Chemical Homeland Security, Fact or Fiction: Is the U.S. Ready for an Attack on Our Chemical Facilities? An Examination of State and Federal Laws Aimed at Immediate Remediation

Leticia M. Diaz

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CHEMICAL HOMELAND SECURITY, FACT OR FICTION: IS THE U.S. READY FOR AN ATTACK ON OUR CHEMICAL FACILITIES? AN EXAMINATION OF STATE AND FEDERAL LAWS AIMED AT IMMEDIATE REMEDIATION

Leticia M. Diaz

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The invitation to disaster is in persisting with a status quo in which public officials toss and turn at night, mindful of how exposed we remain, while the general population goes about their lives oblivious to the perils that confront them.¹

¹ STEPHEN FLYNN, AMERICA THE VULNERABLE 16 (2004).

+ Dean and Professor of Law, Barry University School of Law; J.D., Rutgers University School of Law, Newark (1994); Ph.D. (Organic Chemistry), Rutgers University, Newark (1988). This article supplements the author’s previous article on the regulation of household chemicals. Leticia M. Diaz, Homeland Security, Pesticide Regulation and Common Household Chemicals: Are We Adequately Protecting All Our Sources?, 14 VILL. ENVT'L. L.J. 211 (2003). Deep appreciation to Kathryn Shaw for her excellent work in researching and editing this article.
Tokyo’s September 11th occurred on March 20, 1995, when sarin gas was released in five coordinated attacks on several lines of the Tokyo subway. Twelve people were killed and more than 5500 were injured. Where did the perpetrators obtain the gas? How vulnerable were Japan’s chemical facilities? Are U.S. chemical facilities equally susceptible to terrorist infiltration? Is the United States ready for the unknown when it has been unable to respond rapidly to the known? Numerous state and federal agencies were responsible for disaster recovery response after Hurricane Katrina. Yet despite the bravado put forth by many of these agencies, response was slow and victims died or went without adequate assistance for weeks. The response was grossly inadequate, notwithstanding the advance warning that such a disaster was inevitable. Is the United States prepared for a chemical disaster without warning, such as an attack on our chemical facilities by terrorists? Is the United States prepared for a chemical attack even with warning?

I. INTRODUCTION

A nationwide study conducted shortly after September 11th showed that “agencies have bolstered their preparedness efforts, but substantial variation exists in the approach to preparedness and the preparedness needs of local agencies in small and large counties.” From this study, it is clear that federal legislation is needed to unify the states in their preparedness for such an attack. Senator Joseph Lieberman, discussing nuclear and chemical security, stated “that despite the eye opening effects of the 9/11 attacks, ‘somehow we have not yet protected one of our greatest..."
Chemical Homeland Security, Fact or Fiction?

Senator Lieberman's perhaps prophetic acknowledgment of a potential terrorist attack notes a major area of homeland security upon which Congress has thus far been slow to act. Although the government has long since recognized the chemical industry's potentiality as a terrorist target, few federal regulations impose security requirements. Are legislators any closer to securing one of the nation's most vulnerable targets?

This article examines the need for federal regulation of the chemical industry, specifically chemical facilities, and the legislation that came before the 109th Congress. Part II discusses the various reasons supporting increased regulation of the chemical industry. It explains the vulnerability of the industry to terrorist attack and the likelihood that any response to such an attack would be entirely insufficient. Part III presents a review of the previous federal regulations that Congress has proposed, as well as the legislation that currently regulates a small portion of the chemical industry. Part IV analyzes current bills before the U.S. House of Representatives and the U.S. Senate. Part V discusses state legislation addressing chemical site security, focusing on the principal places of business for industry leaders. Part VI discusses the newly enacted—and inadequate—Homeland Security Appropriations Act of 2007. Part VII recommends a unified legislation to guide the entire chemical industry by one set standard.

II. THE INCREASING NEED FOR FEDERAL LEGISLATION TO ENSURE THE SECURITY OF CHEMICAL FACILITIES

Many believe the chemical industry is the "Achilles heel in our nation's infrastructure." While daily news broadcasts suggest that our focus is on national security and increasing our protection, we are actually removing more assets from our security. State and local governments are laying off emergency responders and law enforcement officers and tightening their budgets for homeland protection. The U.S. Coast Guard and cus-


11. Marta Lawrence, A Clear Shot at Chemical Plant Security, SECURITY MGMT., July 2006 at 36, 36; see also infra Part III.B (discussing the Maritime Transportation Security Act (MTSA), the Clean Air Act, and other statutes addressing chemical security).


13. See FLYNN, supra note 1, at 1-2.

14. See id. at 1-2.
toms officials are receiving more responsibilities but losing force in numbers to meet growing security demands. In addition, the burden on states for funding their own homeland security programs is growing; however, the looming deficits in state budgets are making actual improvements in such programs difficult.

Since September 11, 2001, both the Department of Justice and the Director of the CIA have warned that the threat to our chemical facilities, by al Qaeda or otherwise, is "real and credible." The Brookings Institution estimated in 2002 that the extent of potential casualties for an attack on chemical facilities ranks second only to that from biological and atomic attacks. The impact of an attack on a chemical facility can be felt not only in the immediate loss of lives but also in the prolonged effects on the local and regional economy and environment. The Department of Homeland Security's Interim National Infrastructure Protection Plan indicates that "a failure in one sector will have a significant impact on the ability of another sector to perform necessary functions." With the $550 billion chemical industry employing over 900,000 people, one terrorist attack could cause far-reaching market instability. The chemical sector accounts for ten percent of all exports, and chemicals touch ninety-six percent of all manufactured goods. The interdependent nature of indus-

15. Id. at 42-43.
16. Id. at 53.
19. Chemical Attack Hearing, supra note 17, at 67-68. An attack on a chemical facility disrupts the local and regional economy because of the symbiotic nature of the industry. Id. For example, the agricultural and pharmaceutical industries as well as drinking water treatment facilities are dependent on the chemical industry for survival. Id.
20. Id. at 68. Following the attacks on September 11, 2001, rail service was slowed in some areas due to a fear of an intentional release of chlorine or other hazardous chemicals that the railcars were transporting. Id.
22. Id.
tries, together constructing a critical infrastructure, became apparent from the attacks of September 11th, 2001. Immediately following the attacks on September 11th, the federal government ceased all aviation travel and slowed the influx of goods into our ports.23 The return to a normal trade flow, both domestically and internationally, was dawdling, as the government tried to increase the number of assessments of people and goods entering the United States.24

There are currently over 15,000 facilities in the United States that manufacture, use, or store large amounts of chemicals.25 Of these 15,000 facilities, the Department of Homeland Security (DHS) has identified 3400 facilities as possible hazards.26 The hazards posed by chemical facilities are either a direct attack on a facility or the use of inside employees to procure chemical materials that may be used as weapons or to make weapons.27 Trends in terrorism have shown that although the number of terrorist attacks has decreased from the early 1980’s, the overall number of those injured or killed has increased.28 Essentially, terrorists are looking for the most effect for a single effort. One expert on national security has deemed a direct attack on a chemical facility the equivalent of a “poor man’s atomic bomb.”29

A direct attack on a chemical facility provides the opportunity for a single attack causing a large number of casualties. For example, exploding a nuclear reactor would spread radiation over countless miles of surrounding landscape. Certain key chemical components of nerve gas or sarin, once stolen, can be easily transported and used to kill thousands in chemical attacks across the country. A report issued by an interest group stated that “more than 41 million Americans live within range of a toxic cloud that could result from a chemical accident at a facility located in

24. FLYNN, supra note 1, at 9-10.
28. Id. In the 1980s there were only 23 fatalities and 105 injuries as a result of 267 attacks, compared to 182 fatalities and 1932 injuries in the 1990s as a result of 60 attacks. COUNTERTERRORISM THREAT ASSESSMENT AND WARNING UNIT, FED. BUREAU OF INVESTIGATION, TERRORISM IN THE UNITED STATES 1999 16 (1999), available at http://www.fbi.gov/publications/terror/terror99.pdf.
their home zip code." A study conducted by the Surgeon General for the U.S. Army found that a chemical release as a result of a terrorist attack could affect more than 2.4 million people.

In the early 1990s, direct attacks were attempted overseas on plants producing fertilizers, pharmaceuticals, and pesticides, all in heavily populated areas of Croatia. Terrorists have also been able to procure chemicals through their employment within a chemical plant. The 1993 World Trade Center bombers reported that they were able to order the chemicals used in a vehicle bomb by becoming employed as chemical engineers and acquiring company stationery.

Investigative reporting has further exposed chemical site vulnerabilities to the public. Following a Pittsburgh Tribune-Review report, 60 Minutes tried to see how security at chemical facilities really stacked up. 60 Minutes visited a number of heavily populated cities. At a Los Angeles facility, less than a mile from a school and a day care center, reporters discovered that although the facility’s front gate was well-manned, a gate in the rear was left unguarded and easily accessible. At a Houston facil-

30. Schierow, supra note 27, at 8 (quoting ALLISON LAPLANTE, U.S. PUB. INTEREST RESEARCH GROUP, TOO CLOSE TO HOME: A REPORT ON CHEMICAL ACCIDENT RISKS IN THE UNITED STATES (1998)).
32. See id. at 4. On August 6, 1995, Serb aircraft fired 57mm missiles at a chemical plant in Croatia. BBC, Official Statements and Actions: Defence Ministry Condemns Bosnian Serb Air Raids, BBC SUMMARY WORLD BROADCASTS, Aug. 9, 1995, available in LEXIS, Nexis Library, BBCMIR File. The Croatian Defence Ministry considered such an attack international terrorism because attacking a chemical facility “could cause an extensive ecological catastrophe, thus endangering human lives as well as polluting the environment.” Id.
33. See Schierow, supra note 27, at 4.
34. Id. In another example of vulnerability, shortly after the attacks of September 11, 2001, a warehouse in Florida reported that 400 pounds of methyl bromide, a chemical causing severe respiratory problems if released into the air, was stolen during a two-hour period when the warehouse was unguarded. Joseph A. Siegel, Terrorism and Environmental Law: Chemical Facility Site Security vs. Right-to-Know?, 9 WIDENER L. SYMP. J. 339, 368 (2003).
37. See U.S. Plants: Open to Terrorists, supra note 35.
38. Id.
ity, a terrorist could enter the facility unquestioned.39 The crew also
found that gates were unlocked and that tanks housing deadly chemicals
were left unprotected.40 Months after the *Pittsburgh Tribune-Review*
first published an exposé on lax security at chemical plants, the *60 Minutes*
crew accompanied the *Tribune-Review* reporter on a revisit to one of the
facilities, and found that they were still able to just walk in unques-
tioned.41 They were inside the facility long enough to get to the most
dangerous chemicals.42 If they had been terrorists rather than reporters,
they could have released the chemicals.43 Most of the employees just
waved and greeted the crew as they walked through the facility unes-
corted.44 After the crew had left the property, they were finally stopped
and asked their purpose for being at the facility.45 The *60 Minutes* crew
and the *Tribune-Review* reporter were only given a twenty-five dollar
citation for trespassing.

Another study also shows the shortcomings of security in the chemical
sector. In 1999, a study conducted by the Department of Health and
Human Services Agency for Toxic Substances and Disease Registry indi-
cated that “security at chemical plants [in two communities] ranged from
fair to very poor.”47 The study found security vulnerabilities such as unat-
tended chemical barges and rail cars containing chemicals parked near
residential areas.48 Investigations such as the *60 Minutes* special report
and the Department of Health and Human Services study expose the
weaknesses in our nation’s plan for safeguarding dangerous chemicals
from terrorist acquisition.

One recent accident at a chemical plant in Apex, North Carolina shows
the effects that an attack on only a small facility might have.49 On Octo-
bear 6, 2006, a chemical fire at an EQ (Environmental Quality) Industries
facility, formerly responsible for housing and preparing hazardous waste

39. *Id.* Carl Prine of the *Pittsburgh Tribune-Review* and CBS News correspondent
Steve Croft, while discussing the appearance of gates and fences, noted that “an intruder
could simply walk right in.” *Id.*
40. *Id.*
41. *Id.*
42. *Id.*
43. *See id.*
44. *Id.*
45. *Id.*
46. *Id.*
47. JOSEPH L. HUGHART & MARK M. BASHOR, AGENCY FOR TOXIC SUBSTANCES
AND DISEASE REGISTRY, DEPT. OF HEALTH AND HUMAN SERVS., INDUSTRIAL
docs/cep1118992.htm.
48. *Id.*
49. *See Ryan Parry, 17,000 Flee Chemical Blast Town, The MIRROR*, Oct. 7, 2006,
available at http://www.mirror.co.uk/archive/tm_method=full%26objectid=17888063%26siteid=89520-name_page.html.
for disposal, caused chlorine to billow into the air.\textsuperscript{50} After being alerted by a reverse 911 system,\textsuperscript{51} approximately 17,000 local residents in the small town, about half of the total population, were required to evacuate for more than a day.\textsuperscript{52} For a while after the fire started, a local resident driving by the fire stated that there were "no fire officials, no police officers and no warning signs that there were chemicals and hazardous waste in the vicinity."\textsuperscript{53} Forty-four people, including first responders, were taken to the emergency room after experiencing shortness of breath and nausea.\textsuperscript{54} EQ Industries had been fined a number of times in past years, including a fine for improperly housing their chemicals.\textsuperscript{55} These fines, as well as most current legislation, are of no avail in the protection and security of our nation's chemical facilities.

Although lacking authority to enforce legislation, the DHS has undertaken a number of voluntary efforts.\textsuperscript{56} DHS currently provides training programs, including simulated attack programs, to security officers and first responders.\textsuperscript{57} DHS also conducts vulnerability assessments at high-risk facilities and offers guidance to the relevant state and local governments on options for reducing the vulnerabilities at those sites.\textsuperscript{58} In addition, DHS operates a center that produces day-to-day threat updates to the chemical industry.\textsuperscript{59} The chemical industry, to further coordination


\textsuperscript{51} Ovaska, Coleman & Shaffer, supra note 50, at A1. A reverse 911 system is a computer that will call the phone numbers of citizens located within a specified geographic area and then play a pre-recorded message. See News Release, Reverse 911 Releases New Version of its Interactive Notification Solution (Jan. 24, 2006), available at http://www.reverse911.com/b220fe05c0 Sites/www.reverse911.com/files/REVERSE%20911%20Releases%20New%20Version%20-%20%20Jan%2024,%202006.pdf.

\textsuperscript{52} Chemical Fire Evacuation Over, supra note 50; Ovaska, Coleman & Shaffer, supra note 50, at A1.


\textsuperscript{54} See ABC Good Morning America (ABC television broadcast Oct. 6, 2006), available at 2006 WLNR 17368869; Chemical Fire Evacuation Over, supra note 50.

\textsuperscript{55} ABC's Good Morning America, supra note 54; Chemical Fire Evacuation Over, supra note 50.

\textsuperscript{56} Chemical Attack Hearing, supra note 17, at 17 (testimony of John B. Stephenson, Director, Natural Resources and Environment, U.S. Government Accountability Office); see also Larry Pearl, NIPP Finalized as New Chemical Security Bill Introduced, PESTICIDE & TOXIC CHEMICAL NEWS, July 3, 2006, at 4 (discussing the final version of DHS's National Infrastructure Protection Plan and the planned release of sector specific plans).

\textsuperscript{57} See Chemical Attack Hearing, supra note 17, at 72 (prepared statement of John B. Stephenson).

\textsuperscript{58} Id.; Pearl, supra note 56, at 4.

\textsuperscript{59} Pearl, supra note 56, at 4.
with DHS, created the Chemical Sector Council in 2004 as an effort to promote the “sharing of information about . . . vulnerabilities, . . . potential protective measures and best practices.”

DHS currently relies on a “patchwork” of voluntary initiatives. For example, facilities that are members of the American Chemistry Council (ACC) are required to implement the Responsible Care Security Code. This code “prioritize[s] every facility by risk[,] assesses vulnerabilities[,] implement[s] security enhancements[,] and] verif[ies] the implementation of physical security measures, using third parties that are credible within the local community, such as first responders or law enforcement officials.” While ACC members account for eighty-five percent of the production of chemicals in the United States, the majority of the chemical industry only uses or stores chemicals.

One DHS official commented that “[w]hile most companies have been eager to cooperate with the department, it has become clear the entirely voluntary efforts of these companies alone will not sufficiently address security for the entire sector.” Voluntary efforts have been found inadequate, especially among smaller companies, because smaller companies lack the knowledge and funds to properly address security vulnerabilities. Although “[t]errorism is simply too cheap, too available, and too tempting ever to be totally eradicated,” a unified legislation is now

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60. Chemical Attack Hearing, supra note 17, at 72-73 (prepared statement of John B. Stephenson). In April 2005, the Chemical Sector Council consisted of sixteen prominent associations, such as the American Chemistry Council (ACC), the National Petrochemical and Refiners Association (NPRA), and the Synthetic Organic Chemical Manufacturers Association (SOCMA). Id. at 73 & n.10. The council is charged with aiding DHS in its efforts to reduce the risks to the chemical sector. Id. at 72.


63. Chemical Facility Anti-Terrorism Act Hearing, supra note 21, at 35 (prepared statement of Martin J. Durbin).

64. Id.


67. Flynn, supra note 1, at 59.
required to ensure security for the chemical sector and limit the effects of terrorism on our nation. Even though a number of attempts have been made to pass legislation regulating security in the chemical industry, every attempt to date has failed.

III. PAST FEDERAL LEGISLATIVE ATTEMPTS AT CHEMICAL FACILITY SECURITY AND CURRENT INADEQUATE GUIDING REGULATIONS

A. Past Federal Legislative Attempts at Chemical Facility Security

Shortly after September 11th, 2001, Senator Jon Corzine of New Jersey introduced the Chemical Security Act of 2001. The Act, if passed, would have placed the Environmental Protection Agency (EPA) in the lead role as its administrator. The stated purpose of the Act was to “protect the public against the threat of chemical attacks” by requiring the use of inherently safer technology and increased security measures. Under the Act, the EPA would be responsible for determining which of the 15,000 facilities required to submit Risk Management Plan (RMP) reports under the Clean Air Act constitute high-risk facilities. Factors such as “population density” and “proximity of other critical infrastructure” would be considered when determining whether a plant is a high-risk facility. Each high-risk facility then would conduct vulnerability assessments and prepare response plans to improve security measures.


69. S. 1602 § 3(2).

70. S. 1602 preamble, § 2(3)(A)(ii), (C).


72. Id.; see also S. 1602 § 4(a)(2)(A)-(F). It appears that these factors are used to narrow down the 15,000 facilities to those facilities that, if attacked, would have the largest impact based on either population or amount of chemicals or type of chemicals. S. REP. NO. 107-452, at 6.

73. S. REP. NO. 107-342, at 4. In November of 2002, the National Institute of Justice released a report discussing a methodology of conducting vulnerability assessments. NAT’L INST. OF JUSTICE, A METHOD TO ASSESS THE VULNERABILITY OF U.S. CHEMICAL FACILITIES 1 (2002). Under the proposed risk-based analysis, “risk is a function of the severity of consequences of an undesired event, the likelihood of adversary attack, and the likelihood of adversary success in causing the undesired event.” Id. at 2. The method is a twelve-step process involving a facilitator, corporate management, and a site survey team. Id. at 2-5.

The first step, screening, is used to determine whether a vulnerability assessment is necessary. Id. at 3, 6. This step requires a facilitator or corporate manager to look at the possible dangerous events, such as an off-site release or an attack on a facility, the number of people that could be affected, and the importance of the facility to the critical infrastructure. Id. If the facility requires an assessment, then at the second step the facilitator cre-
and implement safer technology. As an enforcement measure, the bill also would establish civil and criminal penalties for non-compliance.

After the Chemical Security Act of 2001 failed in the 107th Congress, Senator Corzine again proposed legislation to protect the public against the threat of chemical attacks. On January 14, 2003, Senator Corzine introduced the Chemical Security Act of 2003. This legislation was almost identical to the legislation introduced in the 107th Congress and still contained provisions requiring the implementation of inherently safer technology. Interest groups and trade associations rallied against the bill, and again it was defeated.

As a result of this defeat, Senator James Inhofe introduced the Chemical Facility Security Act of 2003, a bill that was more “industry

ates a project design that encompasses the needs of the facility, the team to accomplish the project, and the necessary resources. Id. The third step requires characterizing the facility through the use of blueprints, site surveys, process descriptions, and the risk management plan. Id. at 3-4, 7. The next step is to derive a severity level from one to four for each potential undesired event. Id. at 12. At security level one, the highest level, the facility will experience major property damage, environmental damage, and public and worker fatalities in the event of an attack. Id. at 13. At security level four, an accidental or intended release will have no impact outside the facility. Id.

The fifth step is to assess and define possible threats. Id. This process requires the site team to describe the possible threats, the actions that the threatening groups could take, their motives, and capabilities. Id. The method recommends that teams look at threats from insiders as well as threats from the outside. Id. at 14. The threats are then prioritized at step six. Id. at 16.

Next, at step seven, the site team assesses the current protective measures at the site. Id. The method advocates utilizing multiple security measures together and including mitigating measures in case of failure. Id. at 17-19. The eighth step is a chemical facility walk-through to allow the team to verify the previous work of the facilitator in the prior steps. Id. at 20. Next, the team analyzes the effectiveness of the system, including physical protection provided by fencing or limited paths, protection provided by personnel, and protection of process controls. Id. at 20-24. After assessing the current protection, at step ten the team analyzes the risks that exist and then makes recommendations to further reduce the risk. Id. at 24-26. Finally, the team prepares a report for corporate management to implement suggestions from the assessment. Id. at 27.

75. S. 1602 § 7.
76. The Chemical Security Act of 2001 failed as a result of heavy opposition from a well-funded chemical industry. In particular, the American Chemistry Council opposed the 2001 legislation because it forced chemical facilities to implement inherently safer technology. See U.S. Plants Open to Terrorists, supra note 35.
78. Id.
80. See FLYNN, supra note 1, at 119. Those affected, including chemical facilities, manufacturers, and the agricultural industry, opposed requirements to use inherently safer technologies at high-risk facilities. Id.; see also discussion infra Part IV.B (further discussing the industry’s reaction to the inherently safer technology requirements).
Unlike the previous bill, new legislation required the DHS to take a leading role in administration. Like its predecessor, the Chemical Facility Security Act also would have required assessments of the vulnerability of each facility to a "terrorist release." Based on the results of the assessments, facilities would have been required to submit a site security plan to the DHS. This plan was required to include security measures to reduce vulnerabilities by describing improvements to equipment and site layout. DHS would also have been required to submit threat information for each facility to aid the facility in its assessment.

The Chemical Facility Security Act permitted facilities to petition DHS to recognize their specific procedures already in use and recognized by other state and federal agencies. In determining the adequacy of vulnerability assessments and security standards, DHS would consider the nature and quantity of chemical substances on-site, the extent of potential injury in case of a terrorist attack and the likelihood that a facility would be attacked. All information obtained in the process, with certain limited exceptions, would be exempt from disclosure to the public and unauthorized disclosures would result in the imposition of criminal and civil penalties. In addition, a chemical facility would be subject to administrative penalties for a failure to comply with the Act and the orders of the Secretary, as well as to civil action in the U.S. District Courts, possibly resulting in either injunctive relief or a $50,000 civil penalty for each day the facility is not in compliance. This industry-friendly Act failed to address inherently safer technology and did not preempt any other federal or state law. As its predecessors had, this bill also fizzled in the Senate and failed to pass.

82. Compare S. 994 § 3(B)(2), with S. 1602 § 3(2).
83. S. 994 § 4(a)(1)(A); see also supra note 73 (discussing of vulnerability assessments).
84. S. 994 at § 4(a)(1)(C).
86. Id. § 4(a)(3)(B).
87. Id. § 4(a)(4).
88. Id. § 4(c)(2)(A).
89. Id. § 4(e)(2).
90. Id. § 4(e)(3).
91. Id. § 4(e)(1)-(3).
92. Id. § 4(i)(1).
93. Id. § 4(i)(3).
94. Id. § 8(b).
95. Id. § 8(a).
96. See id. § 10.
97. See Democratic Policy Comm., The Reality Behind the Rhetoric on Homeland Security: Bush Administration and Senate Republicans Have Compiled a Dismal Record
B. Current Inadequate Guiding Regulations

Various other congressional enactments affect the implementation of security efforts within the chemical industry. However, the number of facilities covered by these acts are only a small percentage of the over 15,000 facilities. For example, the Public Health Security and Bioterrorism Response Act of 2002 "requires community water systems serving more than 3,300 people to perform vulnerability analyses of their facilities." Apparently, terrorists' contamination of the water of communities with fewer than 3,300 people is not a sufficient security risk to our government. Further, the Maritime Transportation Security Act of 2002 (MTSA) currently requires the 238 maritime chemical facility owners and operators subject to regulation to conduct vulnerability assessments of certain facilities and to develop security plans and measures to mitigate these vulnerabilities. These, and similar acts, fail to comprehensively address the danger of attacks against U.S. chemical facilities and are but mere fallacies cushioning an unwarranted sense of national security.

Other legislation broadly calls for safety and protective measures but fails to provide specific and adequate guidelines and solutions to homeland protection. "Statutes such as the Occupational Safety and Health Act . . . the Clean Air Act, and the Right-to-Know Act impose safety and emergency response requirements on chemical facilities that may incidentally reduce the likelihood and mitigate the consequences of terrorist attacks;" however, these statutes do not include vulnerability assessments or measures to address problems that would be identified by such an assessment. The Clean Air Act requires facilities handling more than a threshold amount of certain governmentally-identified and regulated hazardous materials "to prepare and implement a risk management plan to detect and prevent or minimize accidental releases." Plans include

(Sept. 14, 2004), http://democrats.senate.gov/dpc/dpc-new.cfm?doc_name=fs-108-2-240 (indicating that Senator Inhofe's bill was never called to a floor vote after it passed a committee in October of 2003).

98. See infra notes 100-114 and accompanying text.

99. Chemical Plant Security Hearing, supra note 62, at 62 (prepared statement of John Stephenson) (noting that the requirements would apply to only twenty-one percent of facilities).

100. Chemical Attack Hearing, supra note 17, at 70 (prepared statement of John B. Stephenson).

101. 46 U.S.C.A. §§ 70102-70104 (West Supp. 2007); see also id. at 71-77.

102. See infra notes 103-114 and accompanying text.

103. Chemical Plant Security Hearing, supra note 62, at 63 (prepared statement of John Stephenson). These Acts apply to facilities based on whether the facility houses a threshold amount of a chemical. Facilities can opt to implement inherently safer technology by changing the chemicals used or reducing the amount of the chemical at the facility. Id. These are all voluntary measures that a facility could choose to take to be exempted from the requirements of the Act, but are not required. See id.

safety precautions, maintenance, monitoring, training measures, and an emergency response plan.\textsuperscript{105}

Although one interpretation of the Clean Air Act would give the EPA proper authority to regulate so as to reduce vulnerability to terrorist threats, the EPA has refused to interpret the Act in this way for fear of litigation.\textsuperscript{106} The Clean Air Act requires facilities to comply with certain requirements based on accidental releases.\textsuperscript{107} An accidental release is defined as "an unanticipated emission of a regulated substance or other extremely hazardous substance into the ambient air from a stationary source."\textsuperscript{108} If an unanticipated emission could be interpreted to include a terrorist attack, then the EPA would have authority over all facilities and could require vulnerability assessments and security response plans with regards to the threat of such an attack.\textsuperscript{109}

The EPA also requires those facilities processing, handling, or storing a certain quantity of a chemical to conduct a hazard assessment that includes identifying possible accidental releases and providing an emergency response when there is a release.\textsuperscript{110} The EPA could require these facilities to conduct vulnerability assessments as part of the hazard assessment under the same interpretation of an "accidental release."\textsuperscript{111} The EPA, however, has taken the position that "chemical facility security would be more effectively addressed by passage of specific legislation."\textsuperscript{112}

Additionally, the EPA's regulations implementing the Resource Conservation and Recovery Act of 1976 require facilities housing hazardous waste to post warning signs, have controlled entry gates, and conduct twenty-four hour surveillance.\textsuperscript{113} However, this Act covers only twenty-one percent of the 15,000 facilities in the chemical sector.\textsuperscript{114} The short-
comings of the EPA's approach to chemical facility security and of other federal legislation addressing the subject do little to protect our nation from chemical terrorism. A call for a more expansive federal role is of the utmost urgency.

IV. CURRENT FEDERAL LEGISLATION BEFORE THE HOUSE AND SENATE

The 109th Congress considered a number of bills addressing chemical facility security. One such bill, the Chemical Facility Anti-Terrorism Act, was introduced in the Senate on December 19, 2005. Its companion bill was introduced in the House on June 28, 2006. Both bills delegate to DHS the task of establishing risk-based criteria for determining which facilities are at a greater risk of terrorist infiltration. Further, under the proposed legislation, DHS would establish security standards for such high-risk facilities. Facilities are placed into risk-based tiers by considering various factors, such as proximity to population centers, impact on national security, and likelihood of death or injury caused by a terrorist attack. Prior bills considered only those facilities requiring submission of a risk management plan to the EPA under the Clean Air Act. Facilities covered under the Clean Air Act are those that are "producing, processing, holding, or storing [extremely hazardous] substances." Conversely, the Chemical Facilities Anti-Terrorism Act allows DHS to require additional facilities to comply with the standards of the Act if the facility is of critical economic importance or if it contains threshold amounts of hazardous chemicals that are not on the risk management plan list. This authorizes DHS to require facilities then not

117. See S. 2145 § 2(3); H.R. 5695 § 2(a) (amending the Homeland Security Act of 2002).
118. S. 2145 § 4; H.R. 5695 § 2(a) (proposed 6 U.S.C. § 1802(b)(3)).
119. S. 2145, § 3(b)(5).
120. S. 2145, § 3(b)(3); H.R. 5695, § 2(a) (proposed 6 U.S.C. § 1802(b)(3)(E)).
121. S. 2145, § 3(b)(2); H.R. 5695, § 2(a) (proposed 6 U.S.C. § 1802(b)(3)(B)).
122. See supra notes 71-72 and accompanying text.
123. 42 U.S.C. § 7412(r)(1) (2000); see also DHS IS TAKING STEPS, supra note 66, at 9. A threshold amount is determined by "taking into account the toxicity, reactivity, volatility, dispersibility, combustibility, or flammability of the substance and the amount of the substance which, as a result of an accidental release, is known to cause or may reasonably be anticipated to cause death, injury or serious adverse effects to human health." 42 U.S.C. § 7412(r)(5). For example, a facility that uses or stores 2500 pounds of chlorine is subject to the accidental release prevention requirements of the Clean Air Act. 40 C.F.R. § 68.130 (2006).
124. See S. 2145 § 3(c); H.R. 5695 § 2(a) (proposed 6 U.S.C. § 1802(b)(3)).
covered under the Clean Air Act to comply with enhanced security requirements.

Under the Chemical Facilities Anti-Terrorism Act, as in previous bills, facilities are also required to conduct vulnerability assessments that must address weaknesses in physical security, communication systems, and electronic systems. Security plans must be coordinated with local first responders and should include training and unannounced drills. After each facility conducts a vulnerability assessment, the facility must develop site security plans to address those vulnerabilities.

The bill proposes chemical site security from both risk-based and performance-based approaches. A risk-based approach attempts to make security measures at a facility proportional to the threat or consequences of a terrorist attack, while performance-based standards are security measures set by DHS. These performance standards are needed to set strict security requirements at each risk-based tier level. For each tier, DHS determines threats against which the facility must be able to defend. The bill allows facilities to choose their own method of addressing the risks, as long as the methods achieve the standards established by DHS.

More specifically, the Senate bill subjects all facilities that are already governed by the MTSA to the bill’s security provisions. These facilities must submit plans currently submitted under MTSA to DHS, along with any modifications that are needed to comply with the security standards established by the Secretary of DHS under the Chemical Facility Anti-

125. S. 2145 § 4(a)(1)(A); H.R. 5695 § 2(a) (proposed 6 U.S.C. § 1803(a)(1)(A)(ii)).
126. S. 2145 § 4(a)(5)(D)(i)-(iii); H.R. 5695 § 2(a) (proposed 6 U.S.C. § 1803(b)(1)(E)).
127. S. 2145 §§ 4(a)(6)(F), 6(e)(2); H.R. 5695 § 2(a) (proposed 6 U.S.C. § 1803(b)(2)(B)).
128. S. 2145 § 6(e)(1); H.R. 5695 § 2(a) (proposed 6 U.S.C. § 1803(b)(2)(B)). The House bill requires additional drills referred to as “red team exercises.” H.R. 5695 § 2(a) (proposed 6 U.S.C. § 1803(b)(4)). Drills are designed to expose vulnerabilities and weaknesses in security plans. Id.; see also Ben Geman, House Markup Continues Today with Key Votes on Tap, ENEV’T & ENERGY DAILY, July 28, 2006. All high-risk chemical facilities are required to undergo a mock attack within six years. Geman, supra. If plan does not address vulnerabilities identified in the mock attack, then DHS must not approve the security plan. Id.
129. S. 2145 § 4(a)(1)(A)-(B); H.R. 5695 § 2(a) (proposed 6 U.S.C. § 1803(a)(1)(A)(ii)).
130. S. 2145 § 4(a)(2)(A); H.R. 5695 § 2(a) (proposed 6 U.S.C. § 1803(a)(2)).
131. See S. 2145 § 3(b),(c).
132. Id. § 3(f)(1).
133. Id. § 3(f)(2)(A). The bill does not specifically delineate how the Secretary is to determine standards. See id. § 3(f).
134. See id. § 3(f)(2)(A).
135. Id. § 3(f)(3)(B); cf. H.R. 5695 § 2(a) (proposed 6 U.S.C. § 1803(e)(2)) (providing that the Secretary “may endorse” such methods at his discretion).
136. S. 2145 § 4(e)(1).
The House bill, however, exempts those facilities subject to other statutes, such as the MTSA or the Safe Drinking Water Act. Although these facilities are required to submit their current plans to DHS, they are not required to make any changes unless the Secretary of DHS determines that stricter security measures are needed.

In addition to the civil and administrative fines for noncompliance contained in both the House and Senate bills, the Senate bill also authorizes the Secretary of DHS to shut down facilities that the Secretary believes have not appropriately addressed the risk of a terrorist threat. Under both bills, criminal charges may also result for a knowing violation of an order or site security plan.

Although most of the provisions in the legislation before each house of Congress are similar and unopposed, the lack of a preemption clause in the Senate version and the provisions in the House version proscribing the implementation of inherently safer technology are highly controversial.

A. Preemption

The current House bill allows states to make more stringent standards, as long as those standards do not "frustrate" the purpose of the federal legislation. Any state questioning whether its law is preempted by the proposed Act would be required to submit an application to the Secretary of DHS for review. Critics of the House bill fear that this language will have the same effect as preemption.

Conversely, the Senate bill expressly provides that state laws on chemical security are not preempted. Congress has been cautious about pre-
emption because of states’ rights issues and a fear that the legislation will be overturned by the courts. On the other hand, fourteen Senators have argued that the bill must be amended to preempt states from setting more stringent standards. Senator George Voinovich proposed an amendment to the Senate bill that would allow federal law to preempt state legislation. Senator Lieberman opposed the amendment, noting that many states have already moved to increase security at chemical facilities.

The most vocal advocate for a preemption clause is the chemical industry itself. The president of the National Petrochemical & Refiners Association has said that “allowing states to impose competing regulatory requirements risks creating a confusing “patchwork” of regulations that will also impede facility security protection efforts.” Others advocate that if the proposed legislation does not include a preemption clause, communities could become more vulnerable to attacks due to a lack of a centralized, cohesive, and understandable system for chemical security. The industry suggests that the legislation should go further in addressing federal preemption so that every chemical facility is required to meet the same standards and make the same investments. They recommend a preemption provision similar to the one in the Hazardous Materials Transportation Act, which preempts state requirements unless they are substantively the same as the federal program.


147. Mayberry & Franken, supra note 12. The Tenth Amendment to the United States Constitution provides that “[t]he powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved for the States respectively, or to the people.” U.S. CONST. amend. X.


149. Chemical Sites Still Subject to State Regulation, FINANCIALWIRE, June 16, 2006, available in LEXIS, Nexis Library, INVEST File.

150. Id.


152. See New Hurdles Raised, supra note 148.


154. See Chemical Facility Security: What is the Appropriate Federal Role?: Hearings Before the S. Comm. on Homeland Security and Governmental Affairs, 109th Cong. 9-11 (2005) [hereinafter Chemical Facility Security Hearings] (testimony of Martin J. Durbin, Managing Director, Security and Operations, American Chemistry Council); 49 U.S.C.A. § 5125(b) (West Supp. 2007) (“(1) Except as provided in subsection (c) of this section and unless authorized by another law of the United States, a law, regulation, order, or other requirement of a State, political subdivision of a State, or Indian tribe about any of the
tirely inadequate state legislation places tremendous burdens on the chemical industry and does little to alleviate the threat of chemical terrorism. A unified system, which can only come through federal preemption, is necessary to properly monitor chemical security.

B. Inherently Safer Technologies

Inherently safer technology (IST) should be utilized as another security measure in the arsenal against terrorist attacks on chemical facilities. Although fences, guards, background checks, and vulnerability assessments provide increased security, these methods alone are insufficient. Inherently safer technology was defined in the proposed Chemical Security Act of 2001 as the:

use of a technology, product, raw material, or practice that, as compared with the technologies, products, raw materials, or practices currently in use (i) reduces or eliminates the possibility of a release of a substance of concern from the chemical source prior to secondary containment, control, or mitigation; and (ii) reduces or eliminates the threats to public health and the environment as-
associated with a release or potential release of a substance of concern from the chemical source.\textsuperscript{156}

In November 2001, at a Sterling Chemicals, Inc. plant, police officers tested chemical security by dressing in "frogmen suits" and infiltrating the facility by slipping through a channel nearby.\textsuperscript{157} The facility, which manufactured a number of hazardous chemicals, had recently increased security by adding watchtowers, security cameras, concrete barricades, and guards.\textsuperscript{158} The police commented that the new security measures made it "harder to get in," but "had not kept them out."\textsuperscript{159} Thus, good fences may make good neighbors, but, alone, they do not make sufficient chemical security. Inherently safer technology must be included in the overall security plan. Previously proposed bills have recognized that inherently safer technology can be implemented through a number of methods.\textsuperscript{160}

Proponents of requiring the implementation of inherently safer technologies assert that reducing the levels of hazardous materials will make facilities less attractive terrorist targets and will reduce the effects of such an attack by reducing the risks associated with spills and releases of hazardous chemicals.\textsuperscript{161} Conversely, those who oppose implementation of IST programs assert that the beneficial effects of IST are unproven.\textsuperscript{162} They add that the main effect is to shift the risk from a stationary chemical plant to the nations' highways and railways.\textsuperscript{163} Further, a director of the Synthetic Organic Chemical Manufacturers Association (SOCMA) has argued that any provision requiring the use of inherently safer technology could "lead to government micromanagement of technical deci-

\textsuperscript{156} S. 1602, 107th Cong. § 3(9)(A) (2001).
\textsuperscript{157} Sharon Begley, Protecting America, NEWSWEEK, Nov. 5, 2001, at 26, 33.
\textsuperscript{158} Id.
\textsuperscript{159} Id.
\textsuperscript{160} E.g., S. 1602 § 2(3)(A)(i)-(ii); Chemical Security Act of 2003, S. 157, 108th Cong. § 2(4)(A) (2003). The four primary methods to implement inherently safer technology are substitution, intensification, moderation, and simplification. James Beebe, Comment, Inherently Safer Technology: The Cure for Chemical Plants which are Dangerous by Design, 28 HOUS. J. INT'L L. 239, 257 (2006). Substitution simply replaces the more hazardous chemical with a safer chemical. Id. at 260. Water treatment facilities have employed substitution by replacing their use of chlorine gas, a hazardous chemical that if released travels quickly and affects lung capacity, with liquid sodium hypochlorite. See id. at 261. Intensification entails reducing the quantity of hazardous chemicals used in a particular process. Id. at 258-59. Moderation involves changing the actual processing or storage of chemicals, such as by lowering pressure or temperature. Id. at 261. Simplification enhances safety in chemical manufacturing by reducing the number of steps or chemical reactions in the process. Id. at 262.
\textsuperscript{161} Chemical Plant Security Hearing, supra note 62, at 67; Lacey, supra note 143.
\textsuperscript{162} Lacey, supra note 143; Anthony Lacey, House Vote Renews Debate on 'Safe' Chemical Practices, States' Rights, ENV'TL POL'Y ALERT, Aug. 2, 2006, at 30.
\textsuperscript{163} See Chemical Plant Security Hearing, supra note 62, at 67.
sions that chemists and engineers are making on a daily basis at chemical facilities."\textsuperscript{164}

The version of the Chemical Facility Anti-Terrorism Act of 2006 that passed in the House contains an amendment requiring only high-risk facilities (determined by Clean Air Act standards) to consider using IST.\textsuperscript{165} The amended Act essentially provides that "DHS can require the high-risk facilities to use IST if the agency can prove it will significantly reduce the consequences of a terrorist attack; can feasibly be incorporated into a facility; and will not significantly impair the ability of a facility owner to continue in business."\textsuperscript{166} The amendment also allows facilities to appeal the agency's decision to use IST.\textsuperscript{167} Appeals are submitted to a chemical security review board called the "Panel on Methods to Reduce the Consequences of a Terrorist Attack."\textsuperscript{168} The panel's members, selected by DHS from other state and federal agencies, would assess the feasibility of a facility to comply with IST security measures and may offer recommendations to help the facility assess and implement IST.\textsuperscript{169}

The amendment further includes an enforcement provision that gives the Secretary of DHS power to require a facility to implement IST.\textsuperscript{170} In addition to the explicit provisions regarding IST, Representative Loretta Sanchez noted that a tier-based approach, as contained in the bill, would encourage facilities to become inherently safer because lower-risk tiers require fewer security measures.\textsuperscript{171}

IST implementation, however, has already met with some success. One example of how inherently safer technology can be effectively implemented at a modest cost is found at the Blue Plains Sewage Treatment Plant in Washington, D.C.\textsuperscript{172} Prior to September 11th, 2001, the facility


\textsuperscript{165} Lacey, supra note 143. The approved amendment resulted from a compromise on a prior version of the amendment that required all facilities to implement inherently safer technologies. Lacey, supra note 162.

\textsuperscript{166} Lacey, supra note 143.

\textsuperscript{167} Lacey, supra note 162.


\textsuperscript{169} Id.

\textsuperscript{170} Id.

\textsuperscript{171} Loretta Sanchez, \textit{How Should Congress Ensure the Security of the United States Chemical Plants? Chemical Security Legislation Needed}, \textit{Roll Call}, Sept. 25, 2006, available in LEXIS, Nexis Library, ROLLCL File. Under the proposed legislation, chemical facilities are classified into various levels or tiers based on the risk the facility would pose. High-risk facilities, or those for which a chemical release or terrorist incident would affect a large number of people, must meet more stringent requirements and are watched more closely for compliance. See text accompanying notes 117-21, 124.

\textsuperscript{172} Prepared Statement of Senator Jon S. Corzine to the Senate Committee on Homeland Security and Governmental Affairs, Apr. 27, 2005, at 5-6, available at
housed 550 tons of chlorine and sulfur dioxide, both volatile chemicals that could cover the city with a poisonous cloud if released. After September 11th, the facility replaced the chlorine with sodium hypochlorite, at a cost of only twenty-five to fifty cents a year per household.

Additionally, a report produced by the Center for American Progress documents how 284 facilities have implemented IST. The report notes that half of the facilities that implemented IST spent less than $100,000. Water treatment facilities substituted liquid chlorine or ultraviolet light for chlorine gas, while facilities manufacturing food products substituted sodium bisulfate for sulfur dioxide. Such changes reduce the use of volatile chemicals, alleviating the temptation for a terrorist attack.

The Senate version of the Chemical Facility Anti-Terrorism Act of 2006 does not require the implementation of inherently safer technology. Senator Susan Collins did not include inherently safer technology in the bill because, in her view, Congress should not "dictate specific industrial processes." Senator Collins seems to be endorsing the views


173. Corzine prepared statement, supra note 172, at 6; see also Chemical Attack Hearing, supra note 17, at 12 (testimony of Sen. John Corzine). Chlorine is "[t]oxic by inhalation, ingestion and through skin contact. Inhalation can cause serious lung damage and may be fatal" after only a few breaths depending on the concentration. Physical & Theoretical Chemistry Lab, Chemical Safety Data: Chlorine, http://ptcl.chem.ox.ac.uk/~hmc/hsci/chemicals/chlorine.html (last visited July 21, 2007).


177. ORUM, supra note 176, at 8; see also Kara Sissell, Survey Details Plants' Effort to Switch to Safer Processes, CHEMICAL Wk., May 3, 2006.

178. ORUM, supra note 176, at 10, 13-14; see also Sissell, supra note 177. Sulfur dioxide is a colorless gas that can irritate and burn the skin, causing damage to both the throat and eyes. New Jersey Department of Health and Senior Services, Hazardous Substance Fact Sheet, available at http://nj.gov/health/ehoh/ktkweb/documents/fs/1759.pdf.

179. Chemical Facility Anti-Terrorism Act of 2005, S. 2145, 109th Cong. § 2(10)(B)(vii). The bill does not require IST to be implemented, nor is an assessment necessary to evaluate the use of IST. See generally id.; see also Pearl, supra note 164.

of the ACC. According to the ACC, although there have been some successes with the implementation of IST, the “government’s role is not to make business decisions.” Emphasizing the scale of the problem, the ACC stated that “the Department of Homeland Security can never hope to be equipped to make educated decisions about the impact of internal process changes on the safety and security of 15,000 facilities . . . .”

Many scientists and lobbyists for the chemical facilities do not share the ACC’s and Senator Collins’ skepticism of IST. Commentators in the chemical industry offer various proposals to encourage the implementation of inherently safer technology, including tax incentives and tax disincentives. One commentator advocates a tax disincentive by applying an excise tax to hazardous chemicals. The increase in the cost of hazardous materials would be used in an attempt to balance the overall cost effect of using inherently safer chemicals. He proposes that even if facilities choose to pay the increased cost and continue to use hazardous chemicals, they may resort to a just-in-time system to cope with the additional costs. This system will lower the amount of chemicals on-site and, therefore, the overall threat of the facility. A tax incentive of a dollar for dollar credit on tax liability for investments in inherently safer technology is also recommended.

V. CURRENT STATE LEGISLATION

Northern New Jersey is home to “the most dangerous two miles in America.” The region has six chemical plants that could endanger over

181. Sissell, supra note 177, at 28.
182. Id.
183. See, e.g., Beebe, supra note 160, at 272-76.
184. Id. at 273-75.
185. Id. at 273-74.
186. Id. at 275. Just-in-time systems apply “the idea of producing the necessary units in the necessary quantities at the necessary time.” Thomas Earl Geu, Chaos, Complexity, and Coevolution: The Web of Law, Management Theory, and Law Related Services at the Millennium, 65 TENN. L. REV. 925, 977-78 (1998). In other words, a chemical facility would use the necessary amount of the dangerous chemical at a particular stage in the process, leading to little to no storage time of a chemical and therefore reduced amounts of the chemical on site.
188. Id. at 276.
one million people. The New Jersey Environmental Council reported that just one incident at a single plant alone in New Jersey could affect up to twelve million people within a fourteen mile radius.

Following September 11th, 2001, the New Jersey state government created a task force within the state's Department of Homeland Security to develop programs of domestic preparedness and guidelines to protect its critical infrastructure. In November 2005, following years of hearings with advisory committees, which consisted of industry representatives from the ACC and SOCMA, New Jersey became the first and only state to issue mandatory standards for chemical facilities.

These standards address the same requirements currently under debate in the proposed federal legislation. The Best Practices Standards require all chemical facilities covered to conduct facility vulnerability assessments. These assessments must be conducted by an expert approved by the American Institute of Chemical Engineers' Center for Chemical Process Safety. In addition, all facilities must develop a prevention and response plan that must address any issues revealed by the vulnerability assessment or identified by employees. Those facilities that are also covered by the Toxic Catastrophe Prevention Act must make an as-

193. Id. at 2; Magnuson, supra note 26.
194. Chemical facilities that produce, handle, use, or store chemical, rubber, or plastic products and currently fall under the Toxic Catastrophe Prevention Act or the Discharge Prevention, Containment and Countermeasure Program must comply with the Best Practices Standards. BEST PRACTICES STANDARDS AT TCPA/DPCC CHEMICAL SECTOR FACILITIES § 1 (2005) [hereinafter BEST PRACTICES STANDARDS]; see also Ricci & Feldscher, supra note 192, at 2.
196. BEST PRACTICES STANDARDS § 2; see also Ricci & Feldscher, supra note 192, at 2.
197. BEST PRACTICES STANDARDS § 3; see also Ricci & Feldscher, supra note 192, at 2.
198. N.J. REV. STAT § 13:1K-20 (2003) (facilities covered by the TCPA are those that "generate, store, handle, and transport" threshold quantities of extremely hazardous substances); see also Ricci & Feldscher, supra note 192, at 2.
essment of the practicability of adopting inherently safer technology. If the facility determines that IST measures are impractical, then the facility must justify their findings.

The Chemistry Council of New Jersey, however, opposes the implementation of inherently safer technology, stating that its requirements have “little to do with security.” Another spokesman suggested that requiring inherently safer technology would only move the danger from isolated chemical plant facilities to the highways because facilities will require more frequent shipments of chemicals.

The standards also include various measures addressing the need to report security breaches. Most information and documentation prepared in accordance with the Best Practices Standards is kept confidential under the Domestic Security Preparedness Act. Unlike the proposed federal legislation, the New Jersey standards do not include a strict enforcement clause. Under the state’s Domestic Security Preparedness Act, though, the Attorney General may file suit against chemical companies that knowingly refuse to comply with the standards. The court may then grant equitable relief “if necessary to preserve, protect, or sustain the public safety or well-being.” In essence, facilities can continue to operate dangerously at a lower cost, by just paying fines.

In 2004, Maryland enacted legislation affecting all facilities that store, dispense, use or handle hazardous materials. The Hazardous Material Security Act focuses on security measures based on risk levels,
emphasizes training, and promotes information sharing. Each facility is required to complete a vulnerability assessment. Third-party verification is required to ensure that vulnerabilities have been adequately identified. The Act requires that all the information generated remain confidential. All violations are handled through the Maryland Department of State Police, and violations may result in civil penalties not exceeding $1000 per violation. Facilities that are subjected to more stringent standards by local jurisdiction are not required to meet the standards of the Act.

Also in 2004, the State of New York enacted the Anti-Terrorism Preparedness Act. This act gave the state's Office of Homeland Security authority over New York's critical infrastructure. Within six months of enactment, the Director of the New York Office of Homeland Security was required to promulgate a list of toxic or hazardous substances. After the creation of this list, the director would then identify those facilities housing substances that could harm the public if released. Each identified facility would then be required to conduct a vulnerability assessment and submit it to the director, who would review the assessment and make recommendations on how to increase security.

VI. THE HOMELAND SECURITY APPROPRIATIONS ACT OF 2007

On October 4, 2006, the President signed the Homeland Security Appropriations Act for 2007. The Act included one short section regarding chemical facility security that requires DHS to establish regulations providing risk-based performance standards for those facilities that present a high level of risk. Those facilities are then required to conduct
vulnerability assessments and develop and implement site security plans. The Act only grants DHS three years to regulate parts of the chemical industry covered by the Act. Although the new law provides some stricter requirements for chemical facilities, the law leaves gaps and does not include any of the controversial parts of the Chemical Facility Anti-Terrorism Act of 2006, as reported in either the House or the Senate. The shortened legislation does not provide instruction for DHS, which must now create a “list of covered chemicals, a definition for ‘high level of security risk,’ and the required contents for acceptable security plans,” all of which are agreed on in a comparative analysis of both the House and Senate proposed legislation. The chemical industry previously commented that the language of this section created uncertainty as to whether a facility would be covered.

These missing pieces must be filled by the DHS rulemaking procedures, and interested parties, including those companies within the chemical industry, must be given advance notice and an opportunity to comment on any proposed rules and as required by the Administrative Procedure Act. DHS must promulgate regulations within six months after the Act is passed.

DHS, however, is not known for its promptness. In December of 2003, the President issued Homeland Security Presidential Directive 7, requiring the Department to release the National Infrastructure Protection Plan by 2004. The Plan was released in its final format on June 30, 2006, almost two years later. Given the provisions of the Administrative

225. Id.
226. Id. § 550(b).
231. 5 U.S.C. § 553 (2000); see also Lazarski & Stoll, supra note 228.
Procedure Act requiring an opportunity to comment, drafting these provisions within six months seems unlikely.\textsuperscript{235} The Homeland Security Appropriations Act of 2007 does not address inherently safer technology or preemption of state and local laws.\textsuperscript{236} Many in the industry are concerned that the legislation is over-broad and gives too much discretion to DHS in determining preemption and IST requirements.\textsuperscript{237} Senators Frank R. Lautenberg and Barack Obama noted that one of the main problems with the Appropriations Act is that there is "no clear statement that states retain the authority to adopt stronger chemical security measures than what is adopted at the federal level."\textsuperscript{238} They also observed that "DHS is prohibited from requiring any specific technology or security measure from being adopted."\textsuperscript{239}

Additionally, the law covers fewer facilities than those covered under either the House or the Senate bill. The law exempts those facilities already covered by the Maritime Transportation Security Act,\textsuperscript{240} the Safe


\textsuperscript{238} Byrd's Security Plan, supra note 230.

\textsuperscript{239} Press Release, Sen. Frank R. Lautenberg, supra note 236.

\textsuperscript{240} Department of Homeland Security Appropriations Act of 2007 § 550(a). The MTSA covers facilities 238 chemical facilities located on or near waterways. Under the MTSA these facilities are required to conduct vulnerability assessments and prepare secu-
Drinking Water Act, Federal Water Pollution Control Act, Nuclear Regulatory Commission regulations, or facilities owned or operated by the Department of Energy or the Department of Defense. As previously discussed, the Senate version requires all facilities, including those subject to the MTSA, to submit security plans and make modifications if necessary. The House version exempted only those facilities covered by the MTSA and the Safe Drinking Water Act. Therefore, the new law applies to fewer facilities than either version of the Chemical Facility Anti-Terrorism Act proposed. It has been speculated that the number of facilities that will be covered will be only 300 of the estimated 15,000 facilities.

The Act provides for the imposition of civil penalties, as well as the ability for the Secretary of Homeland Security to order a facility shut down for noncompliance. Before a facility may be shutdown, the Secretary must provide the owner or operator with “a clear explanation of deficiencies in the vulnerability assessment and site security plan,” and the facility must actually fail to comply with the order issued by the Department. Only after continued noncompliance can the Secretary order a facility to cease operation. Advocates for the chemical industry have commented that these provisions may be too broad.

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241. Department of Homeland Security Appropriations Act of 2007 § 550(a). The Safe Drinking Water Act covers approximately 1900 facilities. These facilities service more than 3,300 people each. Facilities covered by the Safe Drinking Water Act are required to conduct vulnerability assessments and prepare emergency response plans. 42 U.S.C. 300i-2(a)-(b) (2000); see also DHS is TAKING STEPS, supra note 66, at 47.


243. Department of Homeland Security Appropriations Act of 2007 § 550(a). The Nuclear Regulatory Commission requires nuclear facilities to utilize security measures such as physical barriers near the reactor area, limited access to critical areas, and additional trained security. DHS is TAKING STEPS, supra note 66, at 46-47.


249. Id. § 550(g).

250. Id.

Representative Loretta Sanchez agreed with the basic concepts that would be established by the Homeland Security Appropriations Act; however, she urged that the appropriations bill should only be considered a "stopgap measure," and additional efforts should be made to pass a "comprehensive chemical plant security bill." Some activists feel that the lack of facilities covered will lead to the passing of more comprehensive legislation, while other activists feel that lawmakers will applaud themselves on their efforts and abandon efforts to pass more comprehensive legislation. The NPRA noted that the act will lead to changing requirements within a few years because DHS is only granted authority for a three year period. The industry argued that based on this sunset provision, industry will be less likely to desire a long-term investment in increasing security at facilities.

VII. A Unified Approach

A unified approach is necessary to ensure the protection of critical infrastructure and the general population. In implementing a unified approach, the government must be willing to address the various excuses as to why chemical facilities have not already implemented protections.

Corporate leaders in the chemical industry are concerned that if they make improvements while other facilities remain idle, the less secured facility will be attacked, leading to a government shutdown of the entire industry. Their fears most likely result from the White House's response to the airline industry following September 11th, 2001. Because of attacks on two major airlines, the entire industry came to a grinding halt. Industry leaders are also concerned that following an attack, legislatures will rush to pass requirements that affect the entire industry and nullify the improvements that have already been made and the money spent. Comprehensive legislation is needed now to circumvent another September 11th type reaction.

Another concern for CEOs is market share, because if they spend money on voluntary initiatives then the cost of their services or products will need to be increased. They will lose market share to those facilities

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255. See id.
256. FLYNN, supra note 1, at 55-56.
257. See id. at 9-10.
258. Id. at 55-56.
259. Id. at 55.
that do not make the additional investment.\textsuperscript{260} Facilities should be required to implement the necessary improvements based on the exposed weaknesses determined by a vulnerability assessment.

Exposure to liability is another factor in a facility's willingness to participate in vulnerability assessments.\textsuperscript{261} These vulnerability assessments are intended to highlight where additional security measures are needed, therefore leaving facilities open to liability problems.\textsuperscript{262} Once chemical facilities have conducted vulnerability assessments, they become aware of the vulnerable areas in their security. If an attack were to occur and these areas had not received increased security, then these facilities become prime targets for lawsuits based on tort liability, because the facility knew of the danger and did not take adequate steps to protect the public from the harm that danger could cause. Unified legislation should contain an immunity clause that would be available to those facilities that take adequate measures to decrease security threats and damage that could result from an intentional terrorist attack. Corporations need an incentive to expose and address their vulnerabilities. Legislatures are also slow to implement vulnerability assessments because "[t]o do so would only add to the political liability risk, should the threat transpire and the public discover that officials knew but failed to act."\textsuperscript{263}

Unified legislation must address the conflicts that have plagued all prior incarnations of proposed legislation, such as preemption and inherently safer technology. This new legislation must include a clause that preempts states from adopting their own legislation in order to have a uniform system of protection. Although the states would be preempted, the legislation should be strong and over-inclusive. Legislation such as the current legislation in New Jersey is recommended, however, with a few comments. The New Jersey legislation does not currently utilize a strong enough enforcement method. Chemical facilities should not only be subjected to substantial fines, but should also face complete shutdown if vulnerable areas are not addressed. A high-risk facility that could be subjected to attacks based on known risks should not be in operation. A compliance division should be formed under the control of the Department of Homeland Security to not only conduct random tests of facilities at least twice a year, but also to hold hearings and hold facilities accountable for violations of the new legislation.

The legislation adopted in New Jersey should also be used as an example of how to deal with implementing inherently safer technology. As contained in the New Jersey legislation, facilities should be required to

\begin{footnotesize}
\begin{enumerate}
\item \textsuperscript{260} Id.
\item \textsuperscript{261} Id. at 58.
\item \textsuperscript{262} Id.
\item \textsuperscript{263} Id.
\end{enumerate}
\end{footnotesize}
make an assessment of the practicality of adopting inherently safer technology.\textsuperscript{264} If the facility determines that IST measures are not practical, then the facility should be required to justify their findings to the compliance board. The government should even consider tax incentives or disincentives, as previously discussed. For some high-risk facilities, the government should appropriate funds to help defray any additional cost and promote the use of inherently safer technology.

A unified approach is necessary for the protection of the critical infrastructure and our nation as a whole. Politics must not stand in the way of a safer America. Instead, the political bubble must burst in order to clear the way for true legislative reform.

\textsuperscript{264} See BEST PRACTICES STANDARDS § 5; see also Ricci & Feldscher, supra note 192; supra Part IV.B (discussing the various IST measures possible).