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Huntsville Center played major role in building Anniston Chemical Agent Disposal Facility

ANNISTON ARMY DEPOT, Ala. – The U.S. Army Engineering and Support Center in Huntsville, Ala., was the design and construction agent for the Anniston Chemical Agent Disposal Facility where operators destroyed the last of the chemical weapons stockpile located here Sept 22.

The Center also acquired all of the specialized equipment such as the incinerators, pollution abatement equipment and the control system for the site.

The demilitarization phase of ANCDF operations started Aug. 9, 2003, following several years of facility systemization, team training and preparation. The ANCDF, which sits on a 50-acre depot remote site, was constructed between 1997 and 2001.

Construction oversight was managed by an on-site resident engineering office and was supported by engineering and construction specialists at the Center in Huntsville, and construction was completed in June 2001.

The Huntsville Center mission provides engineering, construction and safety support to the Chemical Materials Agency and the Program Manager for Assembled Chemical Weapons Alternatives and serves as the Life Cycle Project Manager for the process equipment and facility design, facility construction, equipment acquisition and equipment installation for all of the program chemical demilitarization facilities.

The Anniston Chemical Activity provided the safe and secure storage of more than 7 percent of the nation's original chemical weapons stockpile. ANCA also was responsible for the safe transportation of the munitions to the ANCDF for destruction. The chemical munitions and agents stored at the depot contained either GB or VX nerve agent or mustard (blister) agents.

The Systems Contract for the Anniston Demilitarization Plant was awarded to Westinghouse Electric Corp., Feb. 29, 1996.

The chosen technology for the ANCDF was reverse disassembly followed by incineration.

The plant was designed and constructed to withstand earthquake forces and has a ventilation system that provides negative air pressures within the plant to assure vapor containment. All vapors and gases that left the plant passed through the pollution abatement system and carbon filters. The munitions were loaded by hand onto conveyors that carried them into the Munitions Demil Building where robotics separated the explosives and withdrawal of the agent which was destroyed in the liquid incinerator. Explosives were destroyed in the deactivation furnace and projectiles were decontaminated in the metal parts furnace.

According to Steve Light, a program manager in Huntsville's Chemical Demilitarization Directorate, the success at Anniston allowed the collection of many lessons learned that are incorporated into the two remaining facilities under construction: the Pueblo Chemical Agent-Destruction Pilot Plant in Pueblo, Colo., and the Blue Grass Chemical Agent-Destruction Pilot Plant in Richmond, Ky.

“Learning the successes and challenges of the munitions demilitarization campaign at ANCDF really helped us do a better job at Pueblo and Blue Grass,” Light said. “They are different types of plants and technologies, but they are required to destroy the same type of chemical munitions. One major system development used at ANCDF was the explosives detonation technology to destroy munitions that had minor leaks in storage and had to be specially contained,,destruction of chemical agent that has hardened within the munitions (called “heals”).or difficult to remove bursters (these are the explosives that explode to produce a chemical vapor in battle).

“Many people, both retired and still on staff, have contributed to this success ” Light said. “We look forward to the CMA program completion in April 2012. Pueblo and Blue Grass are not on that schedule because they use different technology. Those facilities will be completed in 2017 and 2021 respectively.”

“Everyone in the Huntsville Center that touched this project should take an minute to celebrate its successes and they should all take pride in the accomplishment of the safe elimination of the Alabama chemical weapon stockpile,” said Boyce Ross, the Engineering Directorate director.

Working together, ANCA and the ANCDF work force destroyed the stockpile safely – ensuring maximum protection of the installation and community population and providing treaty compliance. In March 2006, the ANCDF operators completed destruction of GB nerve agent followed by completion of VX nerve agent munitions in December 2008. Sept. 22 saw the end of the stockpile, with the completion of the third agent campaign – mustard agent.

Most munitions at Anniston were incinerated in the ANDCF. However, a small percentage of munitions were too old or had the potential to leak and therefore, could not be processed in the facility. Anniston officials used a Static Detonation Chamber (SDC) to heat up these munitions to 1,000 degrees Fahrenheit. This intense heat caused the munitions to self-detonate and then burn away within the sealed chamber.

With the completion of destruction operations, ANCDF now moves into closure operations – cleaning and shutting down the facility. CMA has safely completed disposal operations and closed its facilities in Edgewood, Md.; Newport, Ind. and Johnston Atoll, located 800 miles southwest of Hawaii. The incineration site in Pine Bluff, Ark. has also completed its stockpile operations and is currently in the closure process. CMA continues to safely store and destroy chemical weapons stockpiles in Tooele, Utah and Umatilla, Ore. CMA also oversees the safe storage of chemical weapons stockpiles in Blue Grass, Ky., and Pueblo, Colo. Huntsville Center has and will continue to play a key role in the Army mission to safely destroy the Chemical Weapons Stockpile.