

CSEFPF



*To improve the emergency response capabilities
of communities that surround the chemical stockpiles*



FEMA

Prepared for the

Chemical Stockpile Emergency Preparedness Program

by Argonne National Laboratory Risk Communication and Management

CSEPP

CHEMICAL STOCKPILE EMERGENCY PREPAREDNESS PROGRAM

A Brief History of Chemical Weapons

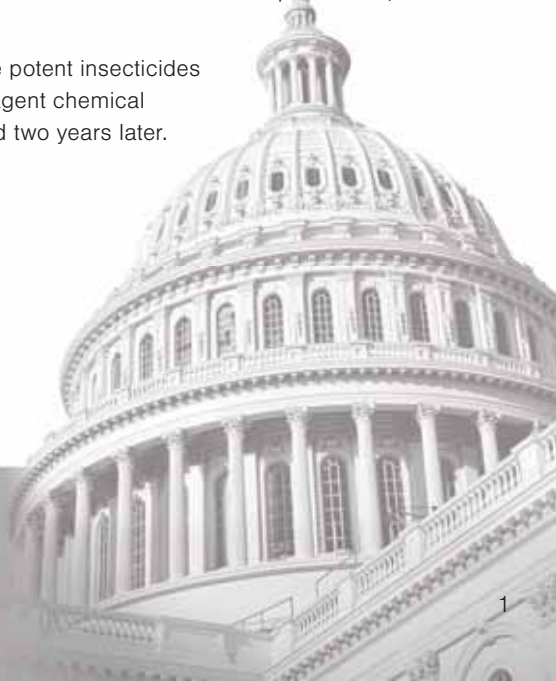
Chemical weapons have been around for a long time. As far back as 10,000 B.C., Stone Age hunters used poison-tipped arrows against game animals to help feed themselves. The first recorded instance of gas warfare was in the fifth century B.C. during the Peloponnesian War, when a combination of pitch and sulfur smoke was used. Other conflicts during succeeding centuries saw the use of smoke and flame.

A renewed interest in chemicals as military weapons occurred with the birth of modern inorganic chemistry during the late 18th and early 19th centuries and the growth of organic chemistry in Germany during the late 19th and early 20th centuries.

World War I began amid a continuing debate about the morality of chemical warfare. In April 1915, German units released chlorine gas near the Belgian town of Ypres, leaving thousands dead. In July 1917, again near Ypres, German artillery shells delivered a new kind of chemical agent – sulfur mustard.

Between World War I and World War II, the debate about chemical warfare continued in the United States and in international forums. The Geneva Protocol was signed in 1925, prohibiting the “use in war of asphyxiating, poisonous or other gases, and of bacteriological methods of warfare.” But the Protocol did not address the production, storage or transfer of chemical weapons.

In 1936, a German chemist searching for more potent insecticides accidentally discovered tabun, the first nerve agent chemical weapon. The nerve agent sarin was discovered two years later.



During World War II, Nazi Germany mass-produced these agents, but they were never used against Allied targets. Germany was unaware the Allies had not developed similar compounds and was concerned about a retaliatory strike.

The end of World War II did not halt the pursuit of chemical weapons. Discovery of the German program prompted further research by the former Allied nations. Although the threat of global thermonuclear annihilation was foremost in most minds during the Cold War, both Soviet and Western governments invested enormous resources in the development and stockpiling of chemical weapons.



The End of Production

In November 1969, President Richard Nixon formally announced the United States would cease development of chemical (and biological) weapons.

In April 1984, President Ronald Reagan called for an international

ban on chemical weapons. President George H.W. Bush and Soviet Union leader Mikhail Gorbachev approved a bilateral treaty on June 1, 1990, to end the production of chemical weapons and to start destroying national stockpiles.

The multilateral Chemical Weapons Convention was signed in 1993 and came into effect in 1997. The Convention prohibits developing, producing, stockpiling or using chemical weapons, and under terms of the Convention all former production facilities, chemical weapons and chemical agents must be destroyed.

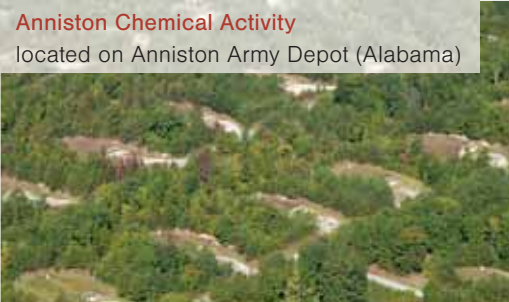


Construction of storage structure (called "igloo"), 1941.

The Stockpiles

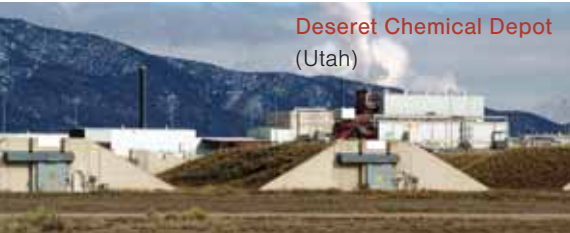
Domestic stockpiles of chemical weapons were originally stored on eight Army installations in the continental United States. American Army bases in other countries shipped their chemical weapons to Johnston Atoll in the Pacific Ocean (which stored approximately 6 percent of the original stockpile). Disposal operations have since been completed at Johnston Atoll and Edgewood Chemical Activity at Aberdeen Proving Ground, Maryland. The Army's current storage sites are named below.

Anniston Chemical Activity
located on Anniston Army Depot (Alabama)



Blue Grass Chemical Activity
located on Blue Grass Army Depot (Kentucky)

Deseret Chemical Depot
(Utah)



Newport Chemical Depot
(Indiana)

Pine Bluff Chemical Activity
located on Pine Bluff Arsenal (Arkansas)



Umatilla Chemical Depot
(Oregon)

Pueblo Chemical Depot
(Colorado)



Umatilla Chemical Depot, OR

Percentage of original stockpile: 12%¹
Incineration – began disposal in 2004

Pueblo Chemical Depot, CO*

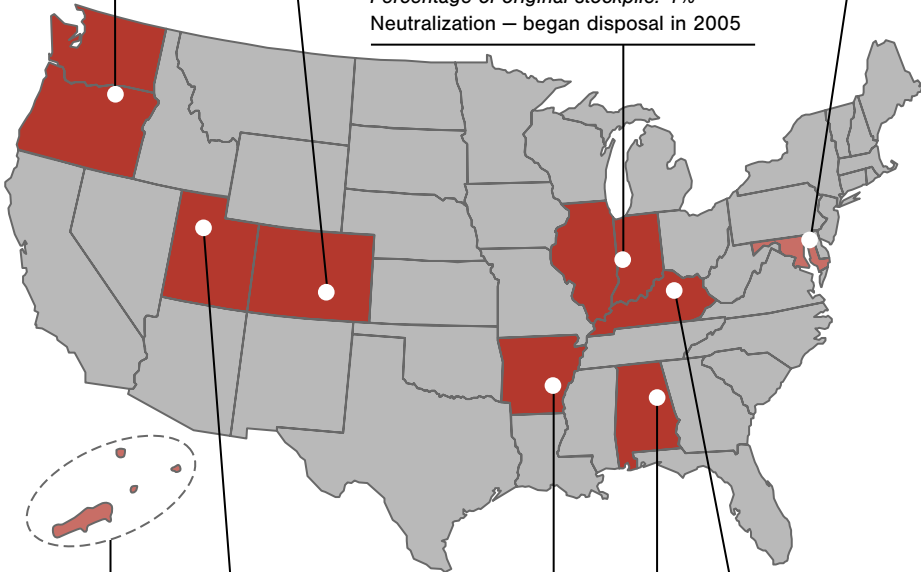
Percentage of original stockpile: 8%¹
Neutralization – design/construction under way

Edgewood Chemical Activity, MD

Percentage of original stockpile: 5%^{1,2}
Neutralization – completed disposal in 2005

Newport Chemical Depot, IN

Percentage of original stockpile: 4%¹
Neutralization – began disposal in 2005



Johnston Atoll

Percentage of original stockpile: 6%^{1,2}
Incineration – completed disposal in 2000

Pine Bluff Chemical Activity, AR

Percentage of original stockpile: 12%¹
Incineration – began disposal in 2005

Blue Grass Chemical Activity, KY*

Percentage of original stockpile: 2%¹
Neutralization – design/construction under way

Anniston Chemical Activity, AL

Percentage of original stockpile: 7%¹
Incineration – began disposal in 2003

Deseret Chemical Depot, UT

Percentage of original stockpile: 44%¹
Incineration – began disposal in 1996

Key

¹ Approximate percentage of U.S. stockpile.

² 100% of the Edgewood Chemical Activity and Johnston Atoll stockpiles have been destroyed.

*The Colorado and Kentucky chemical stockpile destruction programs are managed by the Dept. of Defense's Assembled Chemical Weapons Alternatives program.

The Chemical Agents

The United States stores chemical agent-filled rockets, bombs, artillery shells, mines, mortar rounds and spray tanks. About 60 percent of the chemical compounds manufactured were not put into weapons. These agents are kept in large, steel containers.

These weapons and containers are stored in specially-designed warehouses and semi-underground storage buildings called "igloos." The U.S. Army Chemical Materials Agency is responsible for the safe storage of these chemical agents. There are two types of agent in the U.S. chemical weapons stockpile: blister and nerve.

Blister Agents

Blister agents are oily liquids that smell like garlic, onion or mustard. They are sometimes called "mustard agents." Blister agents in the stockpile are H, HD, HT and Lewisite. These agents burn or blister the skin, eyes and respiratory system. Exposure to blister agents usually is not fatal unless the agents are inhaled. In general, blister agents do not dissolve in water and can last a long time in the environment.

Nerve Agents

Nerve agents are clear, colorless liquids that affect the body's central nervous system. These agents can be fatal if inhaled or absorbed through the skin. Two kinds of nerve agent are stored:

- ▼ G-type agent is similar to a strong pesticide. This liquid evaporates at about the same rate as water.
- ▼ V-type agent looks like motor oil. This thick liquid evaporates slowly and may remain in the environment as droplets for several days.

The U.S. Army Chemical Materials Agency is the world leader in programs to store, treat and dispose of chemical weapons safely and effectively. The agency develops and uses technologies to safely store and eliminate chemical weapons while protecting the public, its workers and the environment.



Destroying the Stockpiles

Decades after their production, the United States has chemical weapons and chemical agents that are no longer wanted or needed. The Chemical Weapons Convention requires that they be destroyed. In addition, an Army study revealed that it is more dangerous to continue to store the stockpiles than it is to destroy them.

How are the stockpiles being destroyed? In some places, they are being burned in large incineration facilities. In others, the stockpile is being “neutralized,” a process that chemically alters the chemical agents. The facilities for stockpile disposal are built with multiple, redundant safety features. Destruction facilities are near the storage areas so these weapons do not have to be moved long distances.

Incineration

Deseret Chemical Depot is approximately 22 miles south of Tooele, Utah, and 60 miles southwest of Salt Lake City. It stored 44 percent* of the nation’s original stockpile of chemical agents (blister and nerve agents). The Tooele Chemical Agent Disposal Facility began operations in August 1996.



Deseret Chemical Depot



*Umatilla
Chemical Depot*

Umatilla Chemical Depot is in eastern Oregon, approximately seven miles west of Hermiston and close to the Washington state border. It stored 12 percent* of the original stockpile (blister and nerve agents). The Umatilla Chemical Agent Disposal Facility began operations in September 2004.

Anniston Chemical Activity is located on Anniston Army Depot, approximately eight miles west of Anniston, Alabama, and 50 miles east of Birmingham. It stored 7 percent* of the original stockpile (blister and nerve agents). The Anniston Chemical Agent Disposal Facility began operations in August 2003.



Anniston Army Depot

Pine Bluff Chemical Activity is located on Pine Bluff Arsenal, approximately 35 miles southeast of Little Rock, Arkansas. Much of the blister agent in the nation’s stockpile was made at Pine Bluff Arsenal. It stored 12 percent* of the original stockpile (blister and nerve agents). The Pine Bluff Chemical Agent Disposal Facility began operations in March 2005.

Pine Bluff Arsenal



**Percentages are approximate.*

Other Destruction Methods

Congress directed the Army to look at alternatives to incineration for some sites. After much study and in consultation with community stakeholders, the Army determined that a neutralization process would effectively eliminate the bulk chemical agents at Edgewood Chemical Activity and Newport Chemical Depot. Also at Congressional request, the Assembled Chemical Weapons Alternatives (ACWA) program was established to evaluate alternatives to the incineration of assembled chemical weapons, such as artillery projectiles, mortar rounds and rockets, resulting in the selection of neutralization for the stockpiles at Pueblo Chemical Depot and Blue Grass Chemical Activity. The National Research Council subsequently endorsed neutralization for all four sites.

Edgewood Chemical Activity is located in the Edgewood Area of Aberdeen Proving Ground, Maryland. It stored 5 percent* of the original stockpile (blister agent). The Aberdeen Chemical Agent Disposal Facility completed disposal operations in March 2005.



Aberdeen Proving Ground



Newport Chemical Depot

Newport Chemical Depot is near Newport, Indiana, approximately 70 miles west of Indianapolis. The Army produced the entire stockpile of VX at Newport Chemical Depot. It stored 4 percent* of the original stockpile (nerve agent). The Newport Chemical Agent Disposal Facility began operations in May 2005.

Pueblo Chemical Depot

Pueblo Chemical Depot is in southeastern Colorado, approximately 14 miles east of Pueblo. It stores 8 percent* of the original stockpile (blister agent). Construction on the Pueblo Chemical Agent-Destruction Pilot Plant began in September 2004.



Blue Grass Army Depot

Blue Grass Chemical Activity is located on Blue Grass Army Depot, approximately 30 miles southeast of Lexington, Kentucky. It stores 2 percent* of the original stockpile (blister and nerve agents). Construction on the Blue Grass Chemical Agent-Destruction Pilot Plant began in October 2006.

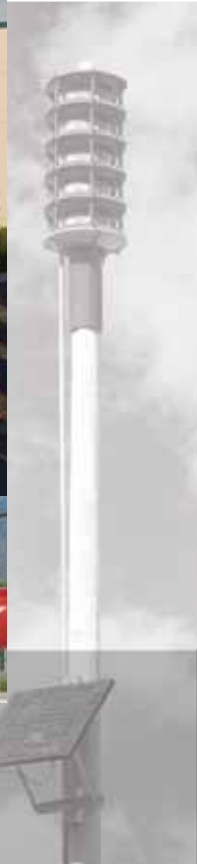
An Army study revealed that it's more dangerous to continue to store the stockpile than to destroy it.

What CSEPP Means to You

When Congress mandated the destruction of the chemical stockpiles, it ordered that this be done with “maximum protection” for the public until the chemical agents are completely gone. Early studies of the communities near the stockpiles showed the need to improve existing emergency plans, training, equipment and facilities. To enhance these capabilities, the Chemical Stockpile Emergency Preparedness Program (CSEPP) was created. The purpose of CSEPP is to improve the emergency response capabilities in communities that surround the chemical stockpiles. CSEPP recognizes that each community has its own particular needs for emergency preparedness.

Since CSEPP began in 1988, state and local emergency management officials have teamed with the Army and the Federal Emergency Management Agency (FEMA) to protect the public from the unlikely event of a chemical agent accident.

Two of the eight stockpile communities cross state borders. That means at its peak, 10 states and 40 counties were part of CSEPP.



Better Prepared Because of CSEPP

Because safety is the top priority, the Army has worked with the military installations and FEMA has worked with the communities surrounding the storage sites to upgrade emergency response capabilities.

Today, with the help of the Army, FEMA and other federal, state and local agencies, these communities are better prepared for a variety of emergencies. This partnership has helped each community strengthen its ability to respond to emergencies through improved facilities, equipment, planning, training and exercises.

Facilities and Equipment

Your local Emergency Management Agency has an upgraded Emergency Operations Center (EOC) – for response to any emergency. Your community officials meet in the

EOC to get the information they need to make the decisions that keep you safe. Computers, radios, protective clothing, vehicles and other equipment provided to your community by CSEPP make for a safe, fast and efficient response.

Outdoor sirens have been installed in your community to warn you of a chemical stockpile accident. Chances are they have already been used to warn you about approaching storms. The sirens will remain in your community after the chemical agents are gone.



Planning

Planning is something you do every day, consciously or unconsciously. You plan your workday and free time. When you plan a weekend getaway, you choose the best route, check the spare tire, fill the gas tank and pack your suitcase. You try to think of everything you need to do before you leave and everything you will need while you are gone. Emergency planning goes on in your community every day, too, but there are some differences. Professional emergency planners make the plans for you. Their job is to identify the specific needs of your community. They make sure that officials and emergency responders know what to do and how to do it, and that they have the equipment they need.



Emergency preparedness and the safe removal of the stockpile are the greatest benefits the Army and FEMA could provide to your CSEPP community.

Training

Once plans are in place, people are trained. CSEPP training gives local emergency responders — such as police officers, firefighters and emergency medical teams — skills and knowledge they can use every day and in all kinds of emergencies. Types of CSEPP training include: identification of chemical agent characteristics, medical treatment, decontamination, use of protective equipment, and providing emergency public information. CSEPP also offers valuable training for decision makers.



Exercises

Annual CSEPP exercises are similar to fire drills conducted in schools, businesses and homes. These exercises offer emergency management officials and responders an opportunity to test plans, procedures, skills and equipment. Testing emergency response plans is not a new idea. Many state and federal agencies, communities and private industries (such as nuclear power plants) have tested their emergency plans for years.



What Can You Do?

Preparing for any type of emergency begins with you. The best way to prepare is to know more about the risks in your community. Contact your local Emergency Management Agency (the number can usually be found in the government pages of your local phone book) with any questions you might have. You should also develop a family emergency plan and have a disaster supply kit ready for your family. This type of preparation can help you get through many different types of emergency situations.

You're Safer Because of CSEPP

Through careful planning, training and exercises, emergency management officials and responders prepare for all kinds of natural and man-made emergencies — tornadoes, floods, hazardous material spills and more. This legacy and the safe removal of the stockpile are the greatest benefits the Army and FEMA could provide to your CSEPP community.



CSEPP training gives local emergency responders skills and knowledge they can use every day and in all types of emergencies.

For more Information

Contact your local Emergency Management Agency or one of the following:

Chemical Materials Agency Headquarters
Public Affairs Office
AMSCM-PA
5183 Blackhawk Road
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1-800-488-0648
1-410-436-4292
www.cma.army.mil

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