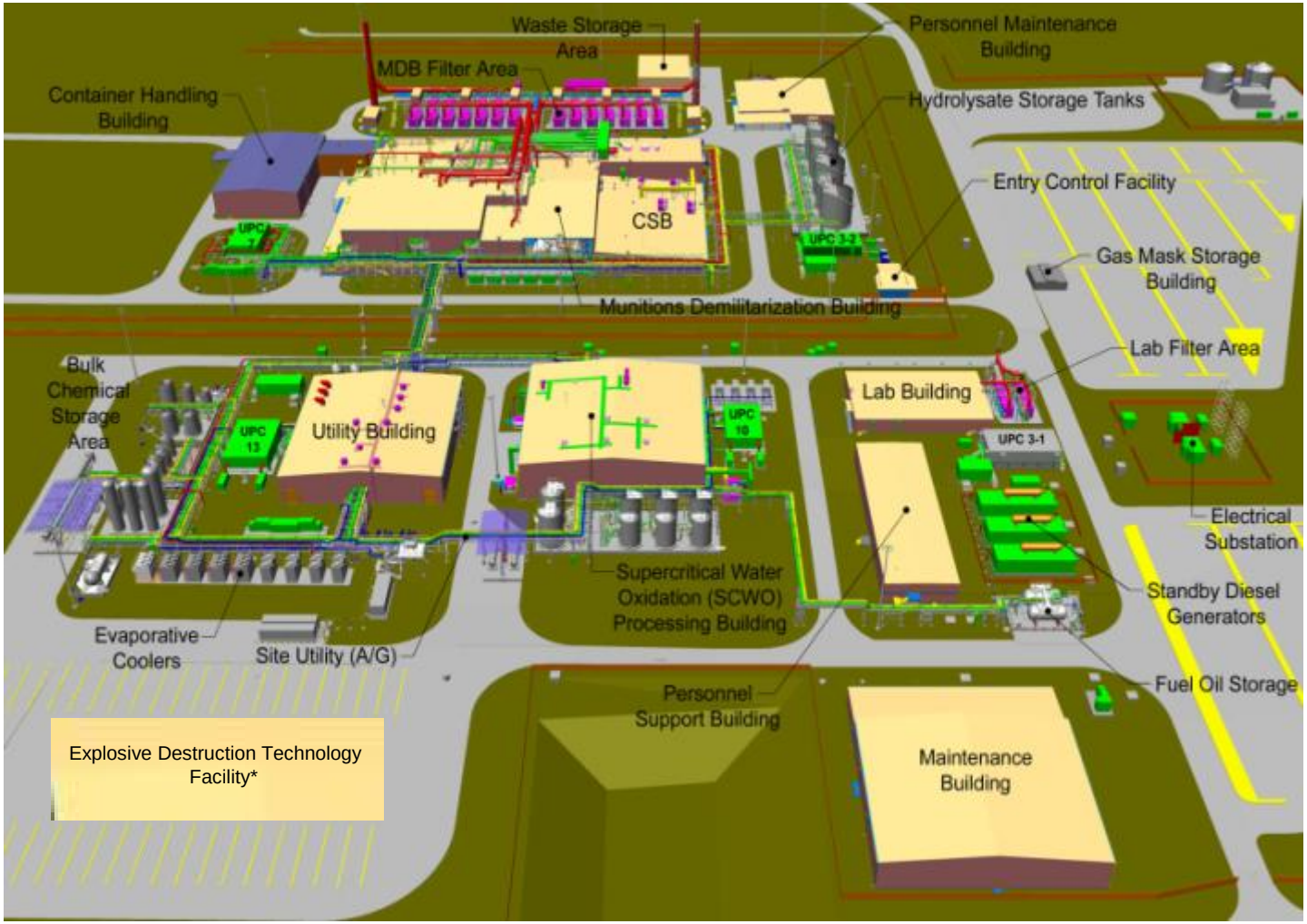

* Design under development