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U.S. ARMY CHEMICAL MATERIALS AGENCY

Alarms at Chemical Agent Disposal Facilities and Chemical Weapons Storage Sites



Alarms are a normal part of disposing of chemical weapons. Just as people use alarm clocks and timers to stay organized, the U.S. Army's disposal facilities use sensors and alarms on thousands of pieces of equipment. The sensors and alarms help ensure a safe process for the workforce, public and environment. These alarms and sensors are on items such as doors, switches, valves, conveyor systems, automated equipment, furnaces, and storage and chemical treatment tanks. Sensors or monitors measure temperatures; position; pressure; flow rates; tank fill levels; percent levels of oxygen, nitrogen, carbon monoxide and other gases in the stack gases; plus they monitor for the presence of chemical agent.

Computers used by highly-trained and dedicated operators to control operations safely at disposal facilities record several thousand alarms daily as part of normal processing, including alarms that are generated as a regular part of the daily testing of agent monitors.

Most of these alarms are as routine as an alarm clock going off in the morning.

Types of alarms at a disposal facility

There are three general types of alarms:

- **Information and Notification Alarms** tell workers the status of a piece of equipment such as whether or not a switch is on, a door is closed, a furnace is too hot or cold, or a tank is empty. They confirm that a process action is complete or ready to start. Alarms also sound when process and chemical agent monitors are tested to ensure they work properly, just like the alarm sounds when testing a home smoke detector.
- **Trend Alarms** present information that, although the process is still within safe limits, an unsafe pattern or trend is developing. This allows operators to take corrective action before the process exceeds acceptable, safe limits.
- **Out-of-limits Alarms** provide notification of immediate problems with equipment or the process. Depending on the portion of the process or piece of equipment causing the alarm, the disposal process is automatically stopped.

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



Alarms at Chemical Agent Disposal Facilities and Chemical Weapons Storage Sites (continued)

Normal alarms for storage or disposal operations

Notification and information alarms, as well as the monitor testing alarms, are normal for disposal operations.

Regular testing of chemical agent monitors used in the storage area generates alarms. Alarms also may go off hundreds of times a year as a result of chemical agent leaks inside the storage facilities.

Chemical agent alarms

During the disposal process or regularly scheduled maintenance work, chemical agent monitors continuously monitor for agent in various parts of the disposal facility. Some areas of the facility are expected to have agent present. These areas are designed and built to control and contain agent but are monitored to determine the level of agent contamination, so workers in those areas are equipped with appropriate protective gear. If agent is detected in an area that is normally agent free, the monitors alarm.

Chemical agent monitors are very sensitive; they detect agent if it is present, but they also alarm falsely for other substances such as diesel fumes and perfume. Monitors are tested at least daily to ensure they work properly and to reduce the number of false alarms. Sometimes the only way

to determine whether a monitor has detected chemical agent or another compound is to perform a detailed laboratory analysis on air samples drawn by back-up monitors. It is important to note that site personnel respond to all agent alarms as if actual agent were detected until a final determination of the presence of agent is made—this ensures the safety of the workforce.

Notifying the public, local officials or media of alarms at a storage site or disposal facility

The Army's chemical weapons disposal site personnel work closely with local, state and federal officials, along with emergency response and regulatory agencies, to ensure the safety of the workforce, public and environment. Effective oversight is accomplished through continual coordination and communication. Part of the coordination with oversight officials and agencies and the media are the sites' agreements and commitment that:

- All alarms for chemical agent in the outside air are reported to county emergency operations centers and to appropriate local, state and federal agencies.
- Any alarms that automatically stop agent disposal operations or result from exceeding a permit requirement are reported to appropriate county, state and federal agencies.
- Media are notified when agent is detected in outside air and for other events that result in unplanned pauses in the disposal process.
- Except for testing, emergency alert sirens will be activated only to notify the public in the unlikely event of a chemical agent incident at a storage area or disposal facility that could pose a threat to the surrounding community.

Emergency alert siren response

In the unlikely event emergency sirens are activated, the best protection is having a plan of action prepared in advance. Counties adjacent to each disposal site have appropriate emergency alert siren response procedures and guidelines. To learn how to respond in an emergency, contact the nearest county emergency management agency. The local chemical weapons disposal outreach office can assist in contacting the appropriate county personnel.

