



U.S. ARMY CHEMICAL
MATERIALS AGENCY

FACT SHEET

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Deseret Chemical Depot

Pollution Abatement System (PAS) Filtration System (PFS)

Because some of the mustard agent-filled munitions and ton containers are contaminated with elevated amounts of mercury, the Tooele Chemical Agent Disposal Facility (TOCDF) built a new carbon filtration system. The new system ties into the existing Pollution Abatement System (PAS) and, by utilizing sulfur-impregnated carbon, will safely and effectively capture mercury contaminated exhaust gases.

The new PAS Filtration System (PFS) consists of three separate filter units—one for each of three furnaces: the metal parts furnace and two liquid incinerators. The filter units are massive, measuring nearly 60 feet long and weighing more than 35 tons. Each contains a pre-filter, a High Efficiency Particulate Air (HEPA) filter, four carbon filters and a final HEPA filter.

The exhaust gases from the furnaces flow through the PAS, where they are cooled and cleaned. The exhaust gases will then flow through the PFS, where the sulfur-impregnated carbon will capture any remaining mercury. To ensure maximum safety of the community and the environment, mercury monitoring systems are located at intervals within the PFS filter beds. These mercury monitoring systems ensure the carbon filters are working properly and help operators determine when and if the carbon needs to be replaced. There is also a mercury monitoring system in place near the common stack, complementing other emissions monitoring equipment.

The TOCDF started disposal operations in 1996 and was the first full-scale operating chemical weapons destruction facility in the continental United States. The National Research Council had determined that initially including carbon filters to the TOCDF's PAS would not reduce the health risk to the surrounding population. However, when it was discovered some of the mustard stockpile was contaminated with higher-than-expected levels of mercury, the TOCDF built a PFS to capture mercury. Ensuing chemical weapons disposal facilities in Umatilla, Ore., Anniston, Ala., and Pine Bluff, Ark., have had to modify their carbon filtration systems to remove mercury from stack gases.

Contingent upon approval by state regulators, the TOCDF is expected to start processing ton containers with elevated levels of mercury in fall 2009; mercury contaminated munitions are scheduled for destruction in winter 2010.

Each filter, weighing more than 35 tons and measuring nearly 60 feet long, had to be put into place by two cranes. Once all three filters were correctly positioned, a steel structure was built around them for temperature control and to help manage condensation. The new filtration system has its own generator to ensure continuous, compliant operation.



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