Deseret Chemical Depot

Destroying DCD's stockpile of GA and Lewisite agents

Area 10 Liquid Incinerator

The Deseret Chemical Depot (DCD) stockpile consists of small quantities of GA nerve and Lewisite blister agents—the only such stockpile in the United States. Stored in bulk containers, the GA and Lewisite agents are slated for disposal using a small-scale liquid incinerator.

Located in DCD's storage area—also referred to as Area 10—the facility was appropriately named the Area 10 Liquid Incinerator (ATLIC), and is similar in design to the liquid incinerators at the Tooele Chemical Agent Disposal Facility, but smaller in scale.

Destruction Process

The destruction process begins when workers safely transport the bulk containers a short distance from the storage igloos to the ATLIC facility. With a forklift, workers place the containers onto a rolling cart, which is used to transfer the containers into one of two specially designed gloveboxes, which will then be sealed.

Protected by gloves secured to the glovebox enclosures, workers will safely drain the agent from the containers. The drained GA agent will be sent directly to the ATLIC, which will thermally destroy the agent at approximately 2600 degrees Fahrenheit.

However, because Lewisite is known to contain heavy metals, the drained Lewisite agent will first be sent to a holding tank where it can be properly sampled prior to processing in the ATLIC.

Once emptied, a decon solution will be used to decontaminate the interior of each bulk container. The containers will be partially filled and rotated for a predetermined amount of time to ensure the entire interior surface is adequately decontaminated. A sodium hydroxide solution will be used to clean the GA containers, but because the Lewisite containers have a residual metal heel, nitric acid will be used for those containers.

After the decon solution is drained, the bulk containers will be partially filled with water and rotated again. This water rinse process will be repeated three or more times and the final rinse will be sampled and monitored to ensure the containers meet the decontamination standards set by the facility's hazardous waste permit.

The waste water rinsate and the spent decon generated from cleaning the GA bulk containers will be transferred to a collection tank and treated in the ATLIC. However, because the nitric acid used to rinse the Lewisite bulk containers is highly corrosive, it cannot be processed in the ATLIC and will instead

The Area 10 Liquid Incinerator (ATLIC) is located in Deseret Chemical Depot's (DCD) storage area, which is also known as Area 10. The ATLIC will be used to destroy DCD's small stockpile of GA nerve and Lewisite blister agents.

For more information, contact the
Tooele Chemical Stockpile Outreach Office
54 S. Main St.
Tooele, UT 84074
Phone: (435) 882-3773
Toll Free: (800) 471-1617
Fax: (435) 882-7904

or contact the
Public Affairs Office
(435) 833-4295
(435) 833-4575

or the
CMA Public Affairs Office
(800) 488-0648

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Destroying DCD's stockpile of GA and Lewisite agents (continued)

be shipped off-site to a permitted treatment facility.

The empty decontaminated bulk containers will then be returned to a storage igloo and ultimately sent to a permitted, off-site treatment facility for final disposition.

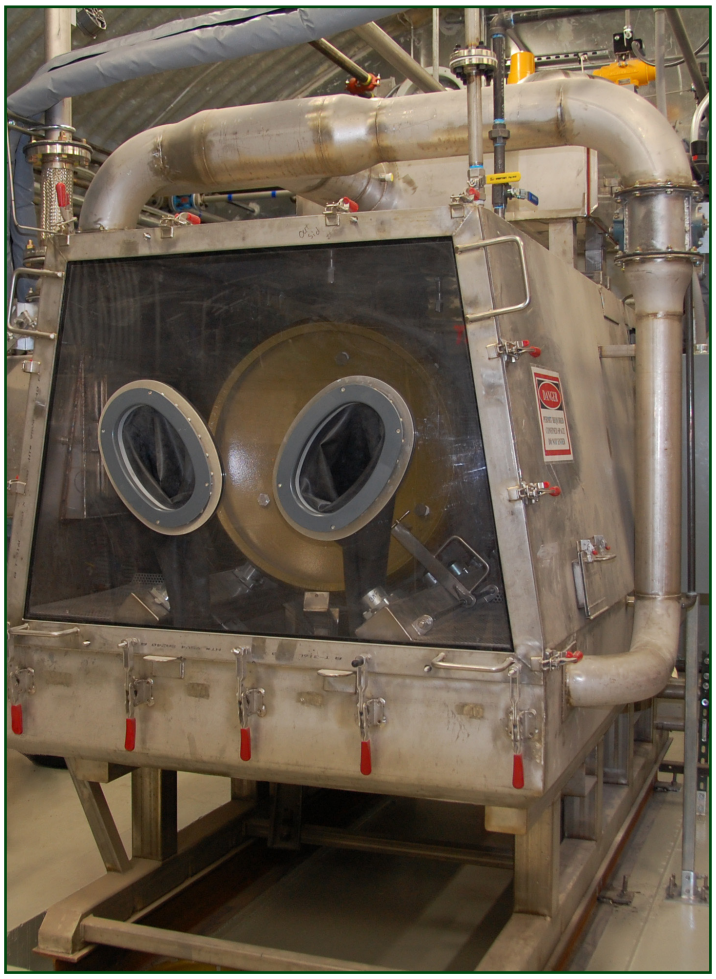
Environmental Protections

The ATLIC also includes a pollution abatement system (PAS), which will cool the exhaust gases, neutralize acidic gases and remove particulates and metals from the exhaust. The PAS is specially designed to remove the large quantities of arsenic contained in the Lewisite agent. The PAS will ensure the furnace exhaust is environmentally safe, meeting strict regulations before release into the environment.

To ensure maximum safety to workers, the public and the environment, the exhaust gases and the air inside the facility will be continuously monitored and tested on a regular basis to verify that no detectable agent is present.

Approximately 30 monitors will continually check the exhaust gases and air inside the facility, sounding an alert if any potential chemical agent is detected. The monitoring systems are capable of detecting chemical agent at very low levels, well below the level at which human health effects would be possible and conservatively within all federal and state safety requirements. Each air monitoring station will be tested daily to ensure performance accuracy. As an added measure, the stack monitors will be tested every four hours.

Scheduled to begin in fall 2011, operations are expected to take less than six months to complete and are projected to conclude in time to meet the April 2012 Chemical Weapons Convention treaty deadline.



Specially designed glove boxes will be used to safely drain the agent from the bulk containers. The glove boxes are equipped with a roller and drive assembly to rotate the containers during the decontamination and water rinse cycles.