

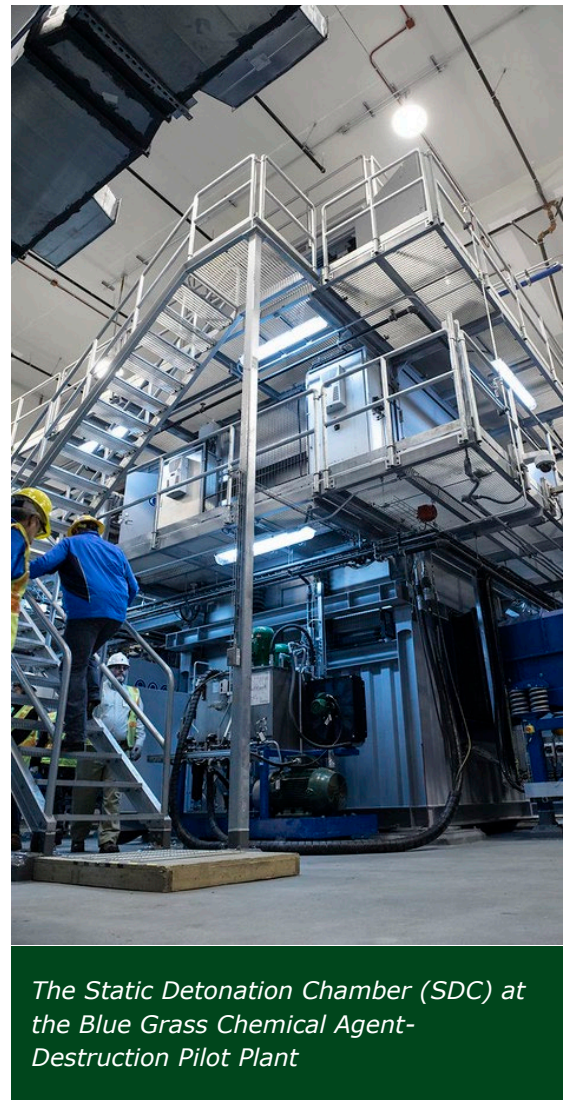


Static Detonation Chamber

The [Blue Grass Chemical Agent-Destruction Pilot Plant](#), or BGCAPP, is safely and efficiently destroying the chemical weapons stockpile currently in storage at the [Blue Grass Army Depot](#). A majority of the chemical weapons are being destroyed using neutralization. However, the use of an [explosive destruction technology \(EDT\)](#) is necessary to destroy a portion of the inventory of chemical munitions that present a problem to process in the main plant. The EDT chosen to augment the main plant is the Static Detonation Chamber (SDC).

A 2011 X-ray assessment of the chemical weapons stockpile in Kentucky confirmed the solidification of agent in a significant number of 155mm mustard projectiles, rendering them unsuitable for automated processing in the main plant. These problematic munitions, together with some 200 mustard projectiles that have leaked in the past and are now overpacked, required a different technological approach for their destruction. To resolve this issue, an SDC 1200 is destroying all of the approximately 15,000 mustard projectiles, as well as two 3-gallon Department of Transportation bottles containing mustard agent.

In 2019, due to worker safety concerns, a decision was made to no longer use the Energetics Neutralization System to process M55 rocket warheads that have been drained of their nerve agent. Instead, these drained warheads, along with overpacked M55 rockets, will be processed in [the SDC 1200 or a larger SDC 2000](#), which is in the process of being procured and permitted. The drained nerve agent will be processed through the plant's Agent Neutralization System as originally planned.



The Static Detonation Chamber (SDC) at the Blue Grass Chemical Agent-Destruction Pilot Plant

The SDC uses thermal destruction technology to process the weapons. Chemical munitions are placed in a feed box, conveyed to the top of the SDC vessel and fed into the electrically heated detonation chamber. The high heat (approximately 600 degrees Celsius or 1,100 degrees Fahrenheit) deflagrates or detonates the munition, and the chemical agents and energetics are destroyed by thermal decomposition. Gases generated as a result of the detonation are treated by an off-gas treatment system that includes a thermal oxidizer, scrubbers and a carbon filter system. All waste streams generated are screened. Scrap metal is sufficiently decontaminated to be recycled.

Blue Grass Chemical Stockpile Outreach Office
1000 Commercial Drive, Suite 2
Richmond, Kentucky 40475
(859) 626-8944 • bgoutreach@iem.com


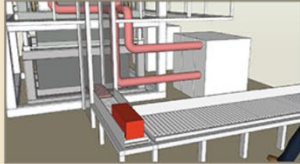
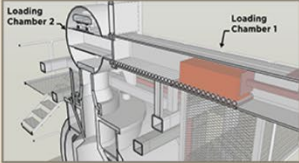
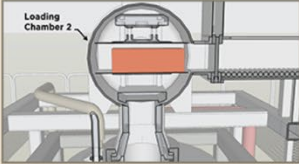
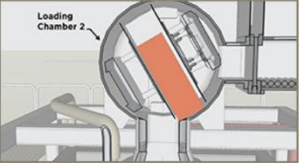
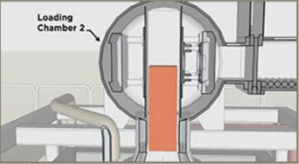
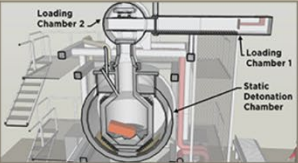
Blue Grass Army Depot Public Affairs Office
(859) 779-6941

**Blue Grass Chemical Activity
Public Affairs Office**
(859) 779-6897



Static Detonation Chamber (cont.)



Step 1	Step 2	Step 3	Step 4
 	 	 	
<p>Workers place mustard projectiles in a feed box with aid of material-handling equipment</p> <p>System allows for minimal handling of projectiles by workers</p>	<p>Feed boxes are conveyed to the top of the vessel and fed to loading chamber 1</p> <p>For added safety, it is a fully automatic, double air-lock feeding conveyor system</p>	<p>Loading chamber 2 rotates the feed box into the detonation chamber</p> <p>Feed box drops into SDC</p>	<p>High temperature detonates/deflagrates munition, and the mustard agent and explosive components are destroyed by explosion/thermal decomposition</p> <p>Off-gases are treated by an off-gas treatment system</p>