



U.S. ARMY CHEMICAL MATERIALS AGENCY

Incineration: *A Safe, Proven Disposal Process*

Since 1990, the U.S. Army has used incineration safely and successfully to dispose of the country's stockpile of chemical nerve and blister agent. To date, more than 16 million pounds of chemical agent have been destroyed.

The Johnston Atoll Chemical Agent Disposal System (JACADS) began incineration operations in 1990 and destroyed its last chemical agent munition in November 2000. The Pine Bluff Chemical Agent Disposal Facility completed disposal of its stockpile in November 2010 using incineration. The Army currently operates incineration facilities in Anniston, Ala.; Tooele, Utah; and Umatilla, Ore.

Engineered with specially designed weapons handling processes, remote controlled incineration and disposal equipment, complex control systems and detailed procedures and training, the chemical weapons disposal facilities protect workers, the environment and the public.

The Army's incineration processes, based on years of experience and advances, ensure safe disposal of the various nerve and blister agents, munitions and containers.

Safety Features

The Army has pledged to protect the environment by meeting or surpassing all environmental requirements pertaining to the safe destruction of chemical weapons.

The plant systems protect the environment by cleaning the air and decontaminating the solid waste produced. The pollution abatement systems ensure that the facility emissions meet or exceed all federal, state and local standards.

To provide maximum safety to workers, the environment and the public, operators continually test air inside the plant and at the exhaust stack to verify that no detectable agent is present. Air inside the plant is measured by more than 150 state-of-the-art monitors

that operate continually and sound an alert if any potential chemical agent is detected. The monitoring systems are capable of detecting agent concentrations at very low levels, well below the levels at which human health effects would be possible and conservatively within all federal and state safety requirements. To ensure the accuracy of stack monitors, they are calibrated and tested every four hours.

Lessons Learned

The Army maintains a formal lessons learned program to collect improvements made at one site and ensure they are considered for use at all disposal sites. Lessons learned while operating the first disposal plant have benefited the other facilities. These benefits include special equipment and handling procedures for chemical land mines, techniques for dealing with unusual conditions caused by deteriorating chemical weapons, techniques for working in protective equipment and overall design and process improvements in the facility itself.

Independent Oversight

Congress, the Department of State, Department of Defense, Centers for Disease Control and Prevention, U.S. Environmental Protection Agency, National Academy of Sciences' National Research Council, Organisation for the Prohibition of Chemical Weapons and appropriate state environmental agencies provide formal oversight of the Army's incineration program. The incineration processes, backed by years of experience, have been scrutinized closely by the public; local, state and federal government officials; the aforementioned oversight agencies; and the court systems. To date, incineration remains the only full-scale technology demonstrated in real-time operations to safely treat the complete munition—agent, explosives, metal pieces and packaging material.

For more information, contact the CMA Public Affairs Office at (410) 436-3629 (800) 488-0648