PMCD
Program Manager for Chemical Demilitarization

information

Munitions Assessment and Processing System [MAPS]

Background

The Army anticipates that explosively configured munitions containing chemical agents and acidic smoke mixtures will be recovered during Installation Restoration Program (IRP) activities at Aberdeen Proving Ground (APG). Additionally, these munitions may be recovered when performing intrusive site work associated with miscellaneous construction and demolition activities. Chemical warfare materiel (CWM) recovered during such activities are the responsibility of the Army's Product Manager for Non-Stockpile Chemical Materiel (PM NSCM), while the disposal of smoke munitions is the responsibility of the Garrison APG. Therefore, the PM NSCM and the Garrison APG have teamed with the Baltimore District Corps of Engineers to design and build a facility, which can safely treat explosively configured, chemical and acidic smoke munitions.

The proposed Munitions Assessment and Processing System (MAPS) is a controlled system that will allow operators to separate a chemically filled munition into two waste streams: the chemical fill and the explosives in the munition body. MAPS provides explosive containment during the separation process to prevent the release of chemical agents in the event of an accidental detonation. The separated explosives will then be purposely detonated in MAPS inside a commercial detonation vessel. The chemical fill and scrap metal will then be processed in other permitted treatment units, including agent treatment units located on APG.

Prior. to processing via the MAPS, all munitions will be physically and chemically characterized by the Army Materiel Command's Munitions Assessment Review Board (MARB) using Department of Defense technical data, radiography, and non-intrusive characterization technologies. Only chemical munitions considered safe for handling will be processed in the MAPS.

Description of **Proposed MAPS**

MAPS will be located in a building to be constructed near the N-Field Storage Facility at the Edgewood Area of APG. MAPS includes the following major systems:

• Negative Pressure Filtration System - The filtration system contains carbon filters for removing contaminants from the building air. This system also maintains the process areas in the facility under negative pressure. Negative pressure is an engineering control that ensures that the building air is filtered to remove contaminants prior to its release into the environment.

Air Monitoring System - MAPS contains an array of 15 MINICAMS® that monitor the facility for the presence of chemical agent. These monitors are designed to alert the operators to chemical agent leaks so that corrective action can be implemented.

Glovebox - Located in the Process Room, the glovebox provides a means of handling the recovered munitions under negative pressure to reduce the risk of chemical agents being released into the process room.

Explosion Containment Chamber (FCC) - Also located in the Process Room. the ECC is where the munitions will be either cut or drilled. In the event of an accidental detonation during the cutting or drilling, the ECC can withstand a blast of up to 13 pounds of TNT without a vapor release. MAPS is designed to process munitions having less than 3.5 pounds of TNT.

• Burster Detonation Vessel (BDV) -'This is a commercial detonation vessel used to destroy the empty munition body, fuze, and burster. The BDV contains both the blast overpressure and the metal fragments. The overpressure will then be vented to the negative pressure filtration system.

Description of MAPS Separation Process

The steps in the separation process used by the MAPS facility are listed below:

• An overpacked, obsolete chemical munition will be brought to the MAPS processing room and placed in the glovebox.

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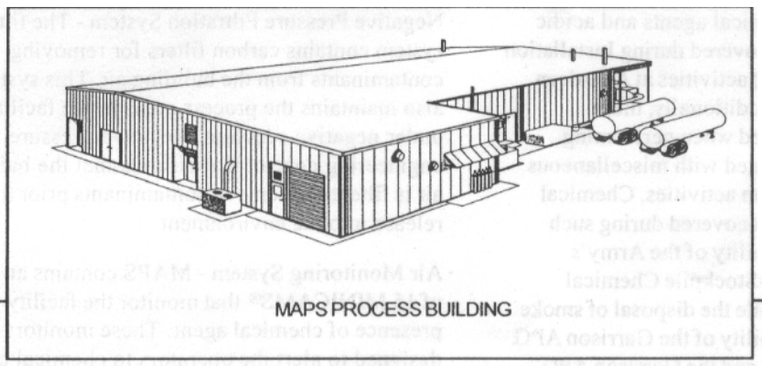
While in the glovebox , the munition will he unpacked and placed into a cut or drill box, depending upon the type of munition being opened.
The cut/drill box will be moved to the ECC. Inside the ECC, the munitions' chemical fill will be accessed by remotely drilling or cutting the munition.

The chemical fill will be removed and drained into an approved shipping container and the munition body will be decontaminated.
The agent-filled shipping container will be sent to a separate RCRA-permitted treatment facility at APG for destruction. The explosives from the drained munition will be detonated at the MAPS facility inside the burster detonation vessel.



MAPS PROCESS BUILDING