Speakers Request Form

[illegible] services [illegible] Newport Chemical Stockpile Community [illegible] Office is the Speakers Bureau. If you are [illegible] in having a program representative speak [illegible] organization, please complete the following [illegible] return it to the Outreach [illegible]

Name of Organization _____

Point of Contact _____

Phone Number _____

Email _____

Fax Number _____

I am interested in learning more about the following subjects:

- History of the Newport Chemical Depot
- Safe storage of the chemical agent stockpile
- Destroying the chemical agent using neutralization technology
- Dismantling of the former chemical agent production facility
- Chemical Stockpile Emergency Preparedness Program
- Other _____

Preferred dates and times of presentation

Optional dates _____

Location of presentation _____

Estimated number of attendees _____

Send to *(mail or fax)*:

Newport Chemical Stockpile Outreach Office
P.O. Box 279 • Newport, IN 47966-0279
Fax (765) 492-4475

or Call

1(866) 300-9034

Outreach Office Hours

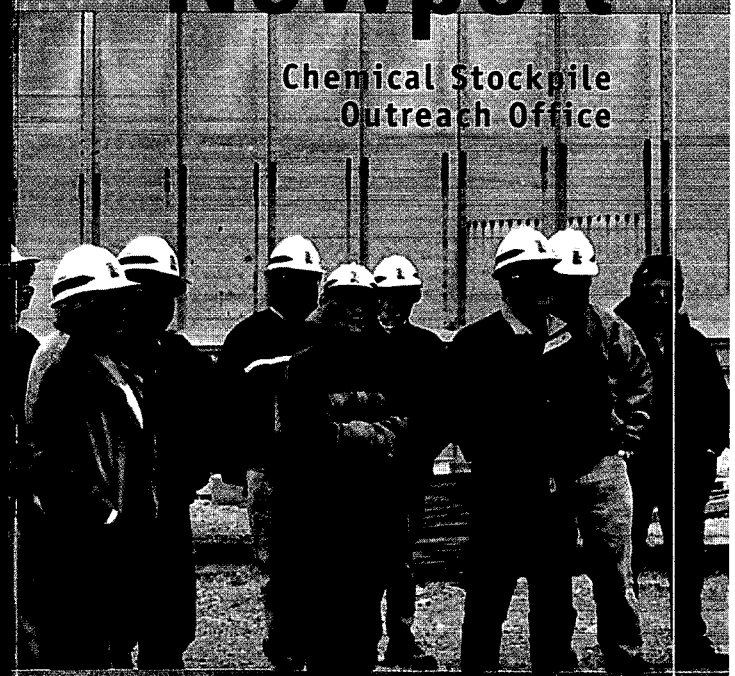
8:30 a.m.—5:00 p.m.
Monday — Friday
Weekend and evening hours available
1(866) 300-9034
Fax (765) 492-4475

For more information on the Chemical Materials Agency (CMA) Program contact CMA Public Affairs at 1(800) 488-0648 or visit our Web site at www.cma.army.mil

CMA U. S. Army Chemical Materials Agency

Newport

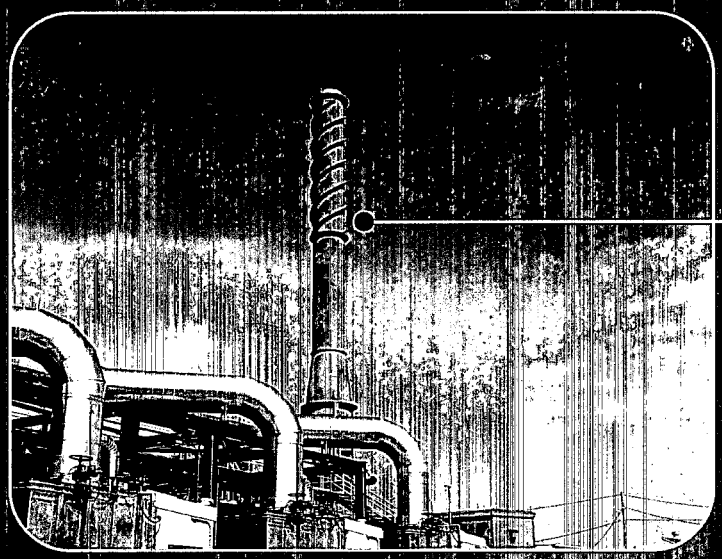
Chemical Stockpile Outreach Office



NECDF

Protecting the Environment and the Public

Many safeguards have been built into the Newport Chemical Agent Disposal Facility (NECDF) to ensure safe operations and the protection of NECDF workers, our community and the environment. Safeguards used in this protection include air emissions controls.



Stack emissions

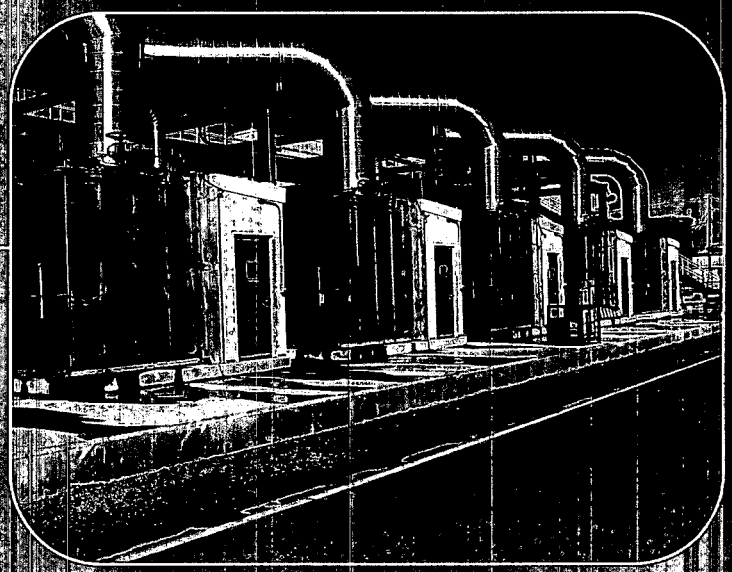
The agent will be chemically destroyed by neutralization in a specially designed and constructed building. This process building is ventilated and maintained under negative pressure, which captures outside air and draws it into the building while preventing the escape of air pollutants. Large blowers remove air from the building via ductwork.

Carbon Filtration Units

Large blowers draw the air removed from the process building through specially designed air filters that contain both high efficiency filters and carbon contained within large stainless steel housings. These air filters scrub the air to remove particulates and pollutants in order to meet state and federal Clean Air standards.

Areas with Air Filtration

The agent processing building, bulk tank storage building and the NECDF Laboratory are all ventilated and connected to the carbon filtration units. Air from these locations is controlled, monitored and filtered before being released to the environment.



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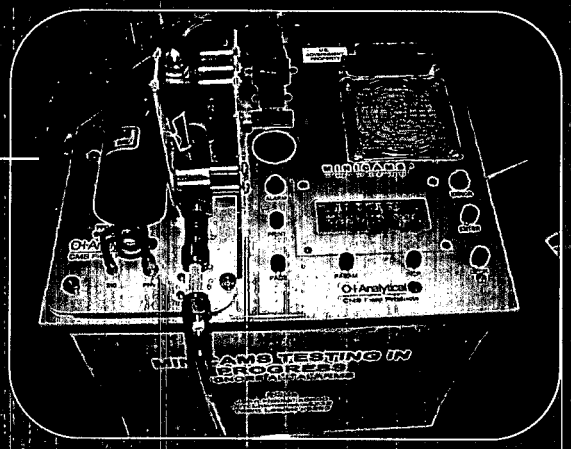
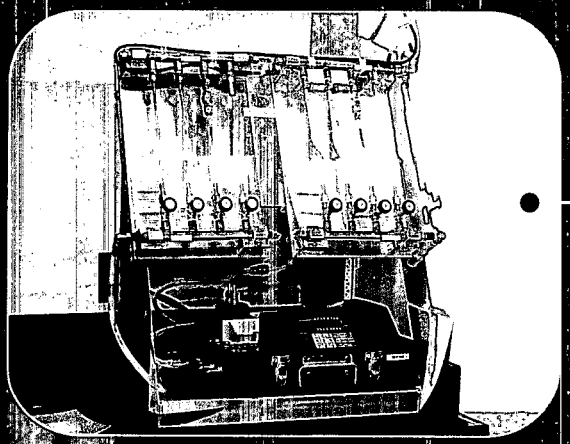
Chemical Agent Monitoring at NECDF

More than 70 chemical agent monitors are placed in and around the Newport Chemical Agent Disposal Facility (NECDF), with over 4,400 samples taken daily. "Near real time" monitors continuously "sniff" the air and give a reading within minutes to check for chemical agent vapors. Other monitors collect samples over a longer period of time to confirm readings of the near real time devices.

Miniature Continuous Air Monitoring System (MiniCAMS)

The MiniCAMS is one of the primary monitors used in the Army's chemical weapons disposal program. Installed inside and around the footprint of the NECDF, about 40 of these near real time monitors sample the air every 6 to 15 minutes, 24 hours a day, with each air sample analyzed and the results visually displayed. Using a process called gas chromatography, these monitors can detect extremely low levels of chemical agent vapors. Any detection exceeding allowable levels triggers local and remote alarms.



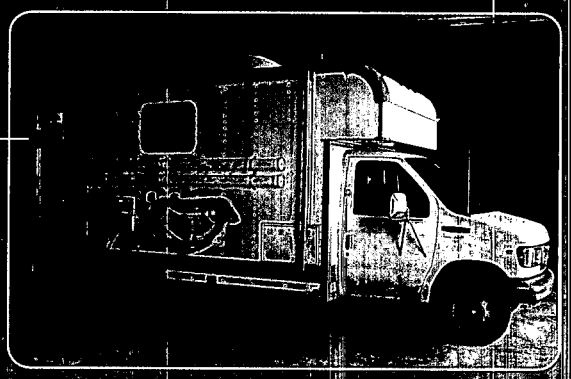


Depot Area Air Monitoring System (DAAMS)

Approximately 40 DAAMS units continually sample the air for chemical agents by drawing the air through special glass tubes and trapping any chemical agent vapors in a special material. Sampling times vary from 15 minutes to 12 hours. The tubes are then collected and analyzed by the monitoring laboratory to confirm readings of the MiniCAMS. DAAMS are also used to provide a historical record for areas not monitored in near real time.

Real Time Analytical Platform (RTAP)

The RTAPs are fully functional mobile monitoring vehicles with equipment that will sample and analyze ambient air to detect the presence of nerve agent vapors. The depot and NECDF use RTAPs in the chemical storage and waste storage areas. They are capable of 24-hour-operations and can accurately analyze for chemical agent vapors with results confirmation in approximately one hour.



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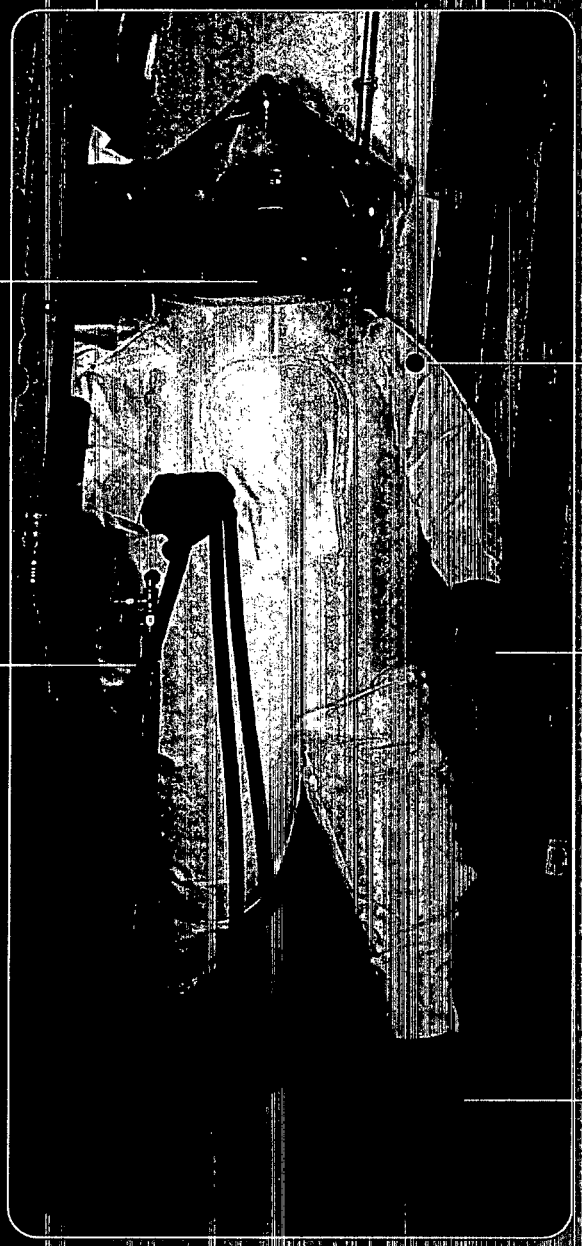
Suiting Up for Safety

NECDF

The Demilitarization Protective Ensemble (DPE) is a heat-sealed, one-time-use suit that, with supporting equipment, weighs about 50 pounds. These airtight suits provide the highest level of protection against chemical agent exposure for workers accessing areas of the disposal plant where the chemical agent is destroyed. Workers at disposal sites have successfully completed tens of thousands of entries into these areas wearing DPE suits.

DPE Suit



A radio transmitter provides contact with emergency backup, personnel, control room and other support staff.

Primary supply comes through hose connection to purified air; a self-contained breathing apparatus provides 8 to 10 minutes of escape air in case the primary supply is disrupted. Heart monitor around chest checks for signs of distress.

Second skin
Specially blended materials help seal out harmful chemicals.

Gloves
Three layers are used, with thick Army-issue butyl rubber gloves as the top layer.

Boots
One-piece suit slips into butyl rubber boots that are then sealed to the suit.

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U.S. Chemical Weapons Stockpile Sites

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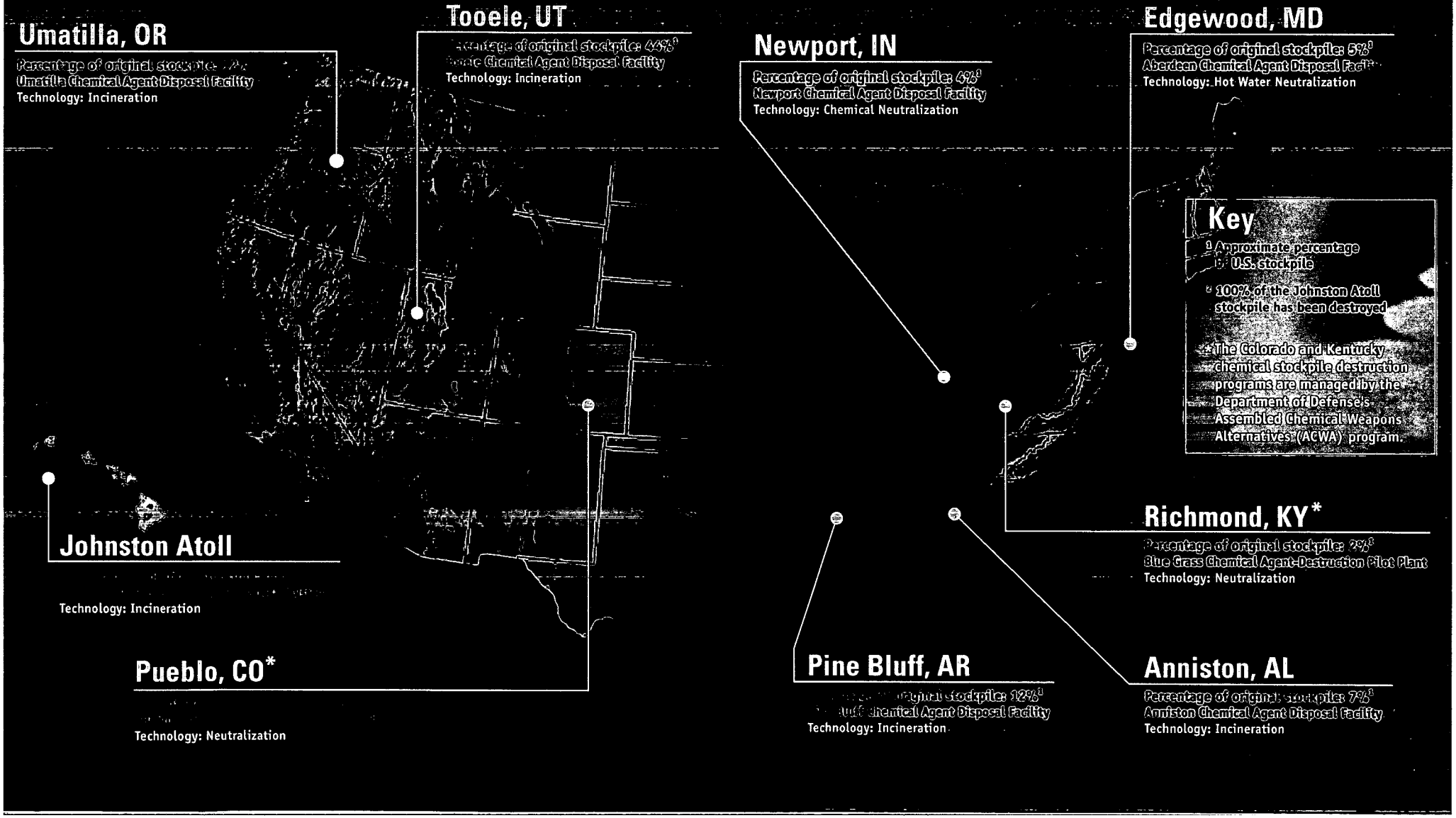

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U.S. Army Chemical Materials Agency

Newport
Chemical Agent Disposal Facility

NECDF
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FACT SHEET

Mission area overview: Alternative Technologies and Approaches Project

What is the Alternative Technologies and Approaches Project?

The Alternative Technologies and Approaches Project, or ATAP, is a mission area under the U.S. Army Chemical Materials Agency. Originally, ATAP was tasked to investigate alternatives to incineration for the disposal of the chemical agent stockpiles at Aberdeen Proving Ground, Md., and Newport Chemical Depot, Ind.

Over the years, ATAP fulfilled its original mission and selected neutralization as the alternative disposal method. ATAP's mission then shifted to focus on pilot testing neutralization at the Indiana and Maryland sites.

After the Sept. 11, 2001, terrorist attacks, ATAP worked with multiple state and federal agencies and developed methods to expedite safe destruction of the Indiana and Maryland stockpiles using neutralization. Approval to use these methods was received in 2002.

Additionally, ATAP monitors business, science and technology for advancements that could be useful in safely destroying the nation's remaining stockpile of chemical agent.

When did the project start and where is it headquartered?

The Army established ATAP in 1994. ATAP headquarters are located at the Edgewood Area of Aberdeen Proving Ground, Md.

Why were the stockpiles in Indiana and Maryland selected?

These locations store only liquid agent in large steel containers without explosives or other weapon components. In addition, each of these stockpiles has only one type of chemical agent. This simple configuration was ideal for piloting alternative disposal methods.

Why was neutralization selected?

After extensive research for technologies that could possibly be used to destroy the agent, ATAP selected three viable alternative technologies and neutralization-based technologies for further examination. Three independent groups reviewed each technology to determine which could destroy the bulk agent stockpile while meeting all of the legal and regulatory requirements for safety, environmental protection and cost effectiveness. All three review groups, as well as the Citizens' Advisory Commissions for Indiana and Maryland, recommended neutralization as the best process.

Who manages the project?

The ATAP project manager, a high-level board-selected Army officer or civilian, oversees hundreds of military, civilian and contract workers dedicated to ensuring the project's success. The ATAP project manager reports to the Chemical Materials Agency. There also are many independent organizations that provide regulatory assistance and oversight to ATAP, including Congress, Department of Defense, U.S. Environmental Protection Agency, National Academy of Sciences' National Research Council, Centers for Disease Control and Prevention and the Organisation for the Prohibition of Chemical Weapons.

How can I learn more?

The Army encourages you to learn more about this important mission by calling the Public Outreach and Information Office toll free at 1(800) 488-0648 or visiting its Web site at www.cma.army.mil. To learn more about neutralization, please read the fact sheet titled *Neutralization of Chemical Agents.*

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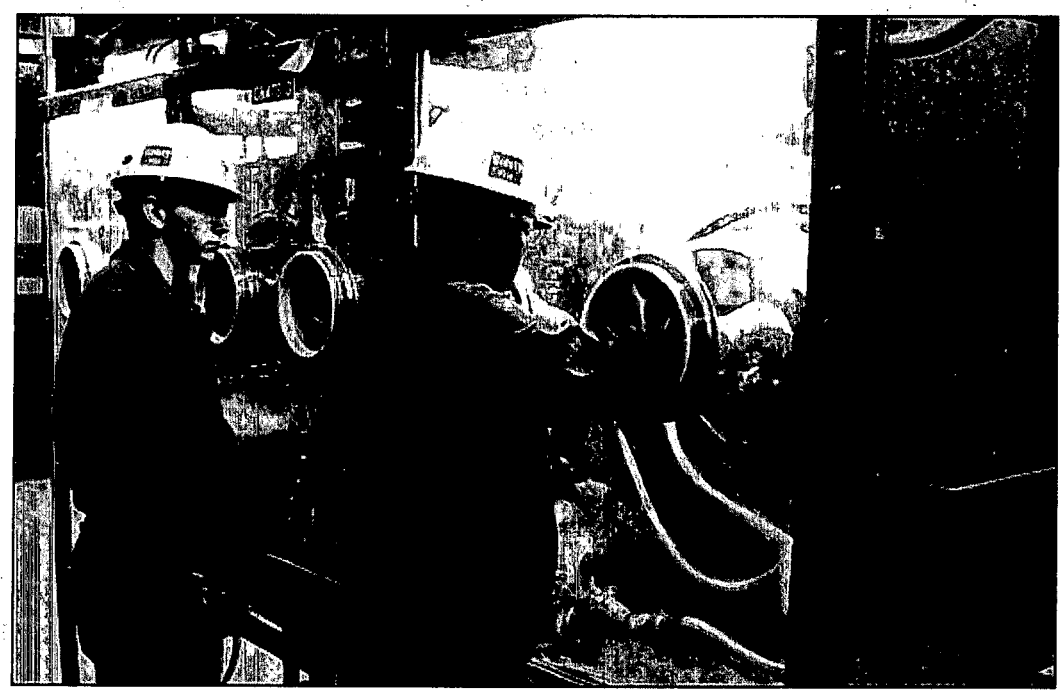
FACT SHEET

Newport Chemical Agent Disposal Facility: Accelerated disposal



Highly-trained operators manually drain agent from the containers by attaching a specialized pumping unit to the container. This is accomplished using the Chemical Agent Transfer System—a protective, glove box system.

Accelerating Disposal

After the Sept. 11, 2001, terrorist attacks, the U.S. Army began evaluating additional methods to reduce the public risk associated with chemical stockpile storage, including methods to accelerate stockpile destruction.

In May 2002, the Army announced plans to accelerate destruction of the nerve agent VX stockpile located at Newport Chemical Depot in Indiana, recognizing that complete destruction of the stockpile offers the best security and permanent protection to the public. The Army worked closely with officials and regulators from the Indiana Department of Environmental Management and the U.S. Environmental Protection Agency to determine the most effective way to safely accelerate nerve agent destruction. The resulting plan was approved by environmental regulators, endorsed by federal and state officials, and briefed to the Indiana Citizens' Advisory Commission.

On May 11, 2002, Under Secretary of Defense for Acquisition, Technology and Logistics E.C. "Pete" Aldridge signed the acquisition decision memorandum giving the Army authority to begin the accelerated disposal project.

General process comparison

Accelerating stockpile destruction involves the same neutralization technology and much of the same equipment approved for use in the original Newport Chemical Agent Disposal Facility. The accelerated process consists of four main steps: draining agent from steel storage containers; neutralizing agent and testing byproduct, a caustic wastewater, to ensure it contains no detectable agent; additional treatment and final disposal of the caustic wastewater; and complete decontamination of the empty steel containers.

Step 1: Draining the agent

Workers drain the nerve agent from the steel container using the chemical agent transfer system, a specially designed glove box system that has been safely used by the Army and the chemical industry for more than 40 years. The agent is pumped out of the container to a holding tank.

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OVER ▶

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FACT SHEET

Neutralization of chemical agents

In 1994, in response to public input, the Army's Alternative Technologies and Approaches Project started investigating alternatives to incineration for the disposal of the chemical agent stockpiles at Aberdeen Proving Ground, Md., and Newport Chemical Depot, Ind. Each of these sites stores only one type of chemical agent.

These stockpiles, referred to as "bulk agent" stockpiles, are unique because they consist of large steel containers filled solely with chemical agent without explosives or other weapon components. This simple configuration was ideal for testing alternative disposal methods.

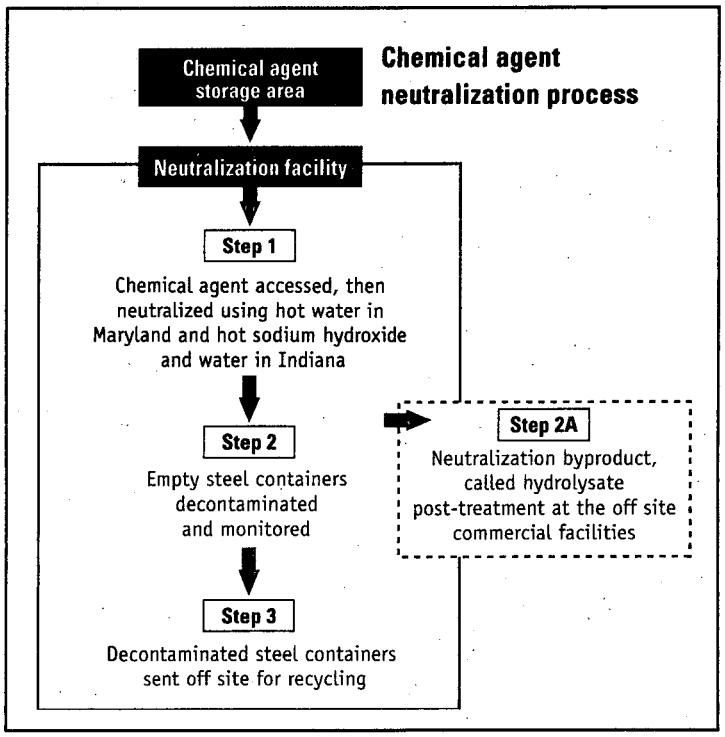
After much study and community involvement, the Army selected neutralization as the best disposal method for the bulk stockpiles. Three independent groups composed of industry, science, safety and technology experts such as the National Research Council, as well as the Maryland and Indiana Citizens' Advisory Commissions, supported the Army's selection. After obtaining the necessary environmental permits, the Army began construction of neutralization pilot test facilities at the Maryland and Indiana sites.

After the Sept. 11, 2001, terrorist attacks, the Army investigated expediting safe neutralization of the two stockpiles. In 2002, the Army, with the agreement of state and federal agencies and officials, implemented accelerated schedules for neutralizing the Maryland and Indiana stockpiles.

Neutralization: Maryland's chemical agent stockpile will be destroyed by draining the agent from the steel storage containers and neutralizing it on site in industrial reactors using hot water. The Indiana stockpile will be neutralized on site in reactors using hot sodium hydroxide and water.

As shown in the diagram below, both processes access the agent, neutralize it and transport the resulting byproduct (hydrolysate) off site to a commercial treatment and disposal facility for post-treatment. Because Newport's hydrolysate contains sodium hydroxide, it is classified as a caustic wastewater. The empty steel containers then are cleaned, monitored to ensure complete decontamination and shipped off site for smelting and recycling.

Hydrolysate treatment: At both sites, the caustic liquid wastewater is considered an industrial hazardous waste and will require further treatment. The hydrolysate from the Maryland and Indiana facilities will be transported to off-site commercial treatment and disposal facilities for biotreatment and final disposal.



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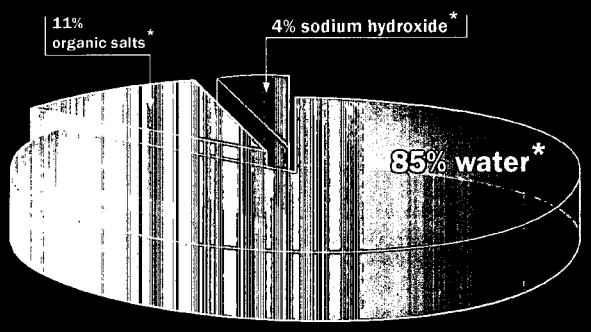
What is Caustic Hydrolysate?

The agent destruction byproduct is a caustic wastewater, called hydrolysate

- No chemical, physical, or toxicity characteristics of nerve agent
- Newport on-site laboratory analyzes to confirm complete agent destruction
- Indiana environmental regulators and international chemical weapons treaty inspectors will be on site and in the laboratory to verify analytical results
- Transported and handled according to strict federal and state environmental hazardous waste and transportation regulations
- Nerve agent cannot reform in caustic wastewater
- pH greater than 13
- Non-flammable
- Thick, pumpable liquid
- Strong odor



* Figures based on operation conditions, at which 8 percent VX will be loaded in each neutralization reaction batch.

FACT SHEET

Newport Chemical Agent Disposal Facility: caustic hydrolysate (caustic wastewater) facts

The Newport Chemical Agent Disposal Facility will destroy the chemical agent stockpile housed at the Newport Chemical Depot by adding bulk liquid agent VX to a mixing tank containing hot (approximately 194 degrees Fahrenheit) sodium hydroxide and water. The liquid agent VX and hot sodium hydroxide and water are agitated for approximately 150 minutes. The VX reacts with sodium hydroxide to produce a caustic byproduct made up of water, sodium hydroxide, and organic phosphorous and sulfur-containing salts. This caustic wastewater is also called hydrolysate. The neutralization process irreversibly destroys the chemical agent. Prior to off site shipment, the caustic wastewater will be analyzed in the NECDF on-site laboratory to ensure there is no detectable agent remaining. Indiana environmental regulators and chemical weapons treaty inspectors will be on site and in the laboratory to verify the analytical results.

Although the caustic wastewater is regulated under the Resource Conservation and Recovery Act (hazardous waste rules), it is less hazardous than many chemicals that are shipped daily over highways. Studies performed on the wastewater concluded that the hazard associated with the material was directly related to the corrosive nature of the solution. The caustic wastewater exhibited no characteristics associated with chemical agent.

Characteristics of caustic wastewater, or hydrolysate:

- Caustic and corrosive — the caustic wastewater has a pH greater than 13 and is corrosive. Industrial strength liquid drain cleaner has a greater pH and is more caustic/corrosive.
- Approximately 85 percent water, approximately 11 percent organic salts and four percent sodium hydroxide.
- Strong odor
- Under the current expected operation conditions at which eight percent VX will be loaded in each neutralization reaction batch, testing has shown that caustic wastewater flammability is eliminated.
- Density is approximately 1.1 g/ml. Caustic wastewater is thicker than water, much like liquid drain cleaner.
- One hundred percent pumpable — caustic wastewater is a liquid and easily transferred to and from tanker trucks.
- Exhibits no characteristics associated with chemical agent.

Caustic wastewater disposal:

The caustic wastewater produced by the Newport neutralization facility will be transported off site to a permitted commercial treatment and disposal facility for biotreatment and final disposal. A certified commercial hazardous waste carrier will transport the caustic wastewater in accordance to all applicable local, state and federal regulations. In fact, several years ago the Army safely transported approximately 2,800 gallons of caustic wastewater to support an Army test program.

Biotreatment, or biodegradation, is a biological process in which bacteria digest organic compounds to form simpler compounds such as carbon dioxide, water and solids. Biotreatment is a common practice used in municipal sewage treatment plants.

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FACT SHEET

Caustic wastewater storage in intermodal containers

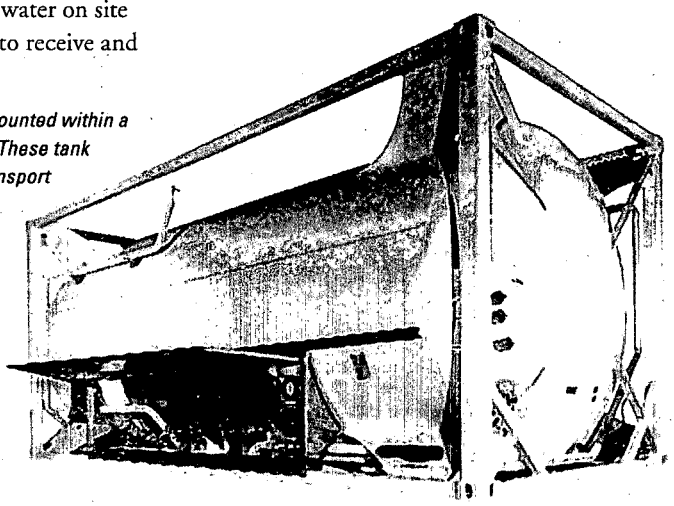
The Newport Chemical Agent Disposal Facility (NECDF) will destroy the chemical agent stockpile housed at the Newport Chemical Depot by adding bulk liquid agent VX to a steel reaction tank containing hot (approximately 194 degrees Fahrenheit) sodium hydroxide and water. The chemical reaction that occurs destroys the chemical agent and produces a caustic byproduct made up of water, sodium hydroxide and organic phosphorous and sulfur-containing salts. The caustic wastewater will be analyzed in the on-site laboratory to ensure that no detectable agent remains. Following laboratory confirmation, the Army currently proposes that the wastewater will be transported off-site for bio-treatment at a permitted commercial treatment and disposal facility.

The Army plans to begin agent destruction operations at NECDF during 2005. Currently, the Army and Parsons, the contractor overseeing the agent destruction project, are proposing an area of NECDF be permitted for temporary storage of the caustic wastewater in intermodal containers, also referred to as ISO containers. A decision on the proposed transport of the wastewater for biotreatment at a permitted facility is still pending, but is expected to be made in early 2005.

By constructing this temporary storage area, the Army can begin agent destruction operations while storing the wastewater on site until a commercial facility is able to receive and treat the wastewater. This approach also allows storage if a selected commercial facility is unable to transport and receive shipments for any reason, including road closures due to severe weather and routine plant maintenance.

ISO containers are designed specifically for transportation by more than one mode, such as truck and rail. These containers conform to the International Organization for Standardization's (ISO) container manufacturing standards. ISO is headquartered in Geneva, Switzerland and sets standards for safe practices world-wide. ISO containers have a cylindrical tank mounted within a protective rectangular steel framework. These tank containers are designed to store and transport liquid material such as the caustic wastewater from NECDF. The current plan is to have available 48 containers capable of holding a minimum of 200,000 gallons of wastewater.

The area of the facility where the ISO containers will be staged awaiting off site transport has been designed with numerous safety and environmental compliance measures to ensure the complete, safe containment of the liquid waste. The ISO containers will help the NECDF begin start up destruction operations and meet its goal of the safe elimination of the nerve agent stockpile at the Newport Chemical Depot – safe for the workers, public and environment.



ISO containers have a cylindrical tank mounted within a protective rectangular steel framework. These tank containers are designed to store and transport liquid material, such as the caustic wastewater from NECDF.

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or contact the NECD/NECDF Public Affairs Office (765) 245-4475

or visit the Newport Chemical Stockpile Outreach Office P.O. Box 279 140 South Main Street Newport, Indiana 47966 Phone: (765) 492-4445 Fax: (765) 492-4475

NECDF: Hydrolysate analysis

What do we mean when we say that hydrolysate is non-detect for VX with a Method Detection Limit at or below 20 parts per billion?

State regulators, such as the Indiana Department of Environmental Management, use standard terminology to define the degree of pollution or level of contaminants present in a substance. To provide a common foundation, definitions for Limit of Detection (LOD) and Method Detection Limit (MDL) are defined in the Indiana Administrative Code. These definitions are used when analyzing for VX in the hydrolysate at Newport Chemical Depot to ensure the safety and health of the workers, public and environment.

Limit of detection

The Indiana Administrative Code (327IAC 5-1.5-26) defines the Limit of Detection, or LOD, as the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte (substance) concentration is greater than zero for a particular analytical method and the matrix sample.

For example, suppose we have a sample of ordinary table salt (our matrix) and we want to analyze the amount of a chemical in the salt, such as iodine (the analyte), using a particular analytical method. We must know the smallest amount of iodine that can be detected in table salt using this method. If the scientifically accepted LOD for iodine in table salt using this analytical method is 40 parts per million, then we know that we cannot reliably tell if iodine is present in amounts below that level. If we set the detection limit too low, we may not be able to measure and report with a high degree of certainty, such as the 99 percent confidence requirement set in the Indiana Code. If we set the detection limit too high, we may not be able to detect the target contaminants or pollutants in low levels.

Method Detection Limit

The Indiana Administrative Code (IAC 327 IAC 5-1.5-31.Sec31) defines the Method Detection Limit, or MDL, as the minimum concentration of an analyte (substance) that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero as determined by the procedure set forth in 40 CFR 136, Appendix B, the Environmental Protection Agency's code of federal register guidelines for establishing test procedures for the analysis of pollutants. By comparing the two definitions, the MDL and the LOD are the same, except that the MDL also specifies the manner used in determining the minimum concentration of analyte.

For the analysis of VX within the hydrolysate, the Army specifies that it must be below 20 parts per billion (ppb). This means that we have 99 percent confidence that we can detect VX, if VX is present in the hydrolysate at a concentration with an MDL of 20 ppb or higher.

Non-detect

When we use the term "non-detect" we mean that the analytical results are less than the MDL of 20 ppb. In other words, non-detect is confirmation that there is no VX at or above 20 ppb. The Army Center for Health Promotion and Preventive Medicine has calculated that an exposure to hydrolysate with a VX concentration less than 80 ppb would cause no observable nerve agent exposure signs or symptoms.

Consequently, the Army set the MDL at 20 ppb providing a large margin to ensure safety. By ensuring that the hydrolysate contains no detectable quantities of VX at amounts over 20 ppb, the Army has taken additional measures to ensure the safety of the workers, public and environment in the handling and transport of hydrolysate.

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U.S. Army Chemical Materials Agency

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FACT SHEET

Hazards of caustic hydrolysate (caustic wastewater)

The Newport Chemical Agent Disposal Facility (NECDF) has been designed and constructed to safely destroy more than 1,200 tons of liquid nerve agent VX currently stockpiled at Newport Chemical Depot (NECD), Indiana. The NECDF will use a chemical neutralization process called caustic hydrolysis in which VX (8-16 percent by weight) will be mixed and then heated in a reactor with sodium hydroxide and water to destroy the nerve agent. The byproduct of the agent destruction process is a caustic organic-salt wastewater, also called caustic hydrolysate. This caustic wastewater will require additional treatment before final disposal.

The Army's preferred option for final disposition of the caustic hydrolysate is transportation to a permitted commercial hazardous waste facility where it will undergo additional treatment before final disposal. Commercial hazardous waste treatment facilities have the experience and expertise to properly treat the caustic wastewater. They already treat materials with similar characteristics to the caustic wastewater on a routine basis.

The Army has a commitment to the public that caustic hydrolysate will not leave the NECDF until the on-site laboratory confirms that the caustic wastewater is non-detect for VX, with a Method Detection Limit of less than or equal to 20 parts per billion.

Expected hazards associated with the caustic wastewater:

NOTE: Fifty percent sodium hydroxide is shipped throughout the United States daily.

FLAMMABILITY

Testing has shown that the caustic wastewater is not flammable.

CORROSIVENESS

Because excess sodium hydroxide is present in the caustic wastewater, chemical burns to the skin are the greatest risk of the caustic wastewater.

TOXICITY

The chemical destruction of VX results in breakdown products that include the sodium salts of EA2192, EMPA, MPA, and thiolamine. In their pure form, and by themselves, these individual compounds possess their own toxicities. Thiolamine produces a strong odor but is not toxic and will be completely destroyed in the pretreatment step at the commercial facility.While the following statement about the sodium salts is not couched in scientific or technical terms, it is meant to provide the public toxicity information in understandable terms; the sodium salts in the caustic wastewater are comparable to regular table salt in toxicity.

However, in order to get a true picture of the toxicity of caustic hydrolysate it was necessary that toxicity studies be performed on the caustic wastewater itself to determine the effect of the combination of these compounds. That is why, as part of the overall development program, the Project Manager for Alternative Technologies and Approaches evaluated the toxicity of the caustic wastewater as a whole.

The dermal (skin) and oral toxicity of the caustic wastewater was evaluated in February 1999. This testing established that hydrolysate did not qualify as a poison but as a corrosive capable of damaging skin and producing gastrointestinal injury, as would be expected for similar caustic solutions.

CONCLUSION

The Army, as part of the development program, had oral and dermal toxicity studies performed on the caustic hydrolysate. The key findings were that the liquid waste no longer exhibited any agent characteristics. In fact, the toxicity and hazard of the caustic wastewater are directly related to the corrosive nature of the solution, as would be expected for any similar caustic solutions.

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OVER ▶

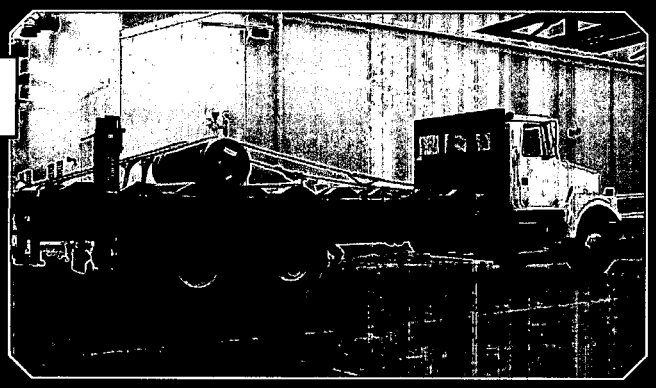
U.S. Army Chemical Materials Agency

Newport

Chemical Agent Disposal Facility

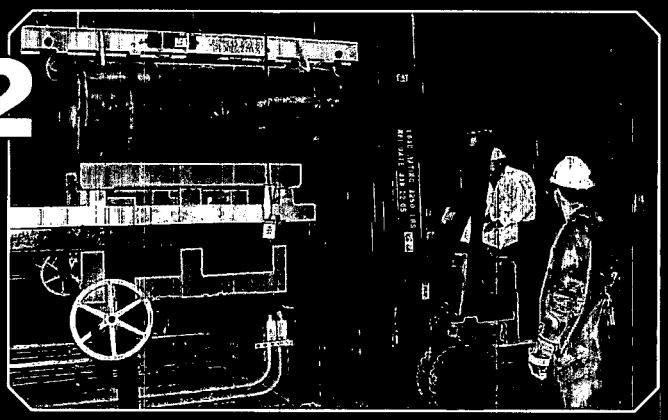
Agent Destruction Process

1



Steel containers of liquid nerve agent are transported by truck from a secure storage area to the Newport Chemical Agent Disposal Facility.

2

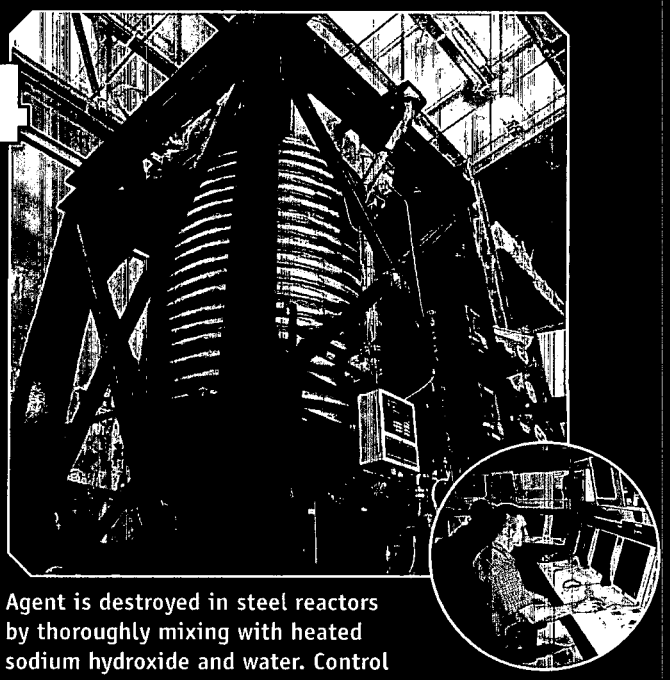


A specially designed forklift loads the steel containers into the Chemical Agent Transfer System (CHATS) inside the agent destruction facility.

3

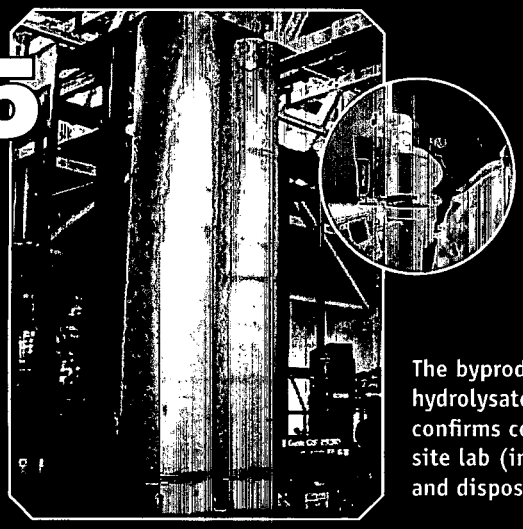
Highly-trained operators manually drain agent from the containers by attaching a specialized pumping unit (inset) to the container. This is accomplished using the Chemical Agent Transfer System—a protective, airtight glovebox system.

4



Agent is destroyed in steel reactors by thoroughly mixing with heated sodium hydroxide and water. Control room operators direct and monitor the entire process remotely, using a state-of-the-art control system (inset).

5



The byproduct created from agent destruction is known as caustic wastewater or hydrolysate. Wastewater is transferred to special tanks until the on-site laboratory confirms complete agent destruction. Once agent destruction is verified at the on-site lab (inset), the wastewater is transported to a permitted commercial treatment and disposal facility for final treatment.

FACT SHEET

Newport: Making chemical weapons history

Community pride and small town spirit characterize the Newport, Ind., area. This beautiful mid-West region also is playing a vital role in national and global affairs. Near Newport, the U.S. Army is making chemical weapons history at its Newport Chemical Agent Disposal Facility. This facility will destroy a stockpile of chemical agent that has been stored at the Newport Chemical Depot for nearly 40 years.

Where is the chemical agent located?

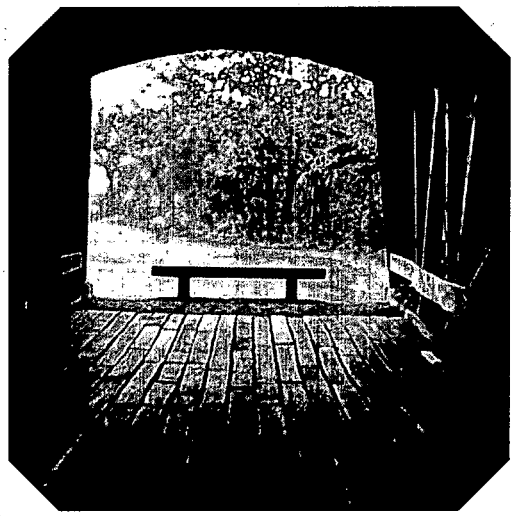
The chemical agent, a highly toxic chemical stored in sturdy steel containers, is housed safely at the Newport Chemical Depot. Contrary to popular belief, the chemical agent is not a gas, but an oily liquid. The depot, which is a military installation, opened in 1941 as the Wabash River Ordnance Works. Various warfare materials, including chemical agent, were manufactured at this site. In the late 1960's, the United States stopped production and shipment of chemical agent and weapons. Since then, this stockpile of chemical agent, which the United States never used, has remained in safe storage at the depot.

What is the Newport Chemical Agent Disposal Facility?

The Newport Chemical Agent Disposal Facility will safely and efficiently neutralize the chemical agent stockpiled at the depot.

How will the chemical agent be destroyed?

Following the Sept. 11, 2001, terrorist attacks, the Army has expedited safe neutralization of the Newport stockpile using sodium hydroxide and standard industrial equipment. The resulting byproduct, called hydrolysate, is similar in characteristics to commercial household drain cleaners. It will be tested to ensure that the chemical agent has been destroyed and then will be treated and disposed.



Who will destroy the chemical agent?

The Army's Chemical Materials Agency is responsible for safely disposing of the stockpile. In 1999, the Army contracted with Parsons, an architectural engineering firm from Pasadena, Calif., to build, test, operate and close the demilitarization facility. Many other organizations work in partnership with the Army to complete this mission safely. Among these are the Indiana Department of Environmental Management, the state of Indiana, the U.S. Environmental Protection Agency, Region V, and the Centers for Disease Control and Prevention. Some of your family members, friends or neighbors may work on this important project.

How long will it take to destroy the chemical agent?

Construction of the original Newport Chemical Agent Disposal Facility began in April 2000, and was completed in 2003. A period of testing, called systemization, followed construction and will continue until operations begin. After all operations are completed and the empty storage containers are cleaned and sent offsite for recycling, the facility will be closed.

CMA

For more information, contact the Chemical Materials Agency Public Affairs Office at 1(800) 488-0648 or www.cma.army.mil

or visit the Newport Chemical Stockpile Outreach Office
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U.S. Army Chemical Materials Agency

Newport
Chemical Agent Disposal Facility

NECDF
Newport Chemical Agent Disposal Facility

FACT SHEET

Characteristics of Nerve Agent VX

Nerve agent VX, which is stored at Newport Chemical Depot in Newport, Ind., is a member of the organo-phosphate family, similar to present-day pesticides. It is a clear and odorless liquid with an appearance similar to that of motor oil. VX can become an aerosol (very small droplets) through explosion, or a vapor through ignition. It is heavier than water and evaporates 2,000 times more slowly.

VX is highly toxic in its liquid, aerosol and vapor forms. It is most hazardous when absorbed through the skin. As a vapor or aerosol, it can be inhaled and absorbed through the lungs. It also can be absorbed through the digestive system if eaten or swallowed.

VX is a rapid-acting, lethal nerve agent that affects the nervous system by interfering with the signals sent from the brain to vital organs and other parts of the body. VX affects the body by blocking the action of the enzyme acetycholinesterase (ACh). When the enzyme is blocked, messages from the brain are short-circuited at the nerve endings. As a result, hyperactivity occurs in the organs stimulated by these nerves. If VX enters the body, convulsions or death can result.

Atropine and 2-PAM Chloride are pharmaceutical antidotes that relieve the symptoms of VX exposure. They must be injected immediately after exposure to be effective. Common household bleach can be used to decontaminate the skin if contact is made with VX.

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Public outreach and involvement

The U.S. Army Chemical Materials Agency is responsible for destroying all U.S. chemical weapons stockpiles while ensuring the safety of the public, the workforce and the environment. The Army recognizes the importance of an informed and involved public in disposing of chemical weapons. Thus, CMA established the public outreach and involvement program to provide a community forum that enables citizens to learn about the program and provide input regarding its activities.

The Chemical Stockpile Emergency Preparedness Program works with the communities around CMA's six stockpile sites to enhance emergency plans and provide chemical accident response equipment and warning systems. CSEPP uses public outreach and involvement to keep the communities informed. For more information on CSEPP public outreach activities, contact John Yaquiant at (410) 436-4292 or visit the CSEPP Web site at http://www.cma.army.mil.

The U.S. Army Non-Stockpile Chemical Materiel (NSCMP) Program leads the nation in development and utilization of advanced technology to safely eliminate America's non-stockpile chemical materiel in a safe, environmentally sound and cost-effective manner. A division of the U.S. Army's CMA, NSCMP researches and develops treatment options and destruction plans that comply with all federal, state and local regulations and encourages public participation in its activities. For additional information, visit the NSCMP Web site at http://www.cma.army.mil or call Karen Drewen at (410) 435-3445.

Public outreach offices

CMA maintains outreach offices in six communities where chemical weapons disposal facilities are planned or operating. These communities are Tooele, Utah; Anniston, Ala.; Hermiston, Ore.; Pine Bluff, Ark.; Newport,Ind.; and Edgewood, Md. The local outreach offices provide citizens with a convenient, "one-stop" source of information about the program. The offices work closely with disposal facilities, storage depots, emergency preparedness agencies, elected officials, community groups, individual citizens and others to ensure a comprehensive public outreach and involvement program.

Outreach services

Each outreach office has a large repository of fact sheets, brochures, exhibits and technical studies available to the public. In addition, outreach staff frequently coordinate presentations, hold public meetings, distribute information materials and attend community events. Other outreach activities include community roundtables, open houses and joint activities with local agencies, businesses and community groups.

Community feedback

As part of the program's commitment to public outreach and involvement, CMA encourages feedback from the community regarding its outreach efforts. This feedback enables CMA to evaluate the effectiveness of its efforts to increase community awareness and understanding of the program.

Citizens' Advisory Commission

Each community in which the Army's facilities are planned or operating has a Citizens' Advisory Commission, or CAC, that represents the community's interests regarding the program's activities.The governor appoints each CAC member to serve an unlimited term at his discretion.

The community's advocate

The commission serves as the community's voice, ensuring that program decisions are in the community's best interest. Although the CAC does not make program decisions, it does provide the Army with guidance and recommendations. CAC meetings are open to the public and announced in local publications. The public is encouraged to attend the meetings to discuss the program and ways to become involved in the decision making process.

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Indiana Citizens' Advisory Commission

In 1993, as part of the National Defense Act, Congress directed the Army to create Chemical Demilitarization Citizens' Advisory Commissions (CACs) for Indiana, Kentucky and Maryland, where low-volume chemical weapons stockpiles exist. The Army also established CACs in states that maintain high-volume chemical weapons stockpiles, such as Alabama, Arkansas, Colorado, Oregon and Utah.

Public involvement is key to the success of the Army's chemical demilitarization program. The Army encourages the public to participate in all phases of the program's decision-making process. The CACs provide a vital information link between state agencies, the community and the Army.

The Indiana CAC has nine members, all of whom are appointed by the governor. Seven are from the region where the stockpile is located, and two are state officials with technical expertise. Commission members are not paid, but the CAC does receive funding from the Army to cover administrative costs and travel expenses when appropriate.

The CAC is required to meet with a representative from the Secretary of the Army at least twice per year, although many meet more often. At these meetings, members discuss issues surrounding the chemical demilitarization program and its impact on Newport, neighboring communities and the state of Indiana.

The CAC provided the Army with valuable input regarding the selection of specific alternative technologies for pilot testing. In a presentation before the Department of the Army and the Defense Integrated Process Team, the Indiana CAC co-chairman emphasized the commission's support for neutralization pilot testing. This level of participation is indicative of the partnership between the Army and the CAC.

For more information regarding CAC activities for Indiana contact the Newport Chemical Stockpile Outeach Office at 765-492-4445, or 1-866-300-9034, or visit our Web site at http://www.cma.army.mil.

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Information repositories: Newport Chemical Depot

In an effort to increase public awareness and involvement in the chemical demilitarization program at Newport Chemical Depot, Ind., the Army has established eight information repositories in the communities surrounding the installation. The purpose of these repositories is to provide local officials, organizations and interested citizens with open and convenient access to accurate, detailed and current data regarding the program at Newport Chemical Depot.

The Army realizes the importance of public involvement in disposing of America's chemical stockpile in a safe and environmentally friendly manner. In fact, the Army encourages members of the community to be involved in every step of the decision-making process.

Updates and notification

Information at each of the repositories is continuously updated and regularly checked to ensure that important program materials are available to the public. Information repository locations and their hours of operation are periodically published in local newspapers and publicized during public meetings. In addition, citizens are notified of repository locations through fact sheets and newsletter mailings.

Central repository

In April 1997, the Army established the Newport Chemical Stockpile Outreach Office. This office serves as a forum for the community to obtain information on the safe storage and disposal of nerve agent VX, as well as other programs at Newport Chemical Depot.

A variety of resources including reports, brochures, fact sheets and exhibits are available through the Newport Chemical Stockpile Outreach Office. Citizens, businesses, public interest groups and civic organizations are encouraged to visit the outreach office to become familiar with Newport Chemical Depot's chemical materiel programs.

Repository locations

Newport Chemical Stockpile Outreach Office
140 S. Main St.
Newport, IN 47966
(765) 492-4445

Newport Public Library
350 E. Market St.
Newport, IN 47966
(765) 492-3555

Clinton Public Library
Fourth and Blackman streets
Clinton, IN 47842
(765) 832-8349

Rockville Public Library
106 N. Market St.
Rockville, IN 47872
(765) 569-5544

Danville Public Library
319 N. Vermillion St.
Danville, IL 61832
(217) 477-5220

Vigo County Public Library
1 Library Square
Terre Haute, IN 47807
(812) 232-1113

Dana Public Library
140 N. Maple St.
Dana, IN 47847
(765) 492-3555

Covington Public Library
622 Fifth St.
Covington, IN 47932
(765) 793-2572

Montezuma Public Library
212 Crawford St.
Montezuma, IN 47862
(765) 245-2772

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FACT SHEET

NECDF Ton Container Line

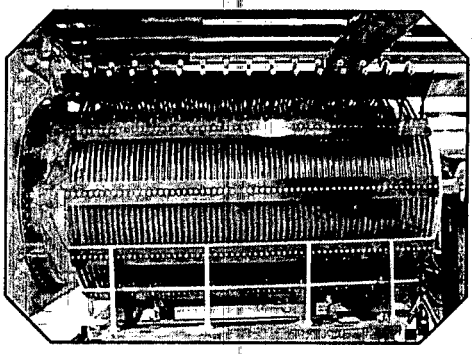
Decontaminating Empty Steel Containers

During chemical agent destruction operations at the Newport Chemical Agent Disposal Facility (NECDF), carbon steel containers, often referred to as ton containers or "TCs," containing chemical agent VX will be moved from the depot's high-security storage area to the high-security disposal facility. Operators use a chemical agent transfer system (CHATS) to drain the liquid agent VX from the TCs and transfer the agent to holding tanks. The agent is then transferred from the holding tanks to Neutralization Vessels where it is destroyed by thorough mixing with heated sodium hydroxide and water.

The empty steel containers are triple rinsed with hot sodium hydroxide and water through the glove box.

While in the glove box the empty containers undergo initial decontamination. Highly-trained operators triple rinse the container with hot sodium hydroxide and water. Following this rinse cycle, hot air is circulated through the interior of the container to evaporate any remaining water. Before leaving the glove box, the interior of the container is examined with an instrument called a "borescope" to ensure the container is clean and dry. The exterior of the container is monitored to ensure there is no remaining contamination prior to removal from the CHATS.

The steel container is then transported to a temporary storage area before undergoing final decontamination. The final process involves placing the steel container inside a metal (steel) chamber. The temperature of the chamber in which the TC is placed is increased using a process known as induction heating, which uses electrical coils to increase the temperature. Induction heating is a proven process that has been used by the metal industry to heat metal for more than 40 years.



Coils surrounding the steel chamber in which the container is placed are heated, this raises the temperature of the container with radiant heat.

Through heat radiating from the surrounding steel chamber, the temperature of the container is raised to more than 1000°F and maintained for fifteen minutes. This process ensures that the container, which weighs about 1,500 pounds empty, is completely decontaminated. The container is then allowed to air cool, and once this process is completed, the container is transported from the depot to a commercial recycling center.

This approach does not require physical contact by operators and provides fast, consistent decontamination of the TCs. This approach also ensures the steel is completely decontaminated while minimizing the production of wastewater from TC decontamination that requires off-site treatment. The original clean out approach required repeated high-pressure wash cycles that generated large volumes of caustic wastewater requiring off-site transportation to a commercial treatment and disposal facility.

The installation of this ton container line is a major feature to safely complete the mission at NECDF.

CMA

For more information, contact the Chemical Materials Agency Public Affairs Office at 1(800) 488-0648 or visit their Web site at www.cma.army.mil

or contact the NECD/NECDF Public Affairs Office (765) 245-4475

or visit the Newport Chemical Stockpile Outreach Office P.O. Box 279 140 South Main Street Newport, Indiana 47966 Phone: (765) 492-4445 Fax: (765) 492-4475