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Before the  
Committee on Homeland Security  
U.S. House of Representatives

on

**“Chemical Facility Anti-Terrorism Act of 2009”**

Testimony of:

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**HOMELAND SECURITY REGULATIONS (CFATS) ARE WHOLLY INADEQUATE  
COMPREHENSIVE LEGISLATION IS ESSENTIAL TO SECURITY**

**INHERENTLY SAFER TECHNOLOGIES  
WILL ELIMINATE THE CATASTROPHIC CONSEQUENCES OF AN ATTACK**

June 16, 2009

***"I feel very comfortable that we've taken all the reasonable steps, but obviously if someone wants to fly an airplane into a plant, it's very hard to guard against it."***

**--- Charles O. Holliday, Jr., CEO of DuPont, June 2007**

***"You know, the threat is just staring us in the face. I mean, all you'd have to do is to have a major chemical facility in a major metropolitan area go up and there'd be hell to pay politically. People will say, 'Well, didn't we know that this existed?' Of course, we knew."***

**--- Former Senator Warren Rudman (R-NH), November 2003**

The September 11<sup>th</sup> terrorist attacks successfully used our own infrastructure against us with tragic results. They also demonstrated that tight perimeter security, such as in the case of the Pentagon, is incapable of preventing such attacks. Should a chemical plant be targeted, a truck bomb, a small plane, helicopter or a high powered rifle would easily render the industry's current reliance on fence-line security totally useless. In fact, U.S. chemical facilities have been referred to as ***"pre-positioned"*** weapons of mass destruction (WMD).

Reports during the summer of 2007 of renewed terrorist's capacity to carry out attacks inside the U.S. are a sobering reminder of the nearly six years of neglect following the 9/11 attacks. The vulnerability of U.S. chemical plants to terrorism and serious accidents such as the 1984 disaster in Bhopal, India have been widely recognized. The potential magnitude of these risks surpasses the 9/11 attacks. Once released these chemicals and gases can remain dangerous for up to 14 miles in an urban area (20 miles in a rural area) and put the lives of millions of people at risk.

The nature of these risks meets any definition of a weapon of mass destruction. The manner in which people would be killed and injured is terrifying. Poison gases such as chlorine will literally melt the lungs of its victims causing them to drown in their own lung fluid (pulmonary edema). Survivors could be left with life long disorders.

Following the 9/11 attacks it was reported that 9/11 ringleader, Mohamed Atta, visited a Tennessee chemical plant asking lots of questions (December 16, 2001 Washington Post). In the first six months of 2007 at least five successful terrorist attacks in Iraq used relatively small (150 to 250 pound) cylinders of chlorine gas to kill dozens of people. As a result the DHS began briefing local bomb squads and chemical plants across the country. (April 24, 2007 USA Today)

In February and April of 2007 thefts of 150 pound cylinders of chlorine gas occurred in California prompting questions by members of this Committee to the DHS about their response to these thefts, any other thefts and plans to eliminate these vulnerabilities by using inherently safer technologies.

U.S. chemical facilities were not built or designed to defend against terrorist attacks. And predicting where an attack will take place is a fool's errand. No one predicted that Timothy McVeigh would attack the Federal Building in Oklahoma City in 1995, killing 168 innocent people.

On June 25, 2007, DuPont Chairman Charles O. Holliday Jr. told the media that he worries most about a computer system failure or a security breach at one of the company's chemical plants around the world. "I feel very comfortable that we've taken all the reasonable steps, but obviously if someone wants to fly an airplane into a plant, it's very hard to guard against it," said Holliday.

The nation's most infamous example of this threat is the Kuehne Chemical Company in South Kearny, New Jersey. According to Kuehne's own reports to the U.S. Environmental Protection Agency (EPA), their plant puts 12 million people in the Newark-New York City region at risk in the event of a catastrophic release of chlorine gas stored on site. This is the largest single chemical plant risk in the nation, but according to the DHS more than 3,000 other plants each put 1,000 or more people at risk. More than 100 U.S. plants each put a million or more people at risk, according to their reports to the EPA.

What makes the Kuehne plant inherently dangerous is the use of large quantities of chlorine gas to produce relatively harmless liquid bleach (sodium hypochlorite). While Kuehne's largest business is water disinfection, there are many safer alternatives to chlorine, including ultra-violet light, ozone and liquid bleach. A company in the very same business as Kuehne, K2pure Solutions, plans to build multiple facilities in the U.S. using a new just-in-time process for producing chlorine gas that will not only eliminate the need for any bulk shipments of chlorine gas but will also limit on-site storage of chlorine gas to approximately 50 pounds at any one time. More details on their technology are at: <http://www.k2pure.com/>

### **What Happens When Perimeter Security Fails?**

Continuing negligence by industry or government will not be judged kindly by posterity. Stephen Flynn, Senior Fellow in National Security Studies at the Council on Foreign Relations wrote in his book, *America the Vulnerable*, "***The morning after the first terrorist strike on this sector, Americans will look around their neighborhoods and suddenly discover that potentially lethal chemicals are everywhere, and be aghast to learn that the U.S. government has still not developed a plan to secure them. The subsequent political pressure to shut down the industry until some minimal new safeguards can be put in place -- as we did with commercial aviation following the 9/11 attacks -- will be overwhelming.***"

--- In July, 2004, the Homeland Security Council estimated that **an attack on a single chlorine facility could kill 17,500 people, severely injure an additional 10,000 and result in 100,000 hospitalizations and 70,000 evacuations.**

--- In January, 2004, the U.S. Naval Research Laboratory testified before the Washington, D.C. City Council warning that **100,000 people could be killed or injured in the first 30 minutes** of a catastrophic release of a tank car of chlorine or similar chemical within blocks of Capitol Hill. They further estimated that people could **"die at rate of 100 per second."**

--- In June, 2003 FBI specialist on weapons of mass destruction, Troy Morgan, in a speech at a chemical industry conference warned, **"You've heard about sarin and other chemical weapons in the news. But it's far easier to attack a rail car full of toxic industrial chemicals than it is to compromise the security of a military base and obtain these materials."**

### **The 2006 Interim Chemical Security Law and Regulations Are Fatally Flawed:**

The best that can be said for the new Department of Homeland Security (DHS) chemical security regulations, "Chemical Facilities Anti-Terrorism Standards" (CFATS) is that they represent an official recognition of the widespread vulnerability of U.S. chemical plants to terrorism.

The new DHS rules are based on a 744 word "rider," Sec. 550 of the Homeland Security Appropriations Act 2007. Sec. 550 authorizes "interim" regulations that will expire on October 4,

2009. It was enacted with the expectation that Congress would expeditiously enact permanent, comprehensive legislation to “supersede” Sec. 550’s regulations.

The DHS rules finalized on November 20, 2007 fail to provide adequate protection for the nation and communities living in the shadow of thousands of U.S. chemical plants.

**The interim chemical security law and DHS rules (CFATS):**

- Prohibit the DHS from requiring any “particular security measure” including safer technologies that can reduce or eliminate the magnitude of an attack at virtually any chemical facility.

To satisfy the chemical lobby, this was added to Sec. 550 (a) to prevent the use of safer technologies as a security measure but it also undermines the effectiveness of the entire statute by undercutting the DHS to credibly require ANY “particular security measure.”

- Fail to ensure priority protection of the 3,400 to 4,391 facilities each of which put 1,000 or more people at risk according to the DHS.

The DHS reports that they now have approximately 6,000 facilities in one of the four risk tiers with 140 in risk tier 1 and 680 in tier 2. This leave approximately 5,000 in the lower two tiers with risk profiles that likely put 1,000 or more people at risk. Furthermore, Sec. 550 gives the Secretary of the DHS full discretion in determining which facilities will be considered to “present high levels of security risk.” Clearly more guidance is needed in prioritizing high risk facilities.

- Fail to protect approximately 2,600 U.S. water treatment plants as well as several other exempted categories. --- Approximately 100 water treatment plants each put 100,000 or more people at risk.

This exemption, also in Sec. 550 (a), covers public water systems regulated by the Safe Drinking Water Act and the Federal Water Pollution Control Act, the Maritime Transportation Security Act of 2002, facilities owned or operated by the Department of Defense, Department of Energy or regulated by the Nuclear Regulatory Commission. In June 2007 Secretary Chertoff spoke to water facilities operators warning them that even though they are exempt under the interim law they are “on the hook because you’re going to have to do this yourselves because the consequences of ignoring risks...will be quite severe.” Once again this gap needs to be closed with comprehensive legislation.

- DHS asserted the authority to prohibit states from establishing stronger security standards.

Without any explicit statutory authority, the DHS asserted the authority to preempt state programs that “frustrate” their regulations. Although no state has yet been cited, this policy could have had a chilling effect on new programs and appears aimed at serving a chemical industry agenda to prevent states, such as New Jersey, from requiring safer more secure technologies. However, this provision was reversed in an amendment to Sec. 550 by Senator Frank Lautenberg (D-NJ) in the DHS omnibus spending bill in December 2007. However, the interim law expires in October 2009 and permanent legislation must retain the right of states to set more protective standards than the federal government.

- Fail to protect the public's right-to-know by asserting authority to classify previously public information as secret, including information used in civil or criminal enforcement actions.

Sec. 550 (c) and resulting new DHS regulations over reach by going beyond protecting common sense security plans and vulnerabilities into undermining enforcement and covering up governmental incompetence or corporate liability.

- Fail to require meaningful involvement of plant employees in developing Security Vulnerability Assessments and Site Security Plans.

The DHS responded to comments saying that “there is nothing in the rule that prohibits chemical facilities from involving employees in their security efforts.” While we should be thankful for that, such a policy fails to tap the expertise of a workforce that is formally trained in chemical hazard protection, accident prevention and emergency response. Employees are the first line of defense and the eyes, ears and noses of chemical facilities. The failure to formally involve employees in developing vulnerability assessments and security plans is foolish from both a security and scarce resource perspective.

- Fail to include whistleblower protections that would enhance enforcement.

The DHS rules promise to set up an anonymous tip line but ignores the long history of whistleblowers who have exposed waste, fraud and abuse. And in this case they could save thousands of lives.

- Fail to enhance enforcement by allowing citizens to sue to enforce the law, while allowing companies liberal appeals procedures to challenge DHS orders and decisions.

Sec. 550 (d) prevents anyone but the DHS from suing a plant owner or operator to enforce any provision of this law. Once again, the law is balanced in favor of protecting the rights of recalcitrant facilities and/or violators and leaving innocent citizens facing overriding lethal risks with no legal recourse.

- Prohibit the public from knowing which facilities are “high-risk” or “Top Tier” plants.

Both DHS and corporate credibility will be in jeopardy if communities cannot determine if a local chemical plant that poses a threat is being dealt with or is in violation or is resisting orders by the DHS. Nor will communities have the peace of mind of knowing whether a plant has voluntarily converted to safer technologies and no longer poses a threat to their community.

#### **Prioritize the Most Dangerous Chemicals:**

The largest category of hazardous substances that can be transformed into chemical weapons of mass destruction (WMDs) are toxic-by-inhalation (TIH) gases. According to the U.S. EPA just **four TIH gases account for 55 percent** of all chemical processes that threaten communities nationwide. These are:

- anhydrous ammonia --- 32.5% (8,343 processes)**
- chlorine --- 18.3% (4,682 processes)**
- sulfur dioxide --- 3% (768 processes)**
- hydrogen fluoride --- 1.2% (315 processes)**

Unfortunately, the DHS has set dangerously high threshold quantities for many of these substances such as:

Anhydrous Ammonia: 10,000 lbs.

Chlorine: 500 to 2,500 lbs.

Given the successful terrorist attacks in Iraq using small quantities of chlorine (approximately 150 lbs.) and recent thefts in the U.S., it would be prudent to establish lower threshold quantities for such ubiquitous hazardous substances. Lower thresholds won't necessarily trigger more regulations, they simply give the DHS a more complete picture of where hazards are. Regulations should be driven by populations at risk.

### **Safer Processes & Technologies Eliminate the Consequences of an Attack:**

While these chemical processes deserve high priority because of their prevalent use at thousands of facilities, especially at high threat facilities, there are widely available safer alternatives for each of them. For example, the Center for American Progress (CAP) conducted an analysis of EPA's Risk Management Program data and identified 284 facilities that have converted since 1999. See full report at:

[http://www.americanprogress.org/issues/2006/04/b681085\\_ct2556757.html](http://www.americanprogress.org/issues/2006/04/b681085_ct2556757.html)

Examples of conversions from these chemicals and continuing threats include:

\*\*\* More than 200 water treatment facilities (including Washington, D.C.) converted to safer alternatives such as ultraviolet light, eliminating the use of **chlorine** and **sulfur dioxide** gas. But over 100 water treatment plants still threaten more than 100,000 people.

\*\*\* Ninety-eight petroleum refineries use safer alternatives to **hydrogen fluoride (HF)**. But 50 refineries still threaten millions of people with the use of HF.

\*\*\* At least 36 electric power plants use safer alternatives to **anhydrous ammonia** gas such as dry urea. But 166 power plants still use anhydrous ammonia gas each threatening an average of 21,506 people.

While the CAP analysis proves the technological feasibility of safer alternatives, CAP estimates that at this rate of conversion, without any new regulatory requirements, it will take 45 years to eliminate hazards that pose the highest risk to America's hometowns.

The CAP analysis shows that 87% of the converted facilities spent less than \$1 million and half spent less than \$100,000. Clearly these conversion costs pale in comparison to the cost of disaster response, relocating communities, defending against personal injury law suits or resolving environmental clean up liability or even conventional security costs.

A 2006 GAO report (GAO-06-150), Homeland Security DHS Is Taking Steps to Enhance Security at Chemical Facilities, But Additional Authority Is Needed, concluded, "**Implementing inherently safer technologies potentially could lessen the consequences of a terrorist attack by reducing the chemical risks present at facilities, thereby making facilities less attractive targets.**"

A Government Accountability Office report (GAO-05-165) identified chlorine gas and 90-ton chlorine rail cars as "**among the top five terrorist-related wastewater system vulnerabilities.**" Among the top three recommendations: "**Replacing gaseous chemicals**

**used in wastewater treatment with less hazardous alternatives."** In addition, the largest majority of experts gave replacing these chlorine facilities the highest priority for federal funding.

**Examples of Safer Technologies at water facilities:**

For example, the Blue Plains sewage treatment plant in Washington, D.C. halted its use of chlorine and switched to safer chemicals just eight weeks after the 9/11 attacks due to fears of another attack. The plant had seven rail cars of chlorine on sight following the 9/11 attacks. The conversion only cost approximately \$0.50 per year for each water customer. In other words, by using safer technologies we can neutralize and eliminate targeting by terrorists and prevent catastrophic accidents as well at negligible costs.

Switching to safer **"drop-in"** chemicals, such as relatively harmless sodium hypochlorite (liquid bleach) without a long-term plan can leave lingering risks in communities where the bleach is produced. While switching to bleach at a sewage plant clearly eliminates the immediate hazard at that facility, the bleach formulators who use and store large quantities of chlorine gas to make bleach still pose serious risks to workers and surrounding communities.

A new North American company, K2pure Solutions, have announced plans to build multiple facilities in California and other states using a new just-in-time process for producing chlorine gas that will not only eliminate the need for any bulk shipments of chlorine gas but will also limit on-site storage of chlorine gas to approximately 50 pounds at any one time. More details on their technology are at: <http://www.k2pure.com/>

Bleach and water disinfectant formulators are also well positioned to guide their customers toward other safer alternatives such as ozone and ultra-violet light (UV) which are widely available and do not pose catastrophic hazards. UV is superior to chlorine or chlorine bleach because it also kills deadly anthrax and the parasite cryptosporidium which chlorine does not. --- In 1993 more than 100 people were killed and 400,00 were made sick by cryptosporidium when it overwhelmed the chlorine treated drinking water system of Milwaukee, Wisconsin.

**Q&A on Methods to Reduce the Consequences in Sec. 2111 of the June 9, 2009 Homeland Security Committee Discussion Draft of "The Chemical Facility Anti-Terrorism Act of 2009"**

**Does the bill require ALL chemical facilities to adopt "methods to reduce the consequences of a terrorist attack"?**

**No, this requirement is conditional and only covers the highest-risk (Tiers 1&2) facilities selected by the Department of Homeland Security (DHS). As of May 2009, the DHS designated approximately 820 facilities in the two highest risk tiers.**

**The conditions for implementing safer methods and technologies are:**

- \*\*\* They must significantly reduce the risk of death or injury**
- \*\*\* They must not shift risks to other U.S. facilities**
- \*\*\* They must be technically feasible**
- \*\*\* They must not impair the plant's ability to do business at that location**

**Will wastewater facilities be regulated and therefore be required to implement safer methods or technologies?**

**Yes, the bill does include wastewater facilities. Only those water facilities that are designated in the highest risk tiers by the DHS would be conditionally required to implement safer methods or technologies.**

**Will this requirement burden facilities with unacceptable costs?**

**No, a survey by the Center for American Progress identified 284 facilities that switched to safer methods since 1999. They found that 87 percent spent less than \$1 million, and one half reported spending less than \$100,000. And 34% of facilities expected “*cost savings or improved profitability.*” Washington, D.C. converted its sewage treatment plant within 90 days after the 9/11 attacks for less than \$0.50 per water customer per year. The bill also authorizes funding for three years to defray the cost of implementing safer methods and technologies.**

**Will this requirement result in job losses?**

**No, plants that invest in the safety and security of their infrastructure invest in American communities and eliminate or reduce their: liability, regulatory costs and improve workplace safety. Major trade unions, such as the United Steelworkers, United Auto Workers, International Chemical Workers/UFCW and Communication Workers of America support the bill.**

**Will the use of safer technologies shift risks locally or nationally?**

**No, the bill specifically prohibits the shifting of these risks to other facilities in the U.S.**

**Does the bill micro-manage chemical facilities by requiring them to adopt a specific safer technology?**

**No, each high-risk facility is free to choose the most appropriate technology or process for their facility.**

**Should government require safer design and technologies to be used in the private sector?**

**Yes, the Federal Aviation Administration (FAA) has required airplane security and safety standards for decades. The feasibility and cost-effectiveness are balanced against security and safety needs. After 9/11 all commercial airliners were required to harden cockpit doors and X-ray machines for airline baggage were installed at hundreds of airports.**

**Is this requirement more appropriate for environmental legislation than security legislation?**

**No, in 2006 the GAO (GAO-06-150), concluded that “Implementing inherently safer technologies potentially could lessen the consequences of a terrorist attack by reducing the chemical risks present at facilities, thereby making facilities less attractive targets.” And a June 2006 National Academy of Sciences study endorsed the adoption of safer technologies as “the most desirable solution to preventing chemical releases” from a terrorist attack.**



In a February 27, 2008 statement the Association of American Railroads said, "It's time for the big chemical companies to do their part to help protect America. They should stop manufacturing dangerous chemicals when safer substitutes are available. And if they won't do it, Congress should do it for them in the Chemical Facility Anti-Terrorism Act of 2008."

**Can different types of chemical facilities use safer methods to reduce the consequences of risks at more than 6,000 regulated facilities?**

Yes, many types of facilities are among the 284 facilities that have already converted since 1999. Most facilities (89 percent ) are "users" of chemicals rather than chemical makers. These plants can often switch to safer methods even faster than chemical makers.

**Additional Expert Opinions on Safer Technologies:**

2006 GAO report (GAO-06-150), Homeland Security DHS Is Taking Steps to Enhance Security at Chemical Facilities, But Additional Authority Is Needed, concluded, "**Implementing inherently safer technologies potentially could lessen the consequences of a terrorist attack by reducing the chemical risks present at facilities, thereby making facilities less attractive targets.**"

May 2006 report by the National Academy of Sciences, "Terrorism and the Chemical Infrastructure: Protecting people and Reducing Vulnerabilities," recommended more research on new technologies but stated, "***The most desirable solution to preventing chemical releases is to reduce or eliminate the hazard where possible, not to control it. This can be achieved by modifying processes where possible to minimize the amount of hazardous material used, lower the temperatures and pressures required, replace a hazardous substance with a less hazardous substitute, or minimize the complexity of a chemical process.***"

***"Railroads agree, and strongly support efforts aimed at finding and utilizing 'inherently safer technologies' as substitutes for hazardous materials, especially TIH."*** -- Association of American Railroads (AAR) President, and CEO Edward R. Hamberger in testimony before the House Transportation and Infrastructure Committee's Railroad Subcommittee.

Retired Rohm and Haas engineer, Dennis Hendershot advised, "***The first solution to a process safety problem should always be to get rid of the hazard, not control it.***"

Trever Kletz, formerly with Imperial Chemical Industries (ICI) said, "***The very best way to prevent an explosion is to simply replace the material that explodes with one that does not or at least keep the stock down so low that it hardly matters if it all leaks out.***"

**State Preemption:**

As the DHS acknowledged in their proposed rule, "Sec. 550 was silent on preemption" of states' authority to set stronger security standards. However, the DHS chose to assert federal preemption without statutory authority in an apparent effort "to preserve chemical facilities flexibility to choose security measures." Fortunately, this provision was reversed in an amendment to Sec. 550 by Senator Frank Lautenberg (D-NJ) in the DHS omnibus spending bill in December 2007. However, the interim law expires in October 2009. Any permanent legislation must clearly retain the right of states to set more protective standards than the federal government.

While few would argue that the federal government should not preempt states' authority to establish **minimum** standards, it is self-defeating to bar states from setting stronger security standards by establishing a federal **limit or ceiling** on security protections.

The federal government should welcome every state pitching in to address the unique situation it faces. New Jersey was the first state to implement a chemical security program that requires an assessment of safer, more secure technologies. According to Governor Corzine, a federally mandated roll back of New Jersey's protections *"could have the effect of weakening chemical security and leaving New Jersey and its neighbors –including New York City—more vulnerable to devastation from a terrorist attack on our chemical facilities."*

### **Risk Based Performance Standards & Safer Technologies:**

A safer technology provision was contained in the 2006 and 2008 House Homeland Security Committee passed bills, H.R. 5695 and H.R. 5577 respectively. Those bills required priority chemical facilities to utilize safer, more secure technologies, where feasible and cost effective to reduce or eliminate the magnitude of an attack on a chemical facility. By substituting inherently dangerous chemicals or processes with inherently safer technologies (IST) the risk of a catastrophic release at a chemical plant can be eliminated or dramatically reduced. IST is the best tool available to completely mitigate facility vulnerabilities and safe guard communities.

The DHS has had wide discretion to establish "risk-based performance standards." The DHS could have chosen to establish performance standards that deter an attack or mitigate the consequence of an attack by safeguarding, reducing or eliminating the risk or desirability of the facility as a target. This could have been achieved by issuing guidance to suggest that counter measures include the use of safer, more secure technologies to meet the performance standard or opt out of the regulations entirely.

In fact, the DHS mentioned in their Federal Register notice of proposed rule making, Annex B, page 78315, that a "security event may be larger than the typical EPA Risk Management Program (RMP) worst-case analysis." In a 2001 U.S. Army Surgeon General study estimated that 900,000 to 2.4 million people could be killed or injured in a terrorist attack on a U.S. chemical plant in a densely populated area. According to the Environmental Protection Agency (EPA), 106 chemical plants threaten a million or more people. Chlorine gas is the most common industrial chemical hazard at the 100 highest risk plants. According to the Chlorine Institute, a chlorine gas cloud can drift through a city and remain dangerous for at least 14 miles and 20 to 25 miles in rural areas.

These alternatives include a wide range of options such as process changes, chemical substitutions, smaller storage vessels or any other measures that will reduce or eliminate the inherent hazard posed by the facility's storage, use or production of an ultra-hazardous substance. This range of options is far from requiring any "particular security measure," it is up to the plant operator to choose which safer technology, process, chemical or storage vessel reduces or eliminates these risks.

Only about 13 percent of the universe of facilities in the EPA's Risk Management Program (RMP) are members of the chemical manufacturers trade association, the American Chemistry Council. Whereas the overwhelming majority of RMP facilities are chemical **users**, including: petroleum refineries that use hydrogen fluoride; power plants that use anhydrous ammonia and water treatment plants that use chlorine and sulfur dioxide gas. All of these have safer alternatives already widely in use at hundreds of facilities.

**Benefits of Safer Technologies:**

The use of safer technologies offers a more competitive and stable business plan with fewer regulations, potentially zero liability, sustainable profitability, better relationships with workers and neighboring communities and no threat of a catastrophic attack or accident. Specifically, the use of safer technologies will likely result in a facility no longer being subject to DHS's CFATS regulations.

Obviously, chemical facilities located on site at nuclear power plants, water treatment works, iconic facilities such as Disney World, Camp David, etc. also need to be considered for priority protection. However, using safer technologies as a countermeasure at these facilities will lessen the lethality that an attack on them would pose.

Given DHS's finite resources and the late start the nation has in addressing chemical security it is urgent that we use safer technologies to mitigate the consequence of an attack. By doing so we eliminate risks, safeguard communities and save scarce money and resources to protect targets that cannot be so neutralized (airports, U.S. Capitol, etc.).

The Annex in the DHS proposed rule suggests that plant owners and operators should assume that "international terrorism" is possible at every facility. A better assumption would be to recognize that every plant could be the target of someone no one anticipated. The bombing of the Federal Building in Oklahoma City in 1995 was initially thought to be committed by "Middle Eastern terrorists." It turned out to be the insane act of a U.S. Army trained Gulf War veteran. How many more Americans have been trained in the art of war since then? Other incidents and threats ranging from Columbine, to international drug cartels and the spectacularly failed intelligence leading up to the 9/11 attacks, makes guessing where such an attack will come from nothing more than a fools errand. The only prudent thing to do is attempt to remove unnecessary vulnerabilities as soon as technically feasible. Even without terrorist attacks, we will save countless lives in accident prevention.

**Top Tier High Risk Facilities:**

According to a June 2005 Congressional Research Service report examining EPA's RMP data base, the EPA has identified 6,883 facilities that each put 1,000 or more nearby residents at risk and 553 of these put 100,000 or more people at risk.

However, using a methodology that includes only 1/6<sup>th</sup> the area surrounding a plant, the Department of Homeland Security (DHS) has estimated at different times a range of 3,400 to 4,391 chemical facilities that each put 1,000 or more people at risk. Of these DHS identified 272 facilities that each put 50,000 or more people at risk. The DHS calculation looks at a 60 degree "kill zone" down wind from a facility. The EPA's RMP program uses a methodology that creates a 360 degree "vulnerability zone" around a facility. Under the RMP, chemical plant owners and operators submit worst-case disaster scenarios using U.S. Census data to calculate the number of people living in each "vulnerability zone." In Annex B of the DHS proposed rule on FR page 78315 warns, "the security event may be larger than the typical EPA RMP worst-case analysis."

At a minimum, any facility that endangers 1,000 or more people should be considered a "top tier" or "high-risk" facility.

**Alternative Security Plans (ASPs):**

ASPs were written by and for oil and chemical industry trade associations. All of them avoid requiring safer technologies and do not represent the best way to safe guard communities at

risk. Congress should not allow the DHS to substitute ASPs for Site Security Plans for high priority facilities.

**Consultation With Other Agencies:**

As a new department with minimal resources, the DHS should routinely collaborate and consult with other more experienced government agencies. In their January 2006 report (GAO-06-150) the Government Accountability Office concluded, “By tapping EPA’s expertise on chemical facilities and general facility safety issues, DHS can enhance its efforts to identify high-priority facilities and assess facility vulnerabilities as well as better target government resources to those facilities posing the greatest risk.”

Congress should require the DHS to consult with the EPA as the GAO recommended and develop guidance documents to rapidly identify high risk facilities and promote the use of inherently safer technologies as a mitigation and countermeasure technique to reduce risks and safe guard communities. Similar consultation with the U.S. Chemical Safety and Hazard Investigation Board, which has enormous experience in diagnosing chemical accidents and recommending mitigation techniques, should be aggressively pursued.

**Buffer Zones:**

According to the EPA (Belke, 2000), the high number of facilities that put residents at risk as far as 14 to 25 miles away from a release “is primarily due to the prevalent use of 90-ton rail tank cars for chlorine storage.” The Chlorine Institute pamphlet 74, “Estimating the Area Affected by a Chlorine Release” (1998), shows a plume can be hazardous up to 41.5 miles.

The Bureau of Alcohol Tobacco, Firearms, and Explosives regulations (27 CFR 555.218) prohibits the storage of a similar quantity of explosives within 2,010 feet of inhabited buildings.

In 2006 the Netherlands and Akzo Nobel completed a \$270 million program to relocate chlorine production facilities within Holland to a location that will eliminate the transport of chlorine by rail in the Netherlands.

Given the large potential plume of toxic-by-inhalation substances and large quantities of some flammables such as propane, a much larger buffer zone is called for with regard to high risk TIH facilities.

Without the use of safer technologies to convert existing plants into safer functioning plants, relocating them to more remote areas should be a an option, especially if an owner/operator insists that there is no safer alternative.

Short of relocation, the DHS should be required to issue guidance to mitigate these threats by using smaller storage vessels that would help reduce risks, deter and discourage potential attackers. In addition, the DHS should facilitate owner/operator collaboration with local government and emergency responders to conduct practice evacuation drills. If a plant cannot substantially reduce its risks, the owner/operators and government agencies have an obligation to ensure that at-risk citizens can reasonably be evacuated.

New facilities should be prohibited from locating in densely populated areas.

**Brief History of Federal Inaction:**

While the DHS proposed rule issued December 28, 2006 contained a “Brief History of Federal Pre-Existing Chemical Security and Safety Programs,” it ignored the “general duty clause” in

Section 112r of the 1990 Clean Air Act which gives the President and the Environmental Protection Agency (EPA) broad authority to require chemical facilities to prevent catastrophic releases of poison chemicals. After drafting legislation, guidance and regulations in June of 2002, the administration withdrew its proposals, in part, under pressure from the oil and chemical industry.

On July 22, 2004 ***“The 9/11 Commission Report”*** identified four failures in preventing an attack by the U.S. government the first of which was the failure of ***“imagination.”*** A continuing lack of imagination today exposes millions of Americans to Bhopal magnitude risks largely because new laws or regulations have not yet been adopted to clarify the chemical industry’s obligation to prevent catastrophic releases at U.S. chemical plants. In June, 2002 a promising proposal drafted by the EPA could have completed the first phase of such a program by the middle of 2003 but it was derailed by the White House in the fall of 2002. It was not unlike a bill (S. 1602) authored in 2001 by Senator Jon Corzine (D-NJ) and based on a bill introduced by Senator Frank Lautenberg (D-NJ) in 1999.

The EPA’s 2002 proposal included ***“substituting less hazardous chemicals for extremely hazardous ones.”*** The conversion of Washington, D.C.’s main sewage treatment plant from chlorine to safer chemicals, just eight weeks after 9/11, exemplifies the feasibility of such a strategy. At the time of the attacks they had 7 90-ton rail cars of chlorine stored on site.

Of the 15,000 facilities required to report their worst-case chemical disaster scenarios to the EPA’s RMP, 7,728 plants pose an ***“off site consequence” (OSC)*** to more than 1,000 people. Approximately 100 facilities reported an OSC to the EPA putting one million or more people at risk. Approximately 65 percent of these facilities’ “worst-case-scenarios” are chlorine disasters. Rather than address these risks through the new regulations suggested by the EPA, the DHS used a new methodology that downsized the priority list of chemical plants by forty-three percent to 3,400 facilities that put 1,000 or more people at risk.

EPA’s 2002 chemical security proposal was slated for a media ***“rollout”*** at the White House. According to draft documents, ***“higher priority chemical facilities should be able to complete a vulnerability assessment and address security vulnerabilities as described in the guidance in 12-18 months.”*** --- In other words many facilities could already have eliminated or reduced their hazards by early 2004.

EPA’s 2002 documents included a question and answer sheet for EPA Administrator Whitman which said, ***“Using existing authority under the Clean Air Act, we believe that the guidance and regulation I have announced today are the quickest paths to improving chemical facility security...If we later find that there are legislative gaps, then we will consider seeking legislation.”***

Ultimately, the reversal by the Bush administration and the lobbying pressure by the industry (American Chemistry Council, American Petroleum Institute, etc.) paid off and chemical security legislation was excluded from the Homeland Security Act signed into law in November 2002.

In March, 2003 a report by the General Accounting Office (GAO) concluded ***“EPA has not attempted to use these Clean Air Act provisions [because] EPA is concerned that such an interpretation would pose significant litigation risk...”*** The GAO concluded that chemical facility security would be more effectively addressed by passage of specific legislation.

In December 2003 President Bush further undermined EPA's authority and issued a directive (Directive/Hspd-7) limiting EPA's role on chemical security to **"drinking water and water treatment systems."** Under questionable legal authority, this directive attempts to shift responsibility for 15,000 chemical plants to the DHS, which at the time had no legislative authority, experience or inclination to regulate this industry.

In January 2005, former White House homeland security deputy, Richard Falkenrath told the Senate Homeland Security and Governmental Affairs Committee, **"the federal government has made no material reduction in the inherent vulnerability of hazardous chemical targets inside the United States. Doing so should be the highest critical infrastructure protection priority for the Department of Homeland Security in the next two years."**

In his book, --- "America the Vulnerable" Stephen Flynn, of the Council on Foreign Relations warned, **"The chemical industry deserves urgent attention because the stakes are high, the opportunities for terrorists are rich, and no credible oversight process exists. It is the very ubiquity of the U.S. chemical industry that gives it potential to be a serious source of national alarm."**

In 2006 an intensive industry lobbying campaign successfully killed comprehensive chemical security legislation (H.R. 5695 & S. 2145) that was voted out of the authorizing committees in the House and Senate in 2006. Instead, the industry worked closely with Republican leaders to draft a 740 word "rider" to the 2007 DHS Appropriations bill. The only major concession they made was to keep it an "interim" three year statute until Congress enacts permanent legislation. In 2007, the industry is urging Congress NOT to change this temporary statute.

To better understand the lobbying resources the industry used to derail legislation since 2001 we surveyed the lobbying records of the relevant industries in the Office of the Secretary of the Senate at: <http://sopr.senate.gov>

Greenpeace identified **238 industry lobbyists that listed chemical security as part of their portfolio in 2007.** Based on their lobby reports we estimate that industry lobbyists spent approximately \$12 million to lobby on chemical plant security legislation in 2007. Lobby organizations identified included trade associations such as the American Chemistry Council (ACC), American Petroleum Institute (API), U.S. Chamber of Commerce and companies such as Dow Chemical, DuPont, ExxonMobil and Halliburton and lobby firms such as Bob Moss, Ogilvy and Holland & Knight.

Alternatively, member companies of the Association of American Railroads (AAR), such as CSX, BNSF & Norfolk Southern, are members of trade associations lobbying with the chemical industry, yet the AAR issued a statement in February 2008 saying, **"It's time for the big chemical companies to do their part to help protect America. They should stop manufacturing dangerous chemicals when safer substitutes are available. And if they won't do it, Congress should do it for them."**

### **Deadly Accidents**

The 1984 Union Carbide's Bhopal, India plant had the worst industrial accident in history. Forty tons (half a rail car) of methyl isocyanate (MIC) leaked into the community at midnight killing 8,000 people within days and claiming another 12,000 lives since.

In June, 2004, three people were killed in a train accident in a remote area southwest of San Antonio, Texas when a tank car carrying chlorine broke open in the 25 mph crash, releasing a portion of the tank car contents.

On January 6, 2005 ten people were killed, 58 hospitalized and hundreds sought treatment in Graniteville, South Carolina when chlorine was released again when one train slammed into a parked train in the middle of the night. The cars involved were allegedly state of the art construction.

Both of these tragedies could have resulted in a much higher number of fatalities and injuries if they had occurred in densely populated areas.

### **Comprehensive and Permanent Chemical Security Legislation Is Urgently Needed**

We have lost over six years since the 9/11 attacks. Legislation in name only will not protect communities. Programs limited to fence-line or perimeter security will not prevent an attack or eliminate the consequence of a successful attack.

A key test of whether chemical facility security legislation will protect the millions of Americans still at risk is whether it contains minimum standards and truly protective provisions that:

- Require all plants to assess the feasibility of safer more secure methods and technologies that can eliminate the consequences of an attack on a chemical plant.
- Require "high-risk" facilities to use safer methods, technologies or chemicals.
- Insure that the 3,400 to 4,400 facilities that DHS identified as posing a risk to 1,000 or more people are included in the "high-risk tier."
- Includes protection of approximately 3,000 U.S. water treatment plants and other chemical facilities currently explicitly exempted by the temporary law.
- Expedite deadlines by when DHS will require and approve Site Security Plans.
- Require meaningful involvement of plant employees in developing Security Plans.
- Include whistle blower protections to enhance enforcement.
- Provide basic information to the public on facility compliance or non-compliance of the law.
- Ensure the right of all states to establish stronger security standards.
- Enhance enforcement by allowing citizen suits.

**NOTE: See April 14, 2009 blue-green coalition letter to U.S. House of Representatives from 52 organizations in Appendix A on page 18.**

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U.S. Naval Research Laboratory, testimony before the City Council of Washington, D.C. by Dr. Jay P. Boris, Chief Scientist and Director of the Laboratory for Computational Physics and Fluid Dynamics, October, 6, 2003.

## Appendix A

**International Chemical Workers Union Council/UFCW – Sierra Club  
United Steelworkers (USW) – International Brotherhood of Teamsters – United  
Automobile Aerospace and Agricultural Implement Workers of America (UAW) –  
American Federation of State, County and Municipal Employees (AFSCME) –  
Communications Workers of America (CWA) – Physicians for Social Responsibility –  
OMB Watch – Greenpeace – NJ Work Environment Council – U.S. Public Interest  
Research Group – Environmental Health Fund – Advocates for Environmental Human  
Rights – American Association on Intellectual and Developmental Disabilities – Clean  
New York – Environment America – Clean Water Action – Connecticut Coalition for  
Environmental Justice – Empire State Consumer Project – Ecology Center Healthy  
Building Network – Environmental Health Strategy Center – Healthy Schools Network –  
Environmental Justice Action Group of WNY Kentucky Environmental Foundation –  
Citizens' Environmental Coalition – Michigan Environmental Council – Mossville  
Environmental Action Now – Service Employees International Union (SEIU) – Natural  
Resources Council of Maine – Sciencecorps – Silicon Valley Toxics Coalition – US  
Campaign for Justice in Bhopal – Friends of the Earth Commonweal – Deep South  
Center for Environmental Justice – National Refinery Reform Campaign – National  
Bucket Brigade Coalition – Center for International Environmental Law – Environmental  
Working Group – Institute for Children's Environmental Health International –  
Association of Fire Fighters (IAFF) – Detroiters Working for Environmental Justice –  
Green Harvest Technologies – Alliance@IBM – Environmental Defense Fund Maryland  
Pesticide Network – Beyond Pesticides – Strategic Counsel on Corporate Accountability  
– Natural Resources Defense Council – Maine People's Alliance**

April 14, 2009

Dear Representative;

U.S. chemical plants remain one of the sectors of America's infrastructure most vulnerable to terrorist attacks. The Department of Homeland Security (DHS) has identified approximately 7,000 high-risk U.S. chemical facilities. However, unless Congress replaces a flawed temporary law with a comprehensive chemical security program, millions of Americans will remain at risk.

The statute Congress passed in 2006 temporarily authorized "interim" regulations that are wholly inadequate to protect communities. Furthermore these rules expire on October 4, 2009 leaving the 111th Congress only six months to enact truly protective legislation. Congress must pass comprehensive legislation before the temporary law expires.

Among the fatal flaws in the "interim" statute:

--- It prohibits the DHS from requiring the most ironclad security measures. DHS cannot require any specific "security measure," including the use of safer and more secure chemical processes that can eliminate catastrophic hazards posed by poison gas, even when cost-effective alternatives are readily available.

--- It explicitly exempts thousands of chemical facilities, including approximately 2,650 water treatment facilities, some of which put major cities at risk.

--- It fails to involve plant employees in the development of vulnerability assessments and security plans or protect employees from excessive background checks.

In March 2008 the House Homeland Security Committee adopted the "Chemical Facility Anti-Terrorism Act of 2008" (H.R. 5577) in a bipartisan vote. H.R. 5577 addresses many of the flaws in the interim law. However, the chemical manufacturers lobby opposed it and favors making the interim law permanent.

The price of failure could be staggering. According to a 2008 Congressional Research Service review of EPA data, 100 U.S. chemical plants each put 1 million or more people at risk. In 2004 the Homeland Security Council projected that an attack on a chemical facility would kill 17,500 people, seriously injure 10,000 more people and send an additional 100,000 people to the hospital.

The good news is that most of these hazards are preventable. Since 2001 more than 220 chemical facilities have switched to safer and more secure chemicals or processes which have eliminated risks to millions of people. Cost effective safer technologies are used in a wide variety of facilities including water treatment plants, power plants, oil refineries and other manufacturers. Many facilities, however, have yet to adopt safer technologies. More than seven years after the 9/11 attacks we need chemical security standards that put all high-risk facilities on an even playing field.

**President Obama raised this issue in his campaign and was a leader on chemical security in the Senate. In a March 2006 floor statement, he said, "...there are other ways to reduce risk that need to be part of the equation. Specifically, by employing safer technologies, we can reduce the attractiveness of chemical plants as a target...Each one of these methods reduces the danger that chemical plants pose to our communities and makes them less appealing targets for terrorists."**

To that end, Congress should pass, and the President should sign, chemical security legislation that at a minimum:

- 1) Reduces the consequence of an attack through the use of safer and more secure chemicals and processes
- 2) Includes all categories of facilities such as water treatment plants
- 3) Involves plant employees in developing plant security programs and gives employees protection from excessive background checks
- 4) Ensures equal enforcement for chemical facilities and accountability for government
- 5) Allows states to set more protective security standards
- 6) Requires collaboration between the DHS, EPA and other agencies to avoid regulatory redundancy, inconsistency or gaps in supply chain security.

**In the face of potentially ruinous liability from a catastrophic chemical release, some business leaders agree. In February 2008, the Association of American Railroads said, “It’s time for the big chemical companies to do their part to help protect America. They should stop manufacturing dangerous chemicals when safer substitutes are available. And if they won’t do it, Congress should do it for them.”**

We look forward to working with you on this critical legislation.

Sincerely,

Holly Hart  
**United Steelworkers (USW)**

Rick Hind  
**Greenpeace**

Elizabeth Hitchcock  
**U.S. Public Interest Research Group**

LaMont Byrd  
**International Brotherhood of Teamsters**

Tracey Easthope  
**Ecology Center**

John Morawetz  
**International Chemical Workers Union Council/UFCW**

Ed Hopkins  
**Sierra Club**

Kristen Welker-Hood, ScD, MSN, RN  
**Physicians for Social Responsibility**

Shawnee Hoover  
**Friends of the Earth**

Rick Engler  
**New Jersey Work Environment Council**

Charles Loveless  
**American Federation of State, County and Municipal Employees (AFSCME)**

Brian Turnbaugh  
**OMB Watch**

Daniel Rosenberg  
**National Resources Defense Council**

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