Testimony of

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Good morning, I am Carol Andress, Economic Development Specialist with Environmental Defense.[1] Thank you for the opportunity to speak on the issue of security of America's chemical facilities.

The problem of securing chemical facilities is daunting. Thousands of facilities store and use dangerous chemicals in large quantities that could pose major risks to their neighbors if released. According to EPA records, approximately 2500-2800 facilities would each put any of over 10,000 people at risk of injury or death in the event of a major chemical release.[2] Nearly 5,000 facilities store more than 100,000 pounds of at least one EPA-designated extremely hazardous substance.[3]

The terrorists attacks of 9-11 have focused considerable attention to the threats posed by a deliberate attack on these dangerous stockpiles. However, even before 9-11, environmental and labor organizations highlighted the potential dangers to workers and fenceline communities from these facilities. Accidents, malfunctions, and other workplace incidents can be deadly.

While the increased attention from 9-11 is good, the bad news is that little progress has been made. Progress has been hindered for two reasons: (1) reliance on voluntary measures; and (2) sole focus on physical security. The good news is that many facilities have safer ways of doing business that eliminate or significantly reduce their reliance on dangerous chemicals. The challenge is to spur these changes soon so that security money is well invested. After all, why spend money trying to protect chemicals that don't need to be there?

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[1] Environmental Defense, a leading national nonprofit organization, represents more than 400,000 members. Since 1967, Environmental Defense has linked science, economics, law and innovative private sector partnerships to create breakthrough solutions to the most serious environmental problems.

[2] Dana Shea, Congressional Research Service. "RMP facilities in the United States as of May 2005," June 27, 2005

[3] Jim Belke, U.S. Environmental Protection Agency. "Chemical accident risks in US industry—a preliminary analysis of accident risks data from US hazardous facilities," September 25, 2000.

Risks are Substantial, Widespread, and Unaddressed

Security experts have repeatedly warned this committee and others of the risks posed by chemical stockpiles and the need for Congressional action to address hazards that vulnerable chemical plants pose to workers, firefighters, police officers, and surrounding communities. Attachment 1 includes a list of 18 federal agencies and organizations that have warned about the dangers of a terrorist attack at a chemical facility, including warnings from--

- Former deputy homeland security advisor Richard Falkenrath who testified to Congress in January, 2005 that "since 9/11 we have essentially done nothing" to reduce the vulnerability of the national chemical sector. Mr. Falkenrath repeated his concerns in testimony to this committee in April.

- Former Department of Homeland Security (DHS) Inspector General Ervin who noted in a February 2005 op-ed, "Complicating the picture further is the fact that 85 percent of America's critical infrastructure is owned by the private sector, which has been reluctant to protect itself (and which the government has been reluctant to prod into protecting itself)."

- The Army Surgeon General's Office, which ranked the potential for attacks on chemical plants second only to bio-terrorism as the top threat confronting America's homeland security.

- A RAND study sponsored by the Air Force reported "Toxic warfare is a threat not just for U.S. forces engaged in military operations but also for civilians within the United States. This risk is increased by the wide availability of toxic materials throughout the United States, together with the proximity of industrial operations to large urban centers."

The Congressional Research Service (CRS) recently complied a report based on companies' estimates of people living within an area around a facility that could be affected by a worst-case chemical accident (see Attachment 2 for CRS report). At each of approximately 110 chemical facilities, more than a million people live in the vulnerable area surrounding the plant; at 550-600 chemical facilities more than 100,000 people live close enough that they could affected by a release. Moreover, the economic impact, which is not reflected in these numbers, could be devastating if neighboring businesses are shuttered following a chemical release.

Nor is this a hypothetical issue. The National Response Center has identified over 3,000 major chemical accidents at industrial facilities over the past 15 years. So far in 2005 alone, I know of three incidents that have resulted in more than 50 deaths and hundreds of injuries, including--

- Ten people killed in Graniteville, South Carolina in January after inhaling pure chlorine gas. Several of the dead or injured were emergency responders.
- BP refinery explosion in Texas in March that killed 15 and injured 170.
- Chlorine release in China in March that resulted in 28 people dead and 350 hospitalized.

In light of all of this, what have facilities been doing to reduce risks? The industry, DHS, Coast Guard and others have made laudatory efforts to boost security, but the fact is that no amount of fenceline security will protect facilities from a deliberate attack.

In fact, investigative reporters have repeatedly found holes in security. At numerous facilities, reporters have been able to document lax or non-existent security. Several of these lapses are at facilities that are members of American Chemistry Council's (ACC) Responsible Care program. In May 2005 a New York Times reporter noted inadequate security at the Kuehne chemical plant, in northern New Jersey, which has 12 million people living within its vulnerability zone.

Carl Prine with the Pittsburgh Tribune Review and CBS news team have made more than 100 visits to facilities in Baltimore, Pittsburgh, Chicago, Houston and elsewhere. Their visits included a facility in Baltimore that is perhaps a poster child for why chemical security focused solely on physical security is insufficient. This facility was subject to three separate, but overlapping programs:

1. American Chemistry Council's guidelines and in fact the facility had already passed the company's mandatory "third party" verification process;
2. Maritime Transportation Security Act (MTSA) because it is located on a navigable waterway; and
3. A Baltimore ordinance on mandatory security plans.

A potential 4th program that also may cover this facility is a chemical security law recently passed by the state of Maryland.

Despite these security requirements, a reporter was still able to enter an unguarded gate and reach two fully-loaded chlorine railcars, then leave without ever being challenged. (See Attachment 3 for copies of Tribune Review and NY Times articles)

So the problem is serious, pervasive, and can't be addressed with only guards, gates and guns.

Safer Options are Available

The good news in protecting against chemical terrorism is that we have options better than increasing physical security and hoping terrorists cannot evade fences and guards. The most cost-effective and sustainable way to achieve security is to design production processes and products in a way that is inherently safer. [4]

Unlike a physical security measure, an inherently safer approach offers many benefits. By reducing the source of the problem—the dangerous chemicals or processes—it cuts the need for security measures and minimizes the likelihood of a major chemical accident. It also reduces regulatory hassles—for example, a facility that cuts its chemical use to below certain thresholds no longer has to submit a Risk Management Plan. Many high-hazard industries could become intrinsically safer and eliminate concerns about terrorist attacks.

[4] Kenneth Geiser, "Primary Measures Safer, Cheaper, Better." The Environmental Forum, January/February 2004

Numerous wastewater treatment and drinking water treatment facilities have stopped using deadly chlorine gas in recent years. The added costs are small and are more than made up for by the savings in security expenses and the peace of mind that comes from knowing that residents and workers are no longer at risk.

For example, in 1999, after 85 years of using chlorine gas to disinfect drinking water, the Cleveland Water Division started to systematically eliminate chlorine gas at three local drinking water treatment plants. By early 2001, railcars of chlorine gas were gone. The costs of switching to safer chemicals were manageable (about $700,000 for one of the plants) and easily absorbed by an agency that spends several million dollars on capital improvements annually.[5] Several years earlier, the local sewage utility, Northeast Ohio Regional Sewage District (NEORSD) , converted its three wastewater treatment facilities to a liquid bleaching system with good results.

The impact of these changes means that over a million Cleveland residents, who otherwise could have been in harm's way in the case of a terrorist act or accident, no longer have to fear a chlorine gas release from local water utilities. Tim Tigue, Director of Operations for NEORSD, said" We'll never go back to chlorine gas. We owe it to our ratepayers and our workers."

Sample of wastewater and water facilities that have eliminated chemical hazards

Facility	City	State	New disinfection method	Population previously in vulnerability zone
Middlesex County Utilities Authority	Sayreville	NJ	hypochlorite	10,740,000
Northeast Water Pollution Control Plant	Philadelphia	PA	hypochlorite	1,575,971
Back River Wastewater Treatment	Baltimore	MD	hypochlorite	1,470,000
Baldwin Water Treatment Facility	Cleveland	OH	hypochlorite	1,400,000
R. M. Clayton WRC	Atlanta	GA	ultraviolet light	1,151,993
Wyandotte Wastewater Treatment Facility	Wyandotte	MI	ultraviolet light	1,100,000
Niagara Falls	Niagara Falls	NY	hypochlorite	1,100,000
Nottingham Water Treatment Facility	Cleveland	OH	hypochlorite	1,100,000
Mill Creek WWTP	Cincinnati	OH	hypochlorite	860,000
Jefferson Parish East Bank WWTP	Harahan	LA	hypochlorite	790,000
East Section Reclamation Plant	Renton	WA	hypochlorite	650,000
Little Falls Water Treatment Plant	Totowa	NJ	hypochlorite	430,000
Buckman Water Reclamation Facility	Jacksonville	FL	ultraviolet light	360,000
Portland	Portland	OR	hypochlorite	157,000
South Valley Water Reclamation Facility	West Jordan	UT	ultraviolet light	131,968

In addition, two thirds of the nation's oil refineries use safer processes that do not rely on highly toxic hydrofluoric acid in their processing.[6] Power plants too could eliminate

[5] Cleveland Water Division's website notes that in 2003 Capital Improvement Program expenditures totaled $81.9 million (www.clevelandwater.com/annual_report).
[6] "Needless Risk: Oil Refineries and Hazard Reduction," US Public Interest Research Group Education Fund, October 2003.

their reliance on extremely hazardous chemicals. For example, the 69 power plants using a aqueous ammonia pose a substantially smaller danger than the 166 power plants using ammonia gas.[7]

Other similarly situated plants have yet to implement common sense solutions to reduce hazards. To spur more widespread progress, Congress should enact a program with the several key elements:

1. Mandatory Safety and Security

Federal legislation to address the problem of terrorism at chemical facilities must put a priority on cutting the presence of extremely dangerous chemicals in populated areas. This cannot be done through voluntary programs; market mechanisms are simply inadequate to achieve the important goal of reducing potential catastrophic hazards. From my research of hundreds of wastewater and drinking water facilities, I found that facilities that are facing daily questions about operational efficiency, water quality standards, and financial performance, have little interest in dealing with catastrophic hazards that appear remote.

Facilities that did improve often did so as a result of external pressure, such as pressure from local officials or neighbors. The mayor of Cincinnati, Ohio, for example, set up a task force after 9-11 to examine local risks. They found that the Mill Creek Wastewater Treatment Plant was the single greatest risk to residents and then worked to eliminate that risk in a matter of weeks. In Cleveland OH, it took an aggressive Local Emergency Planning Committee to persuade utility officials to eliminate chlorine gas. Blue Plains Wastewater Treatment in Washington DC accelerated their plans to change following 9-11, but it helped that they already had plans to change in response to complaints from neighbors, including Bolling AFB and the Anacostia Naval Research Center.

Federal legislation must supply uniform outside pressure by establishing mandatory policies. Specifically, Congress should mandate that facilities using large quantities of dangerous chemicals must evaluate ways to:

(1) switch to safer chemicals or processes,
(2) reduce the amount of dangerous chemical used, or
(3) reduce the amount stored on site.

When those options are practical, the facility should be required to implement them. Facilities, especially high-risk facilities, should be expected to make significant investments in reducing the quantity and nature of the hazardous chemicals on site.

Even so, not every facility will be able to eliminate or significantly reduce hazards. When facilities find that—

(1) there is no safer process that is technologically feasible;
(2) all identifiable safer processes are prohibitively expensive in comparison to the potential damages of an accidental release; or

[7] "Unnecessary Dangers: Emergency Chemical Release Hazards at Power Plants," Working Group on Community Right-to-Know, July 2004.

(3) available alternatives would create an equal or greater hazard to public health and the environment;

they should provide a justification for why an alternative approach is not practicable.

Three states—New Jersey, Massachusetts, and California--have laws aimed at inspiring facilities to cut their use of certain toxic chemicals. New Jersey's Toxic Catastrophe Prevention Act (TCPA) is the only one that focuses specifically on accident prevention. Under that program facilities that have an "extraordinarily hazardous substance" at or above a certain threshold must submit a risk management plan for state approval, pay a fee based on the amount and type of chemical on site, and assess ways to prevent accidents. As a result of this program, numerous facilities have reduced or eliminated their use of dangerous chemicals, including 290 wastewater treatment facilities that have eliminated their use of chlorine gas.

2. Trust but Verify

Most facilities will make a good faith effort to implement safer approaches. However, this is far too important to rely solely on good intentions; facility owners and operators must be accountable to federal authorities and the public for reducing hazards. Accountability measures should include:

Government oversight, including federal review and approve of security/safety plans.

Public disclosure of the certification, signed by the CEO, that the company was unable to implement alternative approaches. The certificate should be public, in the same controlled manner as the Risk Management Plans, so that communities and agencies can know if facilities are doing everything reasonable to reduce catastrophic hazards.

Government intervention: DHS should have the authority to intervene in cases where the agency finds that a facility has acted in bad faith and not done a credible job of implementing cost-effective safer approaches. For example, when a large portion of an industry sector has reduced or eliminated risks and yet a similarly situated facility that could endanger thousands of people has refused to act.

Linking public funds with safer operations: Taxpayer money should not be spent at facilities that pose an unnecessary risk to the American public. This is especially applicable to sewage treatment and water treatment facilities that historically have received large amounts of federal and state funding as part of the State Revolving Loan Fund. There is simply no excuse anymore for chlorine gas to be used at urban water and sewer utilities—the risks are substantial and affordable alternatives are readily available. Congress should allocate future funding only to facilities that eliminate or significantly reduce chemical hazards to workers and nearby residents.

3. No Loopholes for Voluntary Programs

Safety and security requirements established by federal legislation must apply to all facilities that pose a significant risk and avoid creating loopholes for specific sectors simply because they are part of a voluntary program.

For example, the chemical industry has long argued that it should be allowed to implement its own voluntary programs rather than comply with federal standards. The industry supports having federal standards, so long as their companies get special exemptions.

We commend these early efforts to prevent a terrorist incident and under a federal program these facilities should get credit for their prior work. However, allowing facilities to follow their own standards has not been deemed acceptable for airports or nuclear plants, and should not be acceptable for chemical plants.

The best-known voluntary program established so far, the American Chemistry Council's (ACC) security program called "Responsible Care," is wholly inadequate. The code includes vague guidelines, not prescriptive standards and focuses on physical site security (i.e., guards and gates). ACC has touted third-party verification requirements, but has not established suitable qualifications for who can certify a plant's security plan as adequate. Finally, neither ACC or anyone else collects information sufficient to verify compliance at member companies.

Sal DePasquale, formerly with Georgia Pacific, was involved in developing the ACC program. He recently testified to the House of Representatives Homeland Security Committee about the program:

> The result of guidelines and nice sounding best practices is to create a smoke and mirrors exercise that makes it appear that something serious is being accomplished, when it, indeed, is not."… "In response to September 11, the ACC required its members to conduct a vulnerability analysis. This is a noteworthy exercise, but it does not require the companies to actually do anything in response to the analysis nor does it establish any minimum standards for defense against the most obvious exposures. Indeed, it is another exercise in smoke and mirrors and makes it seem like something substantive is occurring, when it is not.[8]

Congress should allow companies to submit work performed to comply with other laws (for instance, a vulnerability assessment done under the Bioterrorism Act), as part of meeting their obligations under chemical security legislation. Companies would only need to supplement those submissions with any additional information required by the chemical security bill.

It is particularly important that work done as part of a voluntary industry program be strictly scrutinized. DHS should review this material on a facility-by-facility basis to ensure compliance with each element of the law.[9] It is one thing to recognize the security efforts performed under other federal statutes if those efforts meet the requirements of

[8] Sal DePasquale, testimony to the House of Representatives Homeland Security Committee, June 15, 2005.

[9] Qualified third party verification will be an important supplement to government oversight for facilities that do not pose a high risk. To ensure that the audits are objective, DHS must establish strict criteria for third party qualifications and independence. A bill must require such third parties to have expertise in alternative approaches, prevent conflicts-of-interest, and ensure timely DHS audits of some third party certifications.

this proposed law – it is completely unacceptable to rubber stamp voluntary measures that have not been evaluated or enforced by any federal agency.

In addition to the principles described above, an effective chemical security program also should include the following provisions:

- **Worker participation and training.** Workers and first responders are most immediately affected by a major chemical release and so have a direct, personal interest as well as the expertise to ensure that vulnerability assessments and security plans are adequate. Facilities should be required to consult with workers and first responders in the development of their plans. It should also provide for training on inherent safety for state and local officials as well as owners and operators and employees.

- **Additional population protection and emergency preparedness**. If a facility is unable to implement a safer process, technology or chemical to reduce the consequences of a successful terrorist attack, it should be required to meet a higher standard of protection, including the use of buffer zones around the perimeter of the facility that reduce the number of people who might be injured in the event of a chemical incident. In addition, facilities should be required to develop emergency plans and conduct evacuation drills of employees and simulate community evacuations coordinated by local first responders and volunteers.

- **Technical support and coordination with government experts on hazardous chemicals.** The Homeland Security Department's primary expertise is in assessing and addressing security, while EPA has primary expertise and years of regulatory experience with the various industries that use large volumes of hazardous materials. Both agencies should play critical roles in a chemical security program and should be directed to coordinate.

  In addition, EPA should be directed to establish a national clearinghouse whose function is to encourage the "use of inherently safer technology" through exchange of information.

- **Restrictions on siting of new facilities in populated areas**. In this day and age it seems foolhardy to allow new facilities that use large amounts of dangerous chemicals to be located in heavily populated areas. Congress should direct DHS to develop rules to avoid creating new catastrophic risks.

Efforts to protect Americans from terrorist attacks are often costly and complicated. Instances when protection of the public can be achieved in a cost-effective manner should be aggressively pursued. That some of these options have side benefits, such as eliminating the potential for chemical accidents makes them all the more appealing. Congress should insist that facilities take all reasonable steps to reduce risks of catastrophic chemical release.

Attachment 1: Who Has Warned About Terrorism at Chemical Plants?

Many experts have cautioned that terrorists can target industrial facilities that use extremely hazardous substances. Government agencies, research institutes, trade associations, labor unions, and public interest groups have warned of the dangers posed by hazardous chemicals in communities. These published warnings include reports by:

- Department of Homeland Security;[i]
- Department of Justice;[ii]
- Environmental Protection Agency;[iii]
- General Accounting Office;[iv]
- Congressional Research Service;[v]
- Congressional Budget Office;[vi]
- Agency for Toxic Substances and Disease Registry;[vii]
- Naval Research Laboratory;[viii]
- Army Surgeon General;[ix]
- American Chemistry Council;[x]
- PACE International Union;[xi]
- Brookings Institution;[xii]
- Rand Corporation;[xiii]
- Center for Strategic and International Studies;[xiv]
- Environmental Defense;[xv]
- Safe Hometowns Initiative;[xvi]
- U.S. Public Interest Research Group;[xvii]
- Working Group on Community Right-to-Know.[xviii]

Compiled by the Working Group on Community Right-to-Know, www.crtk.org, March 2005

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[i] Press Release: Statement by the Department of Homeland Security on Continued Al-Quada Threats, Department of Homeland Security, November 21, 2003.
[ii] Assessment of the Increased Risk of Terrorist or Other Criminal Activity Associated With Posting Off-site Consequence Analysis Information on the Internet, U.S. Department of Justice, April 18, 2000; and, A Method to Assess the Vulnerability of U.S. Chemical Facilities, National Institute of Justice, U.S. Department of Justice, November 2002.
[iii] Strategic Plan for Homeland Security, U.S. Environmental Protection Agency, September 2002.
[iv] Homeland Security: Voluntary Initiatives Are Under Way at Chemical Facilities, but the Extent of Security Preparedness is Unknown, U.S. General Accounting Office, GAO-03-439, March 14, 2003.
[v] CRS Report to Congress: Chemical Plant Security, Congressional Research Service, January 2003.
[vi] Homeland Security and the Private Sector, Congressional Budget Office, December 2004.
[vii] Industrial Chemicals and Terrorism: Human Health Threat Analysis, Mitigation and Prevention, Agency for Toxic Substances and Disease Registry, 1999; and, Terrorist Use of Expedient Chemical Agents: Health Risk Assessment and Las Vegas Case Study, Agency for Toxic Substances and Disease Registry, undated.
[viii] Testimony of Dr. Jay Boris of the Naval Research Laboratory before the Committee on Public Works and the Environment of the Council of the District of Columbia, January 23, 2004.
[ix] Study Assesses Risk of Attack on Chemical Plant, *Washington Post*, March 12,2002.
[x] The Terrorist Threat in America, Chemical Manufacturers Association (American Chemistry Council), April 1998.
[xi] PACE International Union Survey: Workplace Incident Prevention and Response Since 9/11, Paper, Allied-Industrial, Chemical and Energy Workers International Union (PACE), October 27, 2004.
[xii] Protecting the American Homeland, Brookings Institution, March 2002.
[xiii] Toxic Warfare, RAND Corporation, 2002.
[xiv] News Release: Chemical Facilities Vulnerable, Center for Strategic and International Studies, December 23, 2003.
[xv] Eliminating Hometown Hazards: Cutting Chemical Risks at Wastewater Treatment Facilities, Environmental Defense, December 2003.
[xvi] The Safe Hometowns Guide, The Safe Hometowns Initiative, 2002.
[xvii] Needless Risk: Oil Refineries and Hazard Reduction, U.S. Public Interest Research Group, October 2003.
[xviii] Unnecessary Dangers: Emergency Chemical Release Hazards at Power Plants, Working Group on Community Right-to-Know, July 21, 2004.

Attachment 3: Reporters Find Gaps In Voluntary Industry Programs

As Congress debates protecting America's chemical plants against terrorists, investigative news reporters are finding open gates, holes in fences, no guards, and other lax security at facilities that store extremely hazardous chemicals. In response, the chemical industry's lobbying arm, the American Chemistry Council (ACC), suggests that these are *not* facilities covered by the industry's voluntary "Responsible Care" safety and security code. However, reporters have entered or found lax security at more than 20 ACC member or partner company facilities, listed below. Plainly, even major chemical facilities are vulnerable. This shows why eliminating unnecessary chemical dangers is the most certain way to deter terrorists and protect public safety.

Facilities of current ACC members (June 2005):

- NALCO (Chicago)[1]
- Rhodia (Chicago)[1]
- Flexsys America (Akzo Nobel subsidiary; Monongahela, Pennsylvania)[1]
- Ashland Specialty Chemical (Pittsburgh, Pennsylvania)[1]
- Calgon Carbon (Pittsburgh, Pennsylvania)[1]
- Sunoco (Neville Island, Pennsylvania)[1]
- PVS Technologies (Houston)[1]
- W.R. Grace (Chicago)[1]
- Dow Chemical (Houston)[1,2]
- Unspecified facility near Los Angeles, Calif.[3]

Facilities of former ACC member companies (members at time of investigation):

- Neville Chemical (Pennsylvania)[1]
- Three LaRoche Industries facilities (Chicago, Baltimore and Pennsylvania)[1]
- Millennium Chemicals (Baltimore)[1]
- BP Chemical[4]
- BP (Chicago)[1]
- Noveon (Louisville)[5,6]

Facilities of "Responsible Care" partner companies:

- Conrail
- CSX Transportation
- Union Pacific Railroad

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[1] Investigated by Pittsburgh-Tribune reporter Carl Prine.
[2] Incidental entry only – not near tanks.
[3] Investigated by CBS 60 Minutes.
[4] Investigated by CBS News.
[5] Reported by Louisville Courier-Journal.
[6] Participation in Responsible Care is a condition of membership in the Synthetic Organic Chemical Manufacturers Association (SOCMA).

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PITTSBURGH
Tribune-Review

Chemical sites still vulnerable

By Carl Prine
TRIBUNE-REVIEW
Sunday, November 16, 2003

Two years after 9/11, terrorists still have unfettered access to potentially catastrophic amounts of toxins and explosives nationwide, the Pittsburgh Tribune-Review and "60 Minutes" have found.

The news organizations' odyssey through facilities making, storing or shipping deadly chemicals follows Trib investigations last year that uncovered shoddy security at more than 60 plants in the Pittsburgh area and in Baltimore, Chicago and Houston.

Beginning in August, the Trib and the CBS newsmagazine jointly scouted security at 15 facilities around Pittsburgh and Baltimore. CBS continued on to California, Illinois, New Jersey and Texas.

The Trib and "60 Minutes" have combined to inspect more than 50 plants over the last four months, finding:

Lax security. A Trib reporter, "60 Minutes" correspondent Steve Kroft and a CBS cameraman strolled to the tanks of lethal boron trifluoride at Neville Chemical Co. on Neville Island. Crossing through open or unlocked gates, they spent more than 30 minutes at the unguarded works during two undetected visits. Plant officials called the police only after the journalists confronted Neville's security chief with their findings. Neville Township police then cited the men for defiant trespass. According to Neville's filings with the Environmental Protection Agency, a catastrophic release of the corrosive vapors would threaten the lives of nearly 38,000 within three miles.

Open rail lines. The easiest entrance to Neville Chemical and five other plants was through unguarded rail corridors. Because of just-in-time delivery and a lack of space at older yards, companies such as the James Austin Co. in Butler County and Univar in Forward store their chlorine gas on the tracks. Industrial chlorine is corrosive enough to eat through human teeth. A lone tanker at Univar's warehouse endangers 1.2 million people, according to the EPA.

Unlocked gates and broken fences. At the Wilkinsburg Penn Joint Water Treatment Facility in Verona, a broken fence and an unlocked door allowed a Trib reporter to reach 20 tons of chlorine gas and millions of gallons of drinking water. If the chlorine tank ruptured, the gas could lap neighborhoods up to three miles away, threatening more than 100,000 people. Nearly every Pennsylvania facility examined suffered from dilapidated wire or open gates.

See-nothing guards and workers. Inattentive guards allowed easy access to five facilities, including Giant Eagle's Chartiers warehouse in the West End. A reporter popped through a fence hole to get to the grocer's warehouse and its 20,000 pounds of anhydrous ammonia, a coolant for refrigeration. In a break room at the warehouse, workers sipping sodas chatted with him about the Steelers. Giant Eagle's ammonia tank puts nearly 43,000 people -- including children in 24 schools -- at risk of death, burns or blindness, according to company filings with local emergency planners.

Federal officials were most concerned about the easy penetration of security at the nation's potentially deadliest plants. At the mammoth Sony Technology Center in Westmoreland County, an unsecured gate, distracted guards and unconcerned employees let a reporter reach 200,000 pounds of chlorine gas. No one stopped him as he touched train derailing levers, waved to security cameras, and photographed chlorine tankers and a nitric acid vat. If ruptured, one Sony railcar could spew gas 13 miles, endangering 190,000 people. Two other plants penetrated by the Trib and "60 Minutes" -- Univar and Millennium Chemical in Baltimore -- each put more than 1 million neighbors at risk of chlorine poisoning.

In February, Homeland Security Secretary Tom Ridge issued a bulletin warning that "al-Qaida operatives may attempt to launch conventional attacks against U.S. nuclear/chemical-industrial infrastructure to cause contamination, disruption and terror." When told how the Trib and "60 Minutes" easily punctured plant security in several states, he was concerned but expressed optimism that long-term federal reforms will protect Americans from toxic catastrophes.

"I think what we need to understand is that this enormously complex and diverse economy, worth trillions of dollars, has many potential targets," Ridge said. "And we have to begin to understand that we can't eliminate the risk. We have to manage the risk. And the way we manage the risk is by starting to take a look at those that are most vulnerable, whose use or destruction could result in a catastrophic loss of life or economic damage."

Ridge said federal teams recently began scrutinizing security deficiencies at "nearly two dozen" facilities the agency considers most tantalizing to terrorists. On Friday, Homeland Security announced that National Guard troops had visited about 150 sensitive sites, of which "more than half" were chemical facilities. Details of the visits were not disclosed.

But the plants' neighbors want tighter security and more openness about potential dangers sooner, not later.

"They've never told us anything about the chlorine there. I've never even heard they had all of that there," said Nancie Bluebaugh, of East Huntingdon, who lives a few blocks from Sony. "I have a child here. We see the trains coming and going, but we had no clue what was in them.

"I'll do a lot of praying now."

Yvette Leto, who lives a few blocks downwind from Neville Chemical's boron trifluoride, believes federal agencies should outlaw catastrophic chemical storage near cities. According to Neville's filings with emergency planners, the plant also could unleash deadly hydrogen fluoride, anhydrous ammonia, benzene, styrene, phosphoric acid and 10 other toxins that burn flesh, blind eyes, flood lungs with blood or cause cancer.

"The big shots who run the corporations aren't worried about us," Leto said. "They're fine because they don't live here. Are they willing to come down and live next to these plants, like we do? I bet they wouldn't do it. But they'll put the chemicals here."

Neville Chemical officials would not comment.

Frank Leto, Yvette's father-in-law and next-door neighbor, believes federal regulations should balance the risk of disaster with the need for well-paying manufacturing jobs. A retired Aristech and Pittsburgh Coke and Chemical employee, he said the chemical industry keeps the Neville Island economy afloat.

"I worked there for 50 years, so I know how dangerous chemicals can be," he said. "But you can't have it both ways. People complain about the dangers and the smells and all that, but they'd complain even more if the companies packed up and left town."

Reforms fail

When told of the latest incursions by the Trib and "60 Minutes," most plant officials immediately pledged for the second year in a row to investigate security snafus.

AK Steel authorities said they always work to improve security, citing a $25 million upgrade that recently reduced use of nitric acid at two Butler plants. AK also installed dikes to significantly reduce hydrofluoric acid dangers.

Giant Eagle immediately repaired a broken fence and assured the Trib no one else would reach its chemicals.

After a reporter spent more than 20 minutes probing sensitive purification rooms, Oakmont Water Authority officials vowed to add gates to block access to their Hulton Water Treatment Plant. In Beaver, a township supervisor and the Chippewa Township Sanitary Authority have discussed placing the water-treatment plant under tighter vigilance.

Several Pennsylvania facilities failed the Trib's latest test even after major security upgrades since 9/11.

After last year's incursion by a Trib reporter, the Wilkinsburg Penn authority spent more than $100,000 scripting a security plan and adding electric gates, camera detectors and worker identification badges at both the Tyler Road treatment plant and a pump station along the Allegheny River.

But a Trib reporter twice scooted through a fence hole and an unlocked door that led to 20 tons of chlorine gas. The treatment plant and its Nadine Road pump station suffer from century-old layouts that are perfect for saving money on utility operations but difficult to secure from intruders.

"I've been here 23 years," said Wilkinsburg Penn director Mark Lerch. "Back then, security was never an issue. The water treatment was out of sight, out of mind. But 9/11 showed our vulnerability to terrorists. They can hit our natural gas or our electricity and we will survive. But you can't go without water."

Lerch lectured workers on lax security and tightened plant perimeters.

After a Trib reporter penetrated Univar's security last year, the company erected high fences at its Bunola yard, instituted round-the-clock guards, installed cameras and even fortified its river dock, making the works impregnable from nearly every direction -- except the railroad.

Managers asked the rail line to let them fence off track where a chlorine tanker parks daily. But federal safety laws wouldn't allow it. So the Trib and "60 Minutes" were able to make four undetected trips up the rails to 90 tons of chlorine gas.

"We really have done everything we can to make our facility secure," said Univar manager Cliff Moll. "I really think we went the extra mile and did everything anyone could do. But we can't do anything about the railroad."

The extra mile?

At other plants, workers and neighbors questioned whether management had done anything to stiffen security since the Trib's visits last year.

A reporter easily canvassed the sprawling Allegheny Ludlum mill in Brackenridge three days in a row, following a path down a bluff, across the railroad, behind a guard shack and up to 100,000 pounds of hydrogen fluoride, a lethal toxin used to "pickle" stainless steel.

Longtime Brackenridge employees blamed lax security on recent guard cutbacks and indifference. If released, the mill's acid could waft nearly a mile and threaten more than 16,000 residents with blindness, severe burns and death. A spill also would jeopardize water supplies drawn from the Allegheny and Ohio rivers.

Allegheny Ludlum officials declined to comment.

"I know they put in surveillance cameras, but we don't know if anyone is really watching," said Gerard Magoc, a Brackenridge steelworker for 31 years. "They put on a big show about searching cars, though. They're big on theft. ... They care more about protecting their toilet paper than they do about their hazardous materials."

James Austin Co. managers also didn't discuss breaches.

On Oct. 28, EPA officials asked Austin to resubmit disaster plans, citing inaccurate estimates of the population endangered by its railcars. The bleach manufacturer claimed a chlorine plume could reach 12 miles, affecting only 5,500 people in the North Hills and Butler County. Trib research of U.S. Census figures, however, shows that the gas endangers 260,000 neighbors, making Austin one of the 700 potentially deadliest plants nationwide.

Sony officials said they would have "locked down" the East Huntingdon yard had the FBI warned them a terrorist or reporter was coming. Because Sony is in a rural area, corporate authorities believe it isn't a likely sabotage target.

"We respond to a threat if it's reported to us," said Sony security director Tim Pratt. "We can close the place down if something happens."

Since the Trib's surprise visit last year, Sony officials have added a concrete bulwark, metal fences and a video camera to aid security at their chlorine railcars, where a rupture would endanger 190,000 people.

Counterterrorism experts say that's not good enough. They increasingly advocate the use of barbed wire, heavily armed guards or technologies that reduce or eliminate the threat of toxic releases -- security standards common to the nuclear industry because of federal regulations.

The New York Times

Row of Loosely Guarded Targets Lies Just Outside New York City

May 9, 2005 | DAVID KOCIENIEWSKI

KEARNY, N.J., May 7 - It is the deadliest target in a swath of industrial northern New Jersey that terrorism experts call the most dangerous two miles in America: a chemical plant that processes chlorine gas, so close to Manhattan that the Empire State Building seems to rise up behind its storage tanks.

According to federal Environmental Protection Agency records, the plant poses a potentially lethal threat to 12 million people who live within a 14-mile radius.

Yet on a recent Friday afternoon, it remained loosely guarded and accessible. Dozens of trucks and cars drove by within 100 feet of the tanks. A reporter and photographer drove back and forth for five minutes, snapping photos with a camera the size of a large sidearm, then left without being approached.

That chemical plant is just one of dozens of vulnerable sites between Newark Liberty International Airport and Port Elizabeth, which extends two miles to the east. A Congressional study in 2000 by a former Coast Guard commander deemed it the nation's most enticing environment for terrorists, providing a convenient way to cripple the economy by disrupting major portions of the country's rail lines, oil storage tanks and refineries, pipelines, air traffic, communications networks and highway system.

Since 9/11, those concerns have only been magnified. Law enforcement officials have warned of the need to prepare for an assault on one of the four major chemical plants in the area or an attempt to ship nuclear or biological weapons through its two port complexes.

Trying to safeguard more than 100 potential terrorist targets in two miles surrounded by residential communities, industrial areas and commuter corridors has proved a daunting challenge. Federal, state and local officials have spent hundreds of millions of dollars to install gates, roadblocks and security cameras and to provide additional patrols, surveillance and intelligence operations.

But even those in charge of the effort say the job is incomplete, bogged down by obstacles that are a microcosm of the nation's struggle against potential terrorist threats.

After distributing tens of billions to state and local governments since 9/11, the federal Department of Homeland Security cut New Jersey's financing this year to about $60 million from $99 million last year. Many security experts have complained that the formula - which provides Montana with three times as much money per capita as New Jersey - is guided more by politics than by the likelihood of an attack.

Meanwhile, security at Newark Airport, while more rigorous and time-consuming for passengers, has been marred by embarrassing breakdowns, as screeners have repeatedly failed to prevent federal officials from sneaking weapons and fake bombs onto planes.

The time and expense of screening shipping containers has slowed attempts to tighten security at Port Newark and Port Elizabeth, where customs officials say their radiation screening devices are ineffective and need replacement.

The private companies that own 80 percent of the most dangerous targets have given varying degrees of cooperation, officials said, and the chemical industry has effectively blocked attempts in Washington to mandate stricter regulations.

As a result, many of the most crucial security tasks are left to local police departments, some of which say they are too understaffed and poorly equipped to mount a proper counterterrorism effort.

"They tell us to patrol, do this, do that, but don't give us the money or equipment," said Sgt. Michael Cinardo of the Kearny Police Department, one of several law enforcement agencies responsible for patrolling around the chlorine plant.

He said the department requires patrol officers to stop by the plant at least five times each shift.

Security against terrorism is a particularly sensitive issue in New Jersey. More than 700 people killed on 9/11 lived there. And, in October 2001, the first major bioterrorism attack on United States soil was launched from a New Jersey post office when a series of anthrax-laced letters were mailed to members of Congress and the news media. The State Health Department's muddled response came to symbolize the nation's need to prepare itself to face new threats.

Since then, New Jersey officials have spent more than $350 million in state tax money on counterterrorism, building an apparatus that is run by seasoned law enforcement experts and is generally well regarded.

New Jersey's Homeland Security Department, established in 2002, has helped to train, coordinate and increase staffing at local law enforcement and emergency medical agencies; assembled a 1,000-person task force to focus on urban areas; and purchased boats, decontamination suits, radio systems and a computerized intelligence network so

federal agents and the New Jersey State Police can share information with all 566 municipalities.

In the most dangerous two miles, they have erected concrete barriers outside hospitals and office buildings and put fences along elevated highways that pass chemical plants. The State Police patrol the skies, highways and coastal waters, and federal officials have used various surveillance techniques. On the New Jersey Turnpike, troopers try to check any vehicle that stops for as little as five minutes.

But given the sheer number of vulnerable sites - three major oil and natural gas pipelines, heavily traveled rail lines and more than a dozen chemical plants - many security experts acknowledge that the response is inadequate.

In the months after 9/11, government officials routinely refused to discuss the most mundane aspects of security, saying that they did not want to offer inside information to potential enemies. Now, said Sidney J. Caspersen, the director of the state's Office of Counterterrorism, there is more risk in remaining silent.

"The terrorists already know what's out here," Mr. Caspersen said. "They have been found with blueprints of our buildings, and a lot of the information is available over the Internet or at a public library. The only question is whether we will find a way to protect these targets before they find a way to attack them."

The answer to that question will depend largely on the ability to operate with limited money and a tangle of bureaucracies.

In several instances, counterterrorism money sent to the state has been used for questionable purposes: the city of Newark spent $300,000 on two air-conditioned garbage trucks, and New Jersey Transit has proposed using $36 million in security money to overhaul the Hoboken Ferry terminal. Even groups like Taxpayers for Common Sense say that places like New Jersey, Houston and Long Beach, Calif., deserve more federal dollars.

As for the ports, the federal Homeland Security Department's inspector general's office recently criticized the agency for directing much of its $517 million in port security money to relatively low-risk sites in places like Kentucky and Tennessee, and not giving enough to busy, vulnerable facilities like Port Newark. Although the Port of New York and New Jersey recently received an additional $42 million for counterterrorism efforts, Port Newark lacks the up-to-date equipment now used to search cargo at ports like Hong Kong.

"We put more resources into securing the average large bank in Manhattan than we do for the entire security of Port Newark," said Stephen Flynn, a former Coast Guard commander who is now a security analyst for the Council on Foreign Relations and who

conducted the study that first identified this part of North Jersey as the nation's most terror-prone two miles. "That's just irresponsible."

Some New Jersey officials have hoped that the newly appointed secretary of homeland security, Michael Chertoff, will be sympathetic to the state's situation because he is a native of Elizabeth. But when he visited New Jersey during a terror drill last month, Mr. Chertoff was noncommital about restoring cuts.

"Frankly, it's not a matter of spending a great lot of money," he said. "It's a matter of taking resources we have and having a plan in place so we use them effectively."

New Jersey officials say that the cuts will force them to reduce surveillance of possible targets, cancel training sessions for first responders and counterterrorism experts, and forestall the purchase of equipment to detect chemical, nuclear or biological agents. The state has said it will also have to scale back plans to fortify storage facilities and rail lines near the Pulaski Skyway, an area known as "chemical alley."

Even if New Jersey were to receive more money, however, its counterterrorism effort would still face other difficulties.

At Newark Airport, which handles 32 million passengers a year, the federal government and the Port Authority of New York and New Jersey have spent tens of millions of dollars on high-tech baggage screening equipment, more guards and other security improvements. But Transportation Security Administration employees failed to detect weapons or fake bombs in about a quarter of the 81 tests conducted between last June and September. In December, when a machine detected a simulated explosive, baggage screeners lost track of it and it was loaded onto a flight to Holland.

Meanwhile, even less has been done to secure the nation's greatest vulnerability to terror attacks, its 15,000 chemical plants, 123 of which pose a threat to at least 1 million people, according to the Environmental Protection Agency. A spokeswoman for the Chemistry Council, an industry group representing 150 of the nation's largest chemical plants, said its members had already invested $2 billion in improved security and were working with Congress to establish federal safety guidelines.

"We want to work with the Department of Homeland Security and Congress to make these plants safer in a way that works for everyone," Kate McGloon, the spokeswoman, said.

Michelle Petrovich, a Department of Homeland Security spokeswoman, said agency officials had visited more than half the nation's 300 most dangerous plants and urged the companies to enhance perimeter security and switch to less hazardous chemicals and processes. As a result, Ms. Petrovich said, she believes North Jersey is "one of the safer areas because it has received the most attention in terms of protective measures."

But Richard A. Falkenrath, a former deputy homeland security adviser to the White House, said that effort has done little to make the public safer. "Saying that you're doing something doesn't mean you're actually making a difference," said Mr. Falkenrath, who recently testified before Congress, urging tighter regulation of the chemical industry.

Since 2001, at least two major efforts to bolster chemical plant security have been stalled, in part by industry lobbyists.

The latest proposal to tighten security at chemical plants, which appears to be gaining support in Congress, would establish safety guidelines. But Senator Jon S. Corzine said that it is only a half measure because it would not mandate that plants in densely populated areas stop using highly dangerous chemicals like chlorine gas and switch to more benign alternatives, like sodium hypochlorite. The plants use such chemicals to make antiseptics for water purification plants.

For those who live in the shadow of these plants, there is little expectation that the federal government will mount a more vigorous security response.

Carolyn M. Chapluske of Kearny, who has lived in North Jersey all her life, said, "People pay taxes and deserve to be protected. But they probably won't. It's just the way things work."