

**PREVENTING CHEMICAL TERRORISM: BUILDING
A FOUNDATION OF SECURITY AT OUR
NATION'S CHEMICAL FACILITIES**

HEARING

BEFORE THE

SUBCOMMITTEE ON CYBERSECURITY,
INFRASTRUCTURE PROTECTION,
AND SECURITY TECHNOLOGIES,
OF THE
COMMITTEE ON HOMELAND SECURITY
HOUSE OF REPRESENTATIVES
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PREVENTING CHEMICAL TERRORISM: BUILDING A FOUNDATION OF SECURITY AT OUR NATION'S CHEMICAL FACILITIES

Friday, February 11, 2011

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON HOMELAND SECURITY,
SUBCOMMITTEE ON CYBERSECURITY, INFRASTRUCTURE
PROTECTION, AND SECURITY TECHNOLOGIES,
Washington, DC.

The subcommittee met, pursuant to call, at 10:06 a.m., in Room 311, Cannon House Office Building, Hon. Daniel Lungren [Chairman of the subcommittee] presiding.

Present: Representatives Lungren, Walberg, Meehan, Long, Marino, Clarke of New York, Thompson, Richardson, and Richmond.

Also present: Representative Jackson Lee.

Mr. LUNGREN [presiding]. Even though the time has come, we just completed a classified briefing over at the skiff, over at the visitor center. Ms. Clarke was over there, and she is on her way. I would like to wait a few minutes before we start.

The Committee on Homeland Security Subcommittee on Cybersecurity, Infrastructure Protection, and Security Technologies will come to order. The subcommittee is meeting today to receive testimony from two panels. The first panel will include testimony from the Honorable Rand Beers, Under Secretary of the National Protection and Programs Directorate at the Department of Homeland Security.

Panel two will consist of testimony from Mr. Timothy Scott, Chief Security Office of the Dow Chemical Company, Mr. Sam Mannan, a Regents Professor and Director of the Mary Kay O'Connor Process Safety Center, and Mr. George Hawkins, General Manager, District of Columbia Water and Sewer Authority.

First, I would like to welcome our witnesses to our first subcommittee hearing under the new Republican majority. I would like to also thank the Ranking Member of the full committee Mr. Thompson and the Ranking Member of the subcommittee Ms. Clarke for the bipartisan working relationship we enjoyed in the 111th Congress in this subcommittee. We will continue to endeavor that we work in the same bipartisan spirit in the 112th Congress.

I am very happy to welcome my new Republican colleagues to our subcommittee, Mr. Meehan and Mr. Marino. We hopefully will be joined later by Mr. Walberg and Mr. Long. We have a veteran of our subcommittee, Mr. McCaul as well.

Our subcommittee will be examining many critical issues in this Congress from the physical and cyber threats to our critical infrastructure to radiologic and nuclear and biological threats to our cities. We intend to be aggressive in our oversight of the Department and its many security programs, especially those that provide more substantial security improvement for the amount of taxpayer dollars spent.

What I mean by that is we are suffering from difficult budget times. No department and no office, no part of the Federal Government is going to be immune from that. We are going to have to look with an even more careful eye at the effectiveness of various programs. So it is going to be a matter of setting priorities. We hope that we will work with the Department to be able to set the correct ones.

One of those critical issues within our jurisdiction is chemical security. In many ways, chemicals underpin our way of life in our 21st Century economy. They employ over 800,000 workers. They produce 19 percent of the world's chemical products.

Because of this critical economic role of the chemical industry and the danger of these chemicals for facility workers and surrounding populations due to the terrorist threat, securing chemical facilities is a top priority for our committee.

My interest in this issue dates back to the time when I was Chairman of the predecessor subcommittee and introduced the Chemical Security Anti-Terrorism Act of 2006. At that time, the chemical industry was operating under a voluntary security regime, which left many security gaps because of the nonparticipating facilities.

So in order to address those security gaps, I introduced my bill, which would have established a risk-based performance approach targeting high-risk chemical facilities. While the bill did not finally pass the entire House, it did provide the model used by the administration and House Appropriations to craft a comprised National risk-based security plan for all high-risk chemical facilities.

That was Section 550 of the Homeland Security Appropriations Act of 2007. That was done in the closing weeks of the 109th Congress.

The authority to regulate chemical facility security is historic and critically important. Dangerous chemicals listed in Appendix A as chemicals of interest, or COI, when stored or processed above threshold quantities pose serious threats to facility workers and neighboring populations. They are also attractive terrorist targets.

So we need to bolster security of chemical facilities and the best way to do that is to allow the CFATS, that is the Chemical Facility Anti-Terrorism program, to be fully implemented before any significant program changes are enacted. In our judgment the best way to strengthen the foundation of security that CFATS is building at our Nation's chemical facilities is to provide a long-term extension of the CFATS authority.

This will provide our chemical facility partners, and we have to be partners in this regard if we are going to be successful, those who are spending collectively millions of dollars implementing new security measures. We have to provide them with the assurance

that the rules and requirements won't change from year to year as the CFATS program is being implemented.

That is not to say we won't make changes as we find they are necessary, but rather we will not look at a complete overhaul of the regime. This will also provide the Department with a certainty that the Congress believes chemical security will be a priority for years to come as they continue to implement, evolve, and invest in the CFATS program.

Another controversial issue that has emerged during chemical security debate centers on the understanding of inherently safe technology, sometimes called IST. I just want to make it clear, I don't support mandating a single solution security approach. IST, from the testimony we have had in the past, isn't something you can buy off the shelf or simply plug in.

It is a concept; not a very well-understood concept at that. It is a very complex process or series of procedures that should not be mandated at least according to the testimony of the three non-governmental witnesses today. There is no—at least I have not been able to find a single definition of what IST is because it differs so greatly from chemical to chemical and from facility to facility.

I do support, and I know the administration generally supports, risk-based security solutions including layered approaches as part of that that reduce identified vulnerabilities and would oppose mandating specific security measures.

Requiring a specific type of security measure in many ways goes against the very principles of risk-informed performance-based approaches. CFATS is building a strong chemical security foundation by enabling multiple risk-based solutions and flexibility for facilities to select the security approaches that best fit their unique security needs while still meeting the risk-based performance standards established by DHS.

The original bipartisan Congressional goal of these regulations was to strike the proper balance between improving security at our high-risk chemical facilities while preserving the economic vitality of this critical sector.

While CFATS we would all agree still has a long way to go, I believe that the CFATS authority enabling the regulatory structure and use today is providing our Nation the best opportunity to meet that Congressional goal.

So in pursuit of that, I would like to thank our witnesses for appearing today. I would look forward to hearing your testimony. I would ask unanimous consent to insert into the record the testimony from Lawrence Sloan, President and CEO of the Society of Chemical Manufacturers and Affiliates and testimony from the National Petrochemical and Refiners Association. Without objection, that will occur.

[The information follows:]

LETTER SUBMITTED FOR THE RECORD BY CHAIRMAN DANIEL E. LUNGREN

FEBRUARY 11, 2011.

The Honorable DAN LUNGREN,
Chairman, Subcommittee on Cybersecurity, Infrastructure Protection, and Security Technologies, H2-176, Ford House Office Building, Washington, DC 20515.

The Honorable YVETTE CLARKE,
Ranking Member, Subcommittee on Cybersecurity, Infrastructure Protection, and Security Technologies, H2-117, Ford House Office Building, Washington, DC 20515.

Re: Subcommittee Hearing on “Preventing Chemical Terrorism: Building A Foundation of Security At Our Nation’s Chemical Facilities”

DEAR CHAIRMAN LUNGREN AND RANKING MEMBER THOMPSON: On behalf of the members of the Society of Chemical Manufacturers and Affiliates (SOCMA), I would like to share with you our perspective on the subject of your hearing this week, the Chemical Facility Anti-Terrorism Standards (CFATS).

Working in a bipartisan manner, Congress enacted a strong chemical security regulatory program in late 2006. It was the sustained effort over a 2-year period by the House Homeland Security Committee and the Senate Homeland Security and Government Affairs Committee that drove that legislation. Thanks to this leadership, the U.S. Department of Homeland Security (DHS) was finally able—6 years after 9/11—to initiate a regulatory program to assure the security of the Nation’s vital chemical sector. DHS and regulated facilities are still deep in the middle of implementing these Chemical Facility Anti-Terrorism Standards (CFATS) in a focused, cooperative manner. On behalf of the most innovative component of the chemical sector, SOCMA appreciates the interest that the subcommittee is showing in the CFATS program by holding this hearing so early in the 112th Congress.

SOCMA strongly supports DHS’s current CFATS program. This demanding program is now requiring over almost 5,000 chemical facilities Nation-wide to develop and deploy meaningful security enhancements. Equally important, it has led over 2,000 facilities to voluntarily take steps reduce their risk profile sufficiently that they no longer warrant regulation under the program. This performance-based regulation protects facilities against attack without impairing the industry’s ability to remain innovative and maintains some of the Nation’s highest-paid jobs in the manufacturing sector.

While CFATS has had bumps in the road like any other regulatory program, it is working well and making the Nation safer for all Americans. Congress can best assure the program’s success and continued forward momentum by passing a 3- to 5-year extension of the current authorization without making any other changes.

I. SOCMA AND THE CURRENT STATE OF CHEMICAL FACILITY SECURITY

A. SOCMA

SOCMA is the leading trade association representing the batch, custom, and specialty chemical industry. SOCMA’s nearly 300 member companies employ more than 100,000 workers across the country and produce some 50,000 products—valued at \$60 billion annually—that make our standard of living possible. From pharmaceuticals to cosmetics, soaps to plastics, and all manner of industrial and construction products, SOCMA members make materials that save lives, make our food supply safe and abundant, and enable the manufacture of literally thousands of other products. Over 80% of SOCMA’s active members are small businesses.

ChemStewards® is SOCMA’s flagship environmental, health, safety, and security (EHS&S) continuous performance improvement program. It was created to meet the unique needs of the batch, custom, and specialty chemical industry, and reflects the industry’s commitment to reducing the environmental footprint left by members’ facilities. As a mandatory requirement for SOCMA members engaged in the manufacturing or handling of synthetic and organic chemicals, ChemStewards® is helping participants reach for superior EHS&S performance.

B. SOCMA’s Security Achievements To Date

Maintaining the security of our facilities has always been a priority for SOCMA members, and was so before September 11. After the tragic events of 9/11, SOCMA members did not wait for new Government regulations before researching, investing in, and implementing additional and far-reaching facility security measures to address these new threats. Under the ChemStewards® initiative, SOCMA members were required to conduct security vulnerability assessments (SVAs) and to implement security measures.

SOCMA designed an SVA methodology specifically for batch, custom, and specialty chemical facilities that was approved by the Center for Chemical Process Safety (CCPS) as meeting its requirements for an effective methodology. SOCMA members have spent billions of dollars and have devoted countless man-hours to secure their facilities and operations. These investments will naturally continue for the foreseeable future.

Many (though by no means all) SOCMA member company facilities are encompassed by the CFATS program. These facilities have completed their Site Security Plans (SSPs) and are being (or will soon be) inspected by DHS to verify the adequacy of those plans and their conformance to them. SOCMA is actively engaged with DHS to accelerate and continuously improve the implementation of the CFATS program, collaborating on new approaches to personnel surety and Alternative Security Programs.

Many of our member companies' other facilities comply with the Coast Guard's facility security requirements under the Maritime Transportation Security Act (MTSA).

Looking well beyond regulatory requirements, our members have also partnered with DHS on many important voluntary security initiatives and programs through the years, including the Risk Assessment Methodology for Critical Asset Protection (RAMCAP), the Buffer Zone Protection Plans, and the Homeland Security Information Network (HSIN). SOCMA is a founding member of the Chemical Sector Coordinating Council, which has served as a model for how critical infrastructure sectors should work together and with DHS.

SOCMA also works jointly with DHS in organizing a free annual Chemical Sector Security Summit and Expo that brings together Government representatives, chemical security experts, and industry professionals to share knowledge and best practices.

Through the Sector Council and other avenues, we and our members have developed close and open working relationships with DHS and other Federal agencies, and with State and local governments, to exchange information and coordinate roles in maintaining the security of our critical chemical facility infrastructure.

C. Preserving the Progress Under CFATS

While we will leave a detailed progress report on the CFATS program to DHS, SOCMA wants to emphasize that we regard the program thus far as a success. Due to the outstanding cooperation of the chemical sector, there has been 100% compliance with the requirements to submit Top-Screens, SVAs, and SSPs—DHS has not yet had to institute a single administrative penalty action to enforce compliance. And as noted earlier, over 2,000 facilities—over a quarter of the preliminarily tiered facilities—have changed processes or inventories in ways that have enabled them to screen out of the program. Thus, as predicted, CFATS is driving facilities to reduce inherent hazards, where in their expert judgment doing so is in fact safer, does not transfer risk to some other point in the supply chain, and makes economic sense.

To fully gauge the effectiveness of the CFATS program, Congress should allow it to be fully implemented—for all tiered facilities to fully come into compliance. Completing the program's implementation from start to finish would provide DHS and chemical companies the ability to assess the overall efficacy of CFATS, identify its areas of strength and weakness, and subsequently make (or recommend to Congress) any necessary improvements.

Conversely, the need for annual reauthorization of the program has created uncertainty for the chemical industry, which is making large financial investments in tools and technology in order to comply with the current CFATS standards. Without the assurance of a long-term authorization of chemical security regulations, companies run a risk of investing in costly activities today that might not satisfy regulatory standards tomorrow. With statutory authority for CFATS set to expire March 4 of this year, Congress must act now to ensure continuation of the current standards and reauthorize the underlying statute for another 3 to 5 years.

II. LESSONS FROM THE 111TH CONGRESS

In 2009, Senate Homeland Security and Government Affairs Committee Ranking Member Collins introduced S. 2996, the "Continuing Chemical Facilities Antiterrorism Security Act of 2010," together with Senators Pryor, Voinovich, and Landrieu. This bill would have reauthorized the CFATS program until 2015, thus allowing DHS and facilities to remain focused on successfully implementing that program as quickly as possible. SOCMA strongly supported Senator Collins' legislation.

The House took a very different approach than the Senate, passing a largely partisan bill (H.R. 2868) by a vote of 230–193 with no support from then-minority Republican members—not a single vote in favor. That bill included provisions that are fundamentally unwise and potentially counterproductive to our shared goal of preventing terrorist incidents at chemical facilities.

H.R. 2868 was approved despite testimony from numerous witnesses who shared strong concerns regarding these provisions, particularly a requirement that facilities implement so-called “inherently safer technology” (IST) in their processes. This mandate would have shifted DHS’s focus from securing our industry against terrorism to conducting engineering and chemistry assessments, while potentially phasing out legitimate products that improve our daily lives and enhance our safety. The House-approved bill would have jeopardized the progress that industry and DHS have made together thus far under CFATS.

The Senate Homeland Security and Governmental Affairs Committee shared our industry’s concern. During a markup of H.R. 2868, the bill’s text was substituted with Ranking Member Susan Collins’ chemical security legislation, S. 2996, which did not include the controversial IST provision. The committee approved the substituted language by unanimous consent, but the full Senate did not have the opportunity to vote on it by the end of the last Congress. In the end, Congress extended authorization for the current CFATS program via the continuing resolutions that have funded the Government for this fiscal year.

III. MANDATORY IST IS AN INHERENTLY RISKY PROPOSITION

SOCMA vehemently believes that this Congress should enact legislation like that reported last year in the Senate, thus extending the CFATS program for 3 to 5 years. Congress should not devote any further time to discussing the discredited concept of mandatory IST. The balance of this statement explains in significant detail why mandatory IST would be so unwise.

An IST mandate such as that contained in last year’s House bill would have amended Section 2111 of the CFATS statute to require Tier 1 and 2 facilities to implement “methods to reduce the consequences of a terrorist attack”—i.e., IST—whenever DHS made specified findings about risk reduction and technical and economic feasibility. However common-sense such a mandate might appear on the surface, it is fundamentally a bad idea in the security context. Inherent safety is a superficially simple but truthfully very complex concept, and one that is inherently unsuited to regulation. Any IST mandate is bound to create situations that will actually increase or transfer overall risks. It would also wreak economic havoc on regulated facilities, notwithstanding the findings DHS would have to make. Makers of active pharmaceutical ingredients, common fuels, and other Federally-regulated substances would be most at risk of such economic damage.

A. WHAT INHERENT SAFETY REALLY IS AND WHY MANDATING IT IS NOT INHERENTLY BETTER

First and foremost, it is important to clarify a common misunderstanding about inherent safety. Quite simply, IST is a process-related engineering concept, not a security one. It is premised on the belief that, if a particular chemical process hazard can be reduced, the overall risk associated with that process will also be reduced. In its simplicity, it is an elegant concept, but the reality is almost never that simple. A reduction in hazard will reduce overall risk if, and only if, that hazard is not displaced to another time or location, or result in the creation of some new hazard.

Inherent safety is only successful if the sum total of all risks associated with a process life cycle is reduced. This is rarely a simple calculation, and to some extent it is an irreducibly subjective one (for example, a substitute chemical that may reduce explosion risks may also pose chronic health risks).

The calculation becomes even more difficult when it is being done not solely for reasons of process safety (where accident probabilities can be estimated with some degree of confidence) but also for reasons of security (where the probability of terrorist attack is highly uncertain but certainly low). There is no agreed-upon methodology to measure whether one process is inherently safer than another process—something DHS’s Science & Technology Directorate is attempting to address—in a multi-million dollar, multi-year process that may or may not succeed. This is why the world’s foremost experts in IST and chemical engineering consistently recommend against regulating inherent safety for security purposes.

Here are several examples of how difficult it can be to reduce overall risk when attempting to reduce hazard:

Eliminating the use of a hazardous catalyst

A chemical company wants to eliminate the use of a hazardous catalyst, which is typically used in small amounts. The catalyst serves as a booster to start a chemical reaction to make a building block for a drug used to treat cancer. Catalysts tend to be hazardous by nature, which reduces the number of available alternatives. The only way the company can initiate the reaction without using a hazardous catalyst is to increase the temperature and pressure of the system. The overall risk of the new system, aggravated by increasing the temperature and pressure, may actually be greater than the risk associated with use of the catalyst, because catalysts are typically used in small amounts and the likelihood of an accident is remote.

Reducing the amount of a chemical stored on-site

A manufacturing plant is considering a reduction in the volume of a particular chemical stored on-site. The chemical is used to manufacture a critical nylon additive, which is sold to another company and used to make seat belts stronger. Because it is a critical component for nylon strength and seatbelt production cannot be disrupted, the production schedule cannot change. If the amount stored on-site is reduced, the only way to maintain the production schedule is to increase the number of shipments to the site. This leads to more deliveries (an increase in transportation risk) and more transfers of chemical from one container to another (an increase in transfer risk). Economic risks are also increased since there is now a greater chance that production could be disrupted by a late shipment.

How location and individual circumstance affect risk perception

It is difficult to describe a scenario in which moving a hazard does not result in a simple transfer of risk from one location to another. For example, location can highlight different risk perspectives, such as the use of chlorine, a hazardous gas that comes in various types of containers. A commonly used example compares the inherent safety of a rail car, which typically holds up to 90 tons, versus storage in one-ton cylinders. Residents near the facility would probably view the one-ton cylinder as inherently safer than a rail car.

On the other hand, workers who have to connect and disconnect the cylinders 90 times, instead of just once for the rail car, would probably consider the rail car inherently safer.

B. IST's Impact on Pharmaceuticals and Microelectronics

One of SOCMA's greatest concerns with IST is the real possibility that it will negatively restrict the production of active pharmaceutical ingredients (APIs), many of the key raw materials of which are included on DHS's Appendix A of covered chemicals. APIs are used in prescription and generic drugs, life-saving vaccines, and over-the-counter medicines. They are thoroughly regulated by the FDA and must meet demanding quality and purity requirements. Substituting chemicals or processes used for the production of APIs would likely violate the conditions of their FDA approvals. Requiring IST could delay clinical trials while new replacement chemicals are identified or invented, and would force API manufacturers and their customer drug manufacturers to reapply for FDA approval of their products because of the significant change in the manufacturing. The lengthy 1- to 4-year approval timeline for a new or equivalent replacement chemical would be a high price to pay for American consumers, many of whom rely on ready access to pharmaceuticals. To meet continuing consumer demand, API production would likely shift to foreign countries, where the FDA is less able to monitor conformance to quality standards.

Many SOCMA members' products are also vital to the manufacture of microelectronics. Below, we offer several examples, provided by SOCMA members, of how IST could cripple the pharmaceutical and microelectronics industries.

Lifesaving Antibiotics: Company A

Company A is a minority-owned small business regulated by DHS under CFATS. It produces an active pharmaceutical ingredient critical to specific antibiotics used in the treatment of a life-threatening bacterial infection. For this purpose, the company is also regulated by the FDA. Since the product's specifications are likely not to be attainable via any chemical substitution or altered process, if a "safer" manufacturing process alternative was mandated, the company would likely be forced to discontinue production, lay off workers and increase our Nation's vulnerability to bacteriological threats. The impact of a mandatory alternative would thus be swift and direct.

Common Pain Reliever: Company B

Company B manufactures the active pharmaceutical ingredient Ibuprofen. Ibuprofen is a non-steroidal anti-inflammatory drug (NSAID) used to treat pain and

relieves symptoms of arthritis such as inflammation, swelling, stiffness, and joint pain. It is one of the world's most successful and widely-used pain relievers, and is listed on the World Health Organization's model list of medicines.¹ Changing the raw materials, and consequently the process, used to manufacture it presents a risk to public health and a substantial cost for re-qualification from a technical, regulatory, and potentially clinical perspective.

Company B's 32-year old process to manufacture Ibuprofen bulk active is well characterized and controlled, and consistently makes a safe and efficacious product. The process-characteristic impurity profile, specified under the prevailing USP and European Pharmacopoeia compendia, is proven to have no impact to public health by its use by millions of people worldwide. The costs derived from IST, if it impaired production quantities or product quality, would ultimately be felt by consumers.

Microelectronics: Company C

Company C manufactures two Appendix A chemicals of interest targeted by industry critics. First, Company C uses small amounts of hydrochloric acid (HCl) in a very high purity, aqueous form (37%) to manufacture a product that represents almost half of the company's revenue worldwide (~\$30 million/yr). The product is used in the microelectronics industry to manufacture integrated circuits and LCD displays. If HCl were not available, Company C would be unable to make its largest product, resulting in at least a 50% reduction in workforce, which would equate to losing 60 jobs. If the company chose to continue the business, alternatives would have to be developed and implemented to continue manufacture of those products, which could easily require billions of dollars of research, development, and implementation, resources that small companies like Company C, which include many of SOCMA's members, do not have. Additionally, Company C uses HCl to protect the environment: Its use brings the pH of the company's wastewater into the range dictated by its wastewater permit.

The company also uses small volume products using aqueous (49%) hydrofluoric acid (HF) that are sold into the microelectronics industry. Customers of Company C that need HF for their products require Company C to undergo specific certification standards as a product supplier. If Company C was forced to use a substitute, it would immediately be out of compliance with its customers' product standards, which (obviously) would negatively impact Company C's business. In some cases, the HF is being used as a safer alternative to replace hydroxylamine (HA), the use of which has been reduced due to the multiple explosions at HA manufacturing facilities. In some cases, anhydrous HF may be necessary as water may be incompatible with the manufacturing process. If manufacturers of microelectronics were denied a supply of HF, there would be a negative consequence to the domestic manufacturing of integrated circuits and LCD displays.

The Energy & Commerce Committee's 2009 report on H.R. 2868 attempted to assuage concerns like those just discussed, opining that, where mandated IST "could result in a product that is less effective or less available to those who need it," or "forced the company to seek new regulatory approvals (such as from the Food and Drug Administration) that could take years to obtain, that could mean that the covered facility could not continue its business" and "the Department must consider such unintended consequences."² Respectfully, SOCMA's concerns cannot be alleviated by such non-binding language. Not only would DHS not be required to follow it, but DHS would also be free to conclude that the amount of delay required to get an FDA approval, or the degree to which the effectiveness of a product would be diminished, would not mean that the facility could not continue its business. After all, a sufficiently large and flexible facility might well be able to stay in business even though it has lost an important product or market. But this subcommittee should not be encouraging the destruction of products and markets for questionable benefits in this economy (or any other).

C. IST's Impact on Jobs

It goes without saying that process or product changes will have a negative impact on the jobs at facilities forced to make these changes. There are multiple pressures on SOCMA's members, not just whether there is a market that can afford to purchase what they produce or whether they can compete with the lower wages and resource costs in foreign countries. Chemical manufacturers are required to comply with many State, local, and Federal regulations. Regulatory requirements cost money, money that is used to hire workers, train them, to innovate, develop new products, and to provide health care to them. The chemical industry is one of the

¹ World Health Organization, WHO Model List of Essential Medicines (March 2005).

² House Committee on Energy and Commerce, Report No. 111-205, pt. 2, at 48 (Oct. 23, 2009).

most regulated industries in the United States. Spending money to comply with new regulations necessarily causes companies to assess how they will pay for it. There isn't much available capital these days for manufacturers to take on new regulations aimed at their very livelihood, especially small manufacturers.

Because they lack the economies of scale and resources of larger companies, small businesses will be the most vulnerable to the IST provisions of the House bill. The unintended consequences of this provision will not only affect chemical manufacturers, but also resonate throughout their value chain. Since the economic downturn, small businesses have been hit hard by the economic recession. Meanwhile, unemployment remains high at 9 percent despite recent job gains in the last 2 months. States in which chemical manufacturing is concentrated represent some of the hardest hit areas. For example, California's unemployment rate at the end of 2010 was 12.5%. Michigan—where SOCMA has a number of manufacturing members, most of which are small companies but which pay competitive wages—is not far behind at 11.7%. Missouri follows at 9.5%, New Jersey at 9.2%, and Texas at 8.3%.³ SOCMA members from most of these States wrote to their Representatives last Congress asking you to support the current CFATS program and oppose mandatory IST requirements.

D. Experts Agree IST Should Not Be Mandated

As these examples demonstrate, a “simple” reduction in hazard may not necessarily result in a reduction of overall risk, and a poorly constructed or incomplete analysis could result in a “safer” alternative producing more harm than good. That is why Government agencies and experts who really understand inherent safety have consistently opposed giving Government the power to mandate it. This includes:

- Neal Langerman, representing the American Chemical Society—the minority's own technical witness at the Homeland Security Committee hearing in June of 2009.⁴
- Sam Mannan, Director of the Mary Kay O'Connor Process Safety Center at Texas A&M University, in testimony before the Homeland Security Committee on December 12, 2007.⁵
- Dennis Hendershot, testifying on behalf of the Center for Chemical Process Safety before the Senate Environment & Public Works Committee on June 21, 2006.⁶

It is likewise instructive that the State of New Jersey, whose chemical facility security program is regularly contrasted with the CFATS program, only requires consideration of IST—it does not require facilities to implement it. Congress should not require DHS to do what all these experts have concluded is unwise, and what it is unwilling to do directly when the public is picking up the tab.

³U.S. Bureau of Labor Statistics, February 2011.

⁴See <http://chsdemocrats.house.gov/SiteDocuments/20090616103505-95857.pdf>, p.7: In conclusion, the existing regulatory structure, under the U.S. EPA Risk Management program and the U.S. OSHA Process Safety Management standard, provide strong incentives to examine and implement IST. These programs work in natural conjunction with Homeland Security's mandate to enhance infrastructure security. The provisions of the Chemical Facility Antiterrorism Act of 2006 provide a sufficient legislative framework for this purpose. The most effective steps to further infrastructure protections will likely include incentives, rather than new regulations.

⁵See <http://chsdemocrats.house.gov/SiteDocuments/20071212094415-39931.doc>, Dr. Mannan's testimony, pp. 6–7: [I]n developing inherently safer technologies, there are significant technical challenges that require research and development efforts. These challenges make regulation of inherent safety very difficult . . . Instead of prescriptive requirements for inherently safer technology and approaches, facilities should be allowed the flexibility of achieving a manageable level of risk using a combination of safety and security options . . . Over the past 10–15 years, and more so after 9/11, consideration of Inherently Safer Technology (IST) options and approaches has effectively become part of industry standards, with the experts and persons with know-how assessing and implementing inherently safer options, without prescriptive regulations that carry risks (both as trumping other tools or potentially shifting risk). A better approach for applying IST in security is by allowing the companies to assess IST as part of their overall safety, security, and environmental operations and therefore, cannot be prescriptive.

⁶See http://epw.senate.gov/109th/Hendershot_Testimony.pdf, at 4–8, esp. 5–6: There are tens of thousands of chemical products manufactured, most of them by unique and specialized processes. The real experts on these technologies, and on the hazards associated with the technology, are the people who invent the processes and run the plants. In many cases they have spent entire careers understanding the chemistry, hazards, and processes. They are in the best position to understand the best choices, rather than a regulator or bureaucrat with, at best, a passing knowledge of the technology.

E. Conditioning the IST Mandate Does Not Solve the Problem

SOCMA is aware that last year’s House bill would only have allowed DHS to impose mandatory on Tier 1 and 2 facilities when it could make various findings about feasibility, cost impacts and risk transfers. But that approach does not address our fundamental objection to the concept, which is that it would take IST decisions away from the process safety experts who know their own processes the best and would allow their judgments to be second-guessed by busy Government officials sitting miles away reviewing documents. While these officials may be sincerely trying to do their best, we simply do not trust that their judgments will be better than ours. We also fear the prospect of liability if a “safer” process or chemical that one of our member companies is compelled to use ends up causing an accident or some other harm. Will the Federal Government indemnify facilities in the cases where it overrules their judgments regarding inherent safety? And even if a facility ultimately succeeds in persuading DHS to allow it to retain its proposed approach, that process will inevitably have costs in time and resources.

Preceding all these concerns, moreover, is an even more basic one: No one knows how to compare the “inherent safety” of two processes. Here is what the experts have told Congress:

- I do not believe that the science currently exists to quantify inherent safety . . . The first challenge is simply to measure the degree of inherent safety in a way that allows comparisons of alternative designs . . . ⁷
- Inherently safer design is not a specific technology or set of tools and activities at this point in its development . . . Current books and other literature on inherently safer design . . . describe a design philosophy and give examples of implementation, but do not describe a methodology.⁸
- While scientists and engineers have made great strides in understanding the impacts of industrial processes and products over the past several decades, there is still no guaranteed formula for developing inherently safer production processes.⁹

The experts at the National Research Council concluded recently: “Inherently safer chemistry . . . offers the potential for improved safety at chemical facilities. While applications show promise and have found use within the chemical industry, these applications at present are still quite limited in scope.”¹⁰

While it may be feasible to develop a technical consensus methodology for measuring and comparing inherent safety, none exists at present. Before Congress and the administration could even consider mandating IST implementation, they would need to know that methodologies exist to compare various alternatives from the standpoint of inherent safety. As discussed above, DHS has launched a major effort to develop a methodology for comparing the inherent safety of two or more processes. SOCMA members and staff have been participating in this effort and cautiously support it. It is too early to tell, however, how successful it will be. Congress should avoid legislating in this area while that process is still on-going.

IV. CONCLUSION

The many small and large chemical manufacturers that employ thousands of employees in key manufacturing States such as Michigan, Missouri, Texas, and New Jersey stand to lose greatly should an IST provision be included in any legislation that advances this Congress. It is a wonder why IST proponents still support such a provision when there is so much uncertainty about the concept and how DHS could apply it—and during a historic economic recession in which our Nation’s unemployment rate still wavers around 9%. Mandating inherently safer technology as a security measure will inevitably create negative unintended consequences, and Congress should not require DHS to do so. Rather, SOCMA supports chemical site security standards that are risk-based, realistic, and not subject to change in any given year.

As the House takes up the issue of chemical security anew in the 112th Congress, SOCMA asks that you act with the same bipartisanship that the House and Senate demonstrated in 2006 in the process that led to the creation of CFATS, and support legislation that would extend authorization of existing chemical facility security standards for 3 or more years.

⁷ Testimony of Sam Mannan, *supra* note 5, at 6.

⁸ Testimony of Dennis Hendershot, *supra* note 6, at 1–2.

⁹ Testimony of Neal Langerman, *supra* note 4, at 6–7.

¹⁰ National Research Council, Board on Chemical Sciences & Technology, Terrorism and the Chemical Infrastructure: Protecting People and Reducing Vulnerabilities (2006), at 106.

I appreciate this opportunity to submit for the record the Association's views on these important issues.

Sincerely,

LAWRENCE SLOAN,
President and CEO, SOCMA.

STATEMENT OF THE NATIONAL PETROCHEMICAL & REFINERS ASSOCIATION (NPR A)

FEBRUARY 11, 2011

NPR A, the National Petrochemical & Refiners Association, appreciates the opportunity to submit this statement on "Preventing Chemical Terrorism: Building a Foundation of Security at Our Nation's Chemical Facilities." America's refining and petrochemical companies play a pivotal role in ensuring and maintaining the security of America's energy and petrochemical infrastructure. Nothing is more important to our member companies than the safety and security of our facilities. We have worked extensively with the Department of Homeland Security—and have invested millions of dollars—toward strengthening facility security. NPR A strongly supports the current Chemical Facility Anti-Terrorism Standards (CFATS) and encourages Congress to make the current program permanent, which will allow both DHS and industry the time needed to fully implement the CFATS program.

NPR A is a trade association representing high-tech American manufacturers of virtually the entire U.S. supply of gasoline, diesel, jet fuel, other fuels and home heating oil, as well as the petrochemicals used as building blocks for thousands of products vital to your daily life. NPR A members make modern life possible, meet the needs of our Nation and local communities, strengthen economic and National security, and provide jobs directly and indirectly for more than 2 million Americans.

Maintaining a high level of security has always been, and remains, a top priority at America's refineries and petrochemical manufacturing plants. Operators of these facilities are fully engaged in the maintenance and enhancement of facility security. Many of our member companies have long operated globally, often in unstable regions overseas, where security is an integral part of providing for the world's energy and petrochemical needs.

In the aftermath of the September 11 attacks, our member companies realized that additional and unconventional threats must be considered in order to protect our Nation critical energy manufacturing and distribution infrastructure. In full understanding of the potential and significance of these threats, we did not wait for the adoption of new Government mandates before implementing additional, far-reaching facility security measures. Instead, we immediately initiated measures to strengthen and enhance security, including: 100 percent ID verification and bag screening; comprehensive vehicle inspections; limitations on visitor access and tours; and, a reduction in plant access points to minimize risk. Furthermore, we have been active participants in the Chemical Sector Council and the Oil and Natural Gas Sector Council, as well as many other DHS-sponsored efforts.

Since the creation of the current CFATS regulations, our member companies have submitted their Top Screens, Site Vulnerability Assessments (SVAs) and Site Security Plans (SSPs) in accordance with DHS time tables and are awaiting approval of those submissions. Many NPR A members' manufacturing plants have been subject to Pre-Authorization Inspections (PAI) and await final tiering status. Throughout this process, we have developed productive and collaborative working relationships with DHS and other key Federal agencies, and have strengthened relationships with State and local law enforcement offices. These relationships ensure that all parties obtain and exchange information critical to the maintenance of infrastructure security, enabling all to respond rapidly to terrorist threats.

We firmly believe that the current CFATS program has been successful, but needs to be made permanent without the addition of any extraneous provisions. CFATS must be allowed to be fully implemented by DHS before any amendments to the program are considered. As a result of the CFATS program, there has been a surge in security awareness across all industries and among industry employees. The operators and employees of our manufacturing plants and our distribution facilities are now even more keenly aware of vulnerabilities at each site, potential off-site consequences and methods to reduce risks at these sites. NPR A members also report that the current regulations have helped with better chemical inventory management. In fact, many of our member companies regularly conduct security awareness training and complete Site Vulnerability Assessments to enhance security at unregulated sites that do not fall under the CFATS program. We have an excellent working relationship with DHS and have repeatedly volunteered to help the Depart-

ment through activities ranging from site tours to joint training activities and serving as technical experts. In order to fully gauge the success of the current version of CFATS, however, Congress should allow for the complete implementation of the current program. Only then should Congress and DHS determine whether or not significant changes to this highly innovative program are required.

Specific focus on the existing CFATS program and related security activities indicates the following:

1. America's refining and petrochemical manufacturing plants will continue to maintain and improve security operations to protect the vital network that provides a reliable supply of fuels and other petroleum and petrochemical products that are required to keep our Nation strong and our economy growing.
2. Essential working relationships and information networks have been established between Government security agencies and our members' manufacturing facilities to exchange "real-time" intelligence data on security issues. These relationships allow for rapid response to terrorist threats. We believe that unwarranted and potentially counter-productive revisions to this successful program could significantly alter these relationships, thus placing unnecessary obstacles in the way of the Nation's over-arching goals regarding homeland security.
3. We have partnered with the Department of Homeland Security on many important security initiatives and programs, including the Risk Assessment Methodology for Critical Asset Protection (RAMCAP), the Homeland Security Information Network (HSIN), Buffer Zone Protection Plans, SVAs, Site Security Plans (SSPs) and Industry Sector Councils.

When reviewing the current program, NPRA and our member companies strongly caution against the inclusion of any unrelated amendments, such as inherently safer technology (IST) or increased information-sharing provisions. The following issues should be considered before any potential update of the current CFATS program.

INHERENTLY SAFER TECHNOLOGY (IST)

IST continues to be a misinterpreted concept to those outside the field of engineering. Proponents of IST as part of security legislation believe that the only way to ensure security at chemical facilities is by reducing the amount of hazardous substances used in chemical manufacturing and processing by way of "simple" chemical substitution. Application of IST, however, is bound by the laws of physics and nature; a simple reduction or switch in the use of hazardous chemicals is rarely possible within the context of a specific reaction or process. NPRA members' facilities are custom-built according to specifications that accommodate very specific chemical processes, and every facility in the country is different. It is usually not possible to simply "substitute" one chemical for another in the context of refining and petrochemical facilities. Furthermore, in terms of the reduction of certain substances, there is a serious risk of simply transferring risk to other points along the chemical supply chain—thereby not decreasing risk, but simply transferring it to other areas that may not be as secure as CFATS-covered chemical facilities.

IST is a conceptual and often complex framework that covers procedures, equipment, protection and, when feasible, the use of less hazardous chemicals. IST is not just a safety program; it is a process safety program that involves understanding chemical engineering and the supply chain for petroleum-based, natural gas liquids-based and other organic chemicals derived from these basic feedstocks. Its premise is that if a particular hazard can be reduced, the overall risk associated with a chemical process will also be reduced. In its simplicity, it is an intuitive concept; however, reality is not always that simple.

A reduction in hazard will reduce overall risk if, and only if, that hazard is not displaced to another time or location, or does not amplify another hazard. If the hazard is displaced, then the risk will simply be transferred, not reduced. We strongly oppose the inclusion of any IST provisions in chemical security legislation. IST and chemical engineering decisions should be left to individual sites and not mandated by the Federal Government.

Another factor that makes the implementation of an IST regulatory program unrealistic is that there are no methods with which to measure whether one process is inherently safer than another. DHS would not be able to measure the effectiveness of its regulations, which runs counter to the Government Performance and Results Act.

SHARING OF INFORMATION

We also caution against broadening any of the information-sharing provisions in the CFATS program. Currently, security information such as Site Security Plans,

Security Vulnerability Assessments and security infrastructure information is kept between DHS and those at the facility who can demonstrate a “need to know.” Allowing broad access to this information weakens the security of the site, increases the likelihood that this information will be leaked to the public and could lead to situations ranging from an increase in vulnerability to terrorist attacks at the site to internal threats such as theft and diversion. It should be strongly noted that security and intelligence information has traditionally been shared on a strict need to know basis and has not been made accessible to those who do not have a need to know. There is plenty of historical evidence to support and continue limited disclosure of sensitive security and business information. While all employees should have security awareness training, detailed site security information should be strictly limited to those specific individuals with a need to know.

BACKGROUND CHECKS (PERSONNEL SURETY)

Under CFATS, it is required that personnel with access to sensitive information or relevant operations be vetted against the National Terrorism Screening Database (NTSDB)—no matter if the person has already been vetted by other Government credentialing programs, such as the Transportation Worker Identification Card (TWIC) program, the Hazardous Materials Endorsement (HME) or a host of others. Having to obtain and maintain multiple Government credentials is duplicative, burdensome, and costly for industry and DHS. NPRA recommends that DHS develop a new, universal Federal security credential for personnel with access to sensitive information or relevant operations that meet the requirements of CFATS RBPS No. 12—Personnel Surety. A possible first step toward this end would be the creation of a Chemical Industry Worker Identification Card (CIWIC) to replace all other Federal chemical security credentials. In the interim there should be reciprocity of other Federal chemical security credentials.

MARITIME TRANSPORTATION SECURITY ACT

Many of our member companies comply with the security requirements under the Maritime Transportation Security Act (MTSA), a program administered by the U.S. Coast Guard (USCG). The Coast Guard and NPRA members have worked together closely to achieve the security goals of MTSA.

If CFATS and MTSA are harmonized, the work that sites have done to comply with MTSA must be recognized. Further, MTSA sites should not be subject to dual inspections and that the USCG should continue its role at traditional MTSA sites.

PIPELINES

Any new CFATS legislation should exclude pipelines, as they are regulated by the Transportation Security Administration’s Pipeline Security Division.

EXERCISES AND DRILLS

Red team drills are unnecessary for CFATS sites and may lead to unintended injuries and tension in surrounding communities. However, we do support security training drills with local law enforcement, emergency response personnel, and surrounding communities that would allow all parties to be better prepared for a terrorist event.

CONCLUSION

America’s refiners and petrochemical manufacturers are committed to complying with CFATS. We do not oppose a reasonable review of the current program; however, the existing program is still developing and should be allowed to be fully implemented before it is significantly altered. The program should also be made permanent to provide regulatory certainty and a stable security framework for the future. We urge the committee to reject any attempts to significantly amend the current program—particularly with provisions that would undermine both security and economic development.

NPRAs appreciate the opportunity to submit this statement for the record and stands ready and willing to work with the committee and Congress towards the implementation of sound, responsible, effective chemical facility security policy.

Mr. LUNGREN. The Chairman will now recognize the Ranking Minority Member of the subcommittee, the gentlelady from New York, Ms. Clarke, for any statement she may have.

Ms. CLARKE of New York. Thank you, Mr. Chairman, and let me welcome you, Mr. Beers. I would like to congratulate you first of all, Mr. Chairman, in the last Congress our places on this dais were reversed as Chairman and Ranking Member of the Emerging Threat Subcommittee.

Our subcommittee has now been given the added responsibility of infrastructure protection. It is a topic that I know we both have interest and a shared concern.

Even though our respective roles have been changed and the scope and membership of the subcommittee has changed as well, I know that one thing will not change is our effective working relationship and our shared commitment to put partisanship aside and to do our best to protect our country.

The security of our Nation's chemical facilities is an important topic for this committee and this subcommittee, and I thank you for holding this hearing. I would also like to thank our witnesses for appearing before us today. I look forward to your testimony and our discussion here today.

As most of you know, I am from New York. The city itself has industries of every kind, many of them chemical manufacturers and many of them use chemicals. Right across the Hudson River stands a collection of refinery, chemical facilities between Newark Airport and Port Elizabeth that has been referred to by terrorism experts as the most dangerous 2 miles in America because a major release of toxic chemicals from any of these facilities could injure or kill tens or hundreds of thousands of people and possibly impact millions.

So it is important to me not just as the Ranking Member of this subcommittee, but also in my duty to protect my constituents that we do our best to make these chemical facilities as secure as possible. The Chemical Facility Anti-Terrorism Standards program, CFATS, has been successful to date even though its final implementation has not been complete.

Even though CFATS is in its middle stages, we can already see its value. For just the first two phases, the initial tox screen phase where facilities report their chemicals of interest and the second, security vulnerability assessment phase, where vulnerabilities are identified, over 3,000 facilities that were initially in the program have made changes that lowered their risk to the point that their participation in CFATS is no longer required.

I am sure, Mr. Chairman, that you share my conviction that this program should be made permanent through a comprehensive authorization. I am also sure that you recognize that while several facilities subject to CFATS have lowered their risk by examining their holdings and making process changes, there is a large and important group of facilities, drinking water, wastewater, and facilities located at ports that have been exempted from CFATS and therefore have not had the incentive to lower their risk.

I should note that one of our witnesses who will be on the second panel is from a wastewater facility that on its own initiative changed from dangerous to benign substances. We in this room today are all safer for it. I think that DC Water should be viewed as an example of two important points.

No. 1, water facilities can represent as much of a hazard as other chemical facilities and No. 2, that inherently safer practices do work, are well understood and can significantly increase security by reducing consequences of release of chemicals.

If a toxic gas is present in my district, I don't care if it comes from a chemical facility, a refinery, a water treatment facility or a chemical tank, or in the port, we still have the same consequences.

Mr. Chairman, I look forward to working together with you to close this and other important security gaps while at the same time giving permanent status to the current CFATS authority that have worked well so far. I thank you for holding this hearing, and I yield back.

Mr. LUNGREN. Thank you very much.

Now it is my pleasure to recognize the Ranking Minority Member of the full committee, the gentleman from Mississippi, Mr. Thompson, for any statement that he might make.

Mr. THOMPSON. Thank you very much, Mr. Chairman, and I too salute you in your maiden voyage as Chairman of this subcommittee.

As you know, however, enhancing security of the chemical sector is a major interest of mine. Over the years you and I both have worked together effectively on this important homeland security issue. I was disappointed that last year when we finally were able to get the House to approve a comprehensive chemical security bill, you chose not to support it. But we are going to do better this time.

I hope that we can recapture the bipartisan spirit that we had in the 109th, 110th, and most of the 111th Congress on the committee to bring an equally strong chemical security bill to the House floor.

Today we are meeting to get a progress report from Under Secretary Beers on the Chemical Facility Anti-Terrorism Standards or CFATS program. DHS in the 4 years since it was given authority to regulate the chemical section for security, has not only moved forward expeditiously but thoughtfully with the CFATS regulations.

As a result all over the country, the level of risk posed by chemical facilities to their surrounding communities has declined as more and more operators have chosen to reduce or even eliminate their holding of certain chemicals of interest.

Operators have come to realize that simple changes to chemical holdings not only make security sense but business sense. The Department deserves credit for all it has done to promulgate and carry out the CFATS process. Equal credit, however, is due to the companies that make up the chemical sector for their positive response and willingness to work with DHS to make our country more secure.

There have, of course, been a few missteps, but the Department and the sector have adapted quickly and made adjustments as necessary. As the CFATS process moves forward, there continues to be some statutory gaps that must be addressed.

These gaps include the exemption of drinking water, wastewater in port facilities, the lack of strong whistleblower protection, and the absence of methods to reduce consequences of terrorist attacks in the risk-based program.

The bill that passed the House last year closed all of these and would have given CFATS permanent status. I hope, Mr. Chairman, that we can use last year's bill as a starting point to continue discussion and ultimately reach a bipartisan solution.

I know we have some jurisdictional obstacles to overcome on the House floor. Certainly the failure of the new House leadership to fix jurisdiction remains a problem, but the work goes on. I look forward to hearing from our witnesses. I thank all of you for contributing to this process. I yield back.

Mr. LUNGREN. I thank the gentleman for his comments. I am sorry that it has been a bipartisan failure to grant this committee the jurisdiction that it should have. Hopefully we can get a bipartisan response to that some time and move in the right direction.

I would just say at the outset that other Members of the committee are reminded that opening statements may be submitted for the record.

[The statement of Hon. Richardson follows:]

PREPARED STATEMENT OF HONORABLE LAURA RICHARDSON

FEBRUARY 11, 2011

I would like to thank Chairman Lungren and Ranking Member Clarke for holding this important hearing today on maintaining the security of our Nation's chemical facilities. I look forward to hearing the testimony of our distinguished panel of witnesses today as Congress continues to work on reauthorizing the Department of Homeland Security's authority to regulate chemical facilities.

The Chemical Facility Anti-Terrorism Standards (CFATS) is an example where the Department of Homeland Security, Congress, and industry have come together to implement safety standards that have had a positive effect on improving our National security. While we may not always agree with every provision in these standards, I think we can all agree that CFATS have been a proven tool in helping to keep our facilities, workers, and communities safe.

The chemical industry employs nearly a million Americans and accounts for nearly \$600 billion of our Nation's GDP. More than 70,000 industrial, consumer, and defense-related products from plastics to fiber optics are produced by the Nation's chemical facilities. The economic and strategic value of the chemical industry also makes it an attractive target to terrorists, especially given the destructive power of many of the chemicals housed in these facilities. When misused, these chemicals could have a devastating impact on the surrounding communities.

The chemical industry is extremely important to my district. The 37th Congressional District of California is home to the Port City of Long Beach. My district is also home to several major oil refineries, gas treatment facilities, and petro chemical facilities. The chemical facilities in my district employ nearly 2,600 employees in high-paying positions.

In 1984, a poison gas leak at Union Carbide's Bhopal plant killed 10,000 people within 72 hours and more than 25,000 people after the blast. This was just an accident! If a terrorist successfully carried out an attack on one of the chemical facilities in my district the death count would be significantly higher.

Finally, it is my prerogative to make sure that not only the chemical facilities in my district are protected against a potential terrorist attack, but that all facilities across the country are secure against attacks.

Again, I thank you Mr. Chairman, and Ranking Member Clarke for convening this very important hearing today. I look forward to working with you and my other colleagues on this subcommittee. I also look forward to hearing from our excellent panel of witnesses. I yield back the balance of my time.

Mr. LUNGREN. Although Ms. Jackson Lee is not a Member of this committee, she has permission to sit in on it and without objection that will occur. However, Members of the subcommittee will be recognized before a Member of the committee who is not a Member of the subcommittee.

We are pleased to have a distinguished witness before us today on this panel for this important topic. I would just remind him that your entire written statement will be made a part of the record and you might summarize. We would ask you to attempt to summarize that in 5 minutes and then be open to questions, although I am not one that will hammer you down after 5 minutes if you would just keep that in mind.

It is our pleasure to have before us today as our opening witness, Under Secretary Rand Beers from the Department of Homeland Security. He is in charge of the National Protection and Programs Directorate and has a distinguished career, one that gives him a great opportunity to provide great leadership in his current position. One of the obligations they have is to try and implement the CFATS program.

So I am waiting with an earnest heart to hear what you have to say about this program. Mr. Beers, thank you for appearing before us, and we are ready to receive your testimony.

STATEMENT OF RAND BEERS, UNDER SECRETARY, NATIONAL PROTECTION AND PROGRAMS DIRECTORATE, DEPARTMENT OF HOMELAND SECURITY

Mr. BEERS. Thank you very much, Chairman Lungren, and I will definitely try to abide by the 5-minute rule. Thank you also Ranking Member Clarke, Ranking Committee Member Thompson and other distinguished Members of this subcommittee and Congresswoman Jackson Lee as well.

It is a pleasure to appear before you all today to discuss the Department of Homeland Security's efforts to secure the high-risk chemical facilities. As you are aware, the Department's current authority under Section 550 of the fiscal year 2007 Homeland Security Appropriations Act as amended was set to expire in October 2010 but has temporarily been extended under the current continuing resolution.

DHS is eager to work with this committee and the Congress and all levels of government and the private sector to achieve passage of legislation that permanently authorizes and appropriately matures the Chemical Facilities Anti-Terrorism Standards program.

While the inspection process is still on-going, our analyses indicate that the program is delivering tangible results that make the Nation more secure.

For example, since the program's inception, 1,246 facilities completely removed their chemicals of interest and an additional 584 facilities no longer possess the quantity of chemicals of interest that meet the threshold requirements to be considered as high-risk facilities.

CFATS currently covers 4,755 high-risk facilities Nation-wide across all 50 States of which 4,094 facilities have received final high-risk determinations and due dates for the submission of a site security or an alternative security plan.

This is a reflection of the significant work of 39,000 facilities that submitted initial consequence screenings. More than 4,000 facilities have submitted their security plans, and in February 2010, the Department began conducting inspections of final tiered facilities

starting with the highest risk or Tier 1 facilities. The Department has completed 175 preauthorization hearings.

An important point that I hope does not get lost in all these statistics is the open dialogue that DHS has established with industry through this program and the successful security gains that are implemented already as a result.

We have also enjoyed a constructive dialogue with the Congress, including Members of this committee, and we are very much looking forward to your contemplation of new authorizing legislation of the CFATS program.

The Department, as I said, supports permanent authorization and is committed to working with you on that to pass stand-alone chemical security legislation that includes that permanent authorization this year.

As you know, the administration believes in an authorization that should close security gaps that exist in the current statute, such as eliminating the exemption for water and wastewater facilities and prudently approaching mandatory consideration of inherently safer technology.

I am looking forward to this dialogue. Thank you for having this important hearing. I would be happy to respond to any questions which you might have. Thank you.

[The statement of Mr. Beers follows:]

PREPARED STATEMENT OF RAND BEERS

FEBRUARY 11, 2011

Thank you, Chairman Lungren, Ranking Member Clarke, and distinguished Members of the subcommittee. It is a pleasure to appear before you today to discuss the Department of Homeland Security's (DHS) efforts to secure high-risk chemical facilities. As you are aware, the Department's current authority under Section 550 of the fiscal year 2007 Department of Homeland Security Appropriations Act, as amended, was set to expire in October 2010, but has been temporarily extended under the current Continuing Resolution. DHS is eager to work with this committee, Congress, and all levels of government and the private sector to achieve passage of legislation that permanently authorizes and appropriately matures the Chemical Facility Anti-Terrorism Standards (CFATS) program. In the interest of facilitating that collaboration, my testimony focuses on the current program and the key principles that DHS would like to see guide the program's maturation.

CHEMICAL SECURITY REGULATIONS

Section 550 of the fiscal year 2007 Department of Homeland Security Appropriations Act directed the Department to develop and implement a regulatory framework to address the high level of security risk posed by certain chemical facilities. Specifically, Section 550(a) of the Act authorized the Department to adopt rules requiring high-risk chemical facilities to complete Security Vulnerability Assessments (SVAs), develop Site Security Plans (SSPs), and implement protective measures necessary to meet risk-based performance standards established by the Department. Consequently, the Department published an Interim Final Rule, known as CFATS, on April 9, 2007. Section 550, however, expressly exempts from those rules certain facilities that are regulated under other Federal statutes, including those regulated by the United States Coast Guard pursuant to the Maritime Transportation Security Act (MTSA), drinking water and wastewater treatment facilities as defined by Section 1401 of the Safe Water Drinking Act and Section 212 of the Federal Water Pollution Control Act, and facilities owned or operated by the Departments of Defense and Energy, as well as certain facilities subject to regulation by the Nuclear Regulatory Commission (NRC).

The following core principles guided the development of the CFATS regulatory structure:

- (1) *Securing high-risk chemical facilities is a comprehensive undertaking that involves a National effort, including all levels of government and the private sec-*

tor.—Integrated and effective participation by all stakeholders—Federal, State, local, Tribal, and territorial government partners as well as the private sector—is essential to securing our critical infrastructure, including high-risk chemical facilities. Implementing this program means tackling a sophisticated and complex set of issues related to identifying and mitigating vulnerabilities and setting security goals. This requires a broad spectrum of input, as the regulated facilities bridge multiple industries and critical infrastructure sectors. By working closely with experts, members of industry, academia, and Federal Government partners, we leveraged vital knowledge and insight to develop the regulation.

(2) *Risk-based tiering to guide resource allocations.*—Not all facilities present the same level of risk. The greatest level of scrutiny should be focused on those facilities that present the highest risk—those that, if attacked, would endanger the greatest number of lives.

(3) *Reasonable, clear, and calibrated performance standards will lead to enhanced security.*—The current CFATS rule includes enforceable risk-based performance standards. High-risk facilities have the flexibility to develop appropriate site-specific security measures that will effectively address risk. The Department will analyze each final tiered facility's SSP to see if it meets CFATS performance standards. If necessary, DHS will work with the facility to revise and resubmit an acceptable plan.

(4) *Recognition of the progress many companies have already made in improving facility security leverages those advancements.*—Many companies have made significant capital investments in security since 9/11. Building on that progress in implementing the CFATS program will raise the overall security baseline at high-risk chemical facilities.

On Nov. 20, 2007, the Department published Appendix A to CFATS, which lists 322 chemicals of interest—including common industrial chemicals such as chlorine, propane, and anhydrous ammonia—as well as specialty chemicals, such as arsine and phosphorus trichloride. The Department included chemicals based on the consequences associated with one or more of the following three security issues:

(1) *Release.*—Toxic, flammable, or explosive chemicals that have the potential to create significant adverse consequences for human life or health if intentionally released or detonated;

(2) *Theft/Diversion.*—Chemicals that have the potential, if stolen or diverted, to be used or converted into weapons that could cause significant adverse consequences for human life or health; and

(3) *Sabotage/Contamination.*—Chemicals that, if mixed with other readily available materials, have the potential to create significant adverse consequences for human life or health.

The Department also established a Screening Threshold Quantity for each chemical of interest based on its potential to create significant adverse consequences to human life or health in one or more of these ways.

Implementation and execution of the CFATS regulation requires the Department to identify which facilities it considers high-risk. The Department developed the Chemical Security Assessment Tool (CSAT) to identify potentially high-risk facilities and to provide methodologies that facilities can use to conduct SVAs and to develop SSPs. CSAT is a suite of on-line applications designed to facilitate compliance with the program; it includes user registration, the initial consequence-based screening tool (Top-Screen), an SVA tool, and an SSP template. Through the Top-Screen process, the Department initially identifies and sorts facilities based on their associated risks.

If a facility is initially identified during the Top-Screen process as potentially having a level of risk subject to regulation under CFATS, the Department assigns the facility to one of four preliminary risk-based tiers, with Tier 1 representing the highest level of potential risk. Those facilities must then complete SVAs and submit them to the Department, although facilities preliminarily designated as Tier 4 facilities also have the option of submitting an Alternative Security Program (ASP). Results from the SVA inform the Department's final determinations as to whether a facility is in fact high-risk and, if so, of the facility's final tier assignment. Each SVA is carefully reviewed for its description of how chemicals of interest are actually held at the site, how those chemicals are managed, and for physical, cyber, and chemical security risks.

After completing its review of a facility's SVA, the Department makes a final determination as to whether the facility is considered high-risk and assigns the facility a final risk-based tier. Final high-risk facilities are then required to develop an SSP

or, if they so choose, an ASP that addresses its identified vulnerabilities and security issues. Only facilities that receive a final high-risk determination letter under CFATS will be required to complete and submit an SSP or, if the facility so chooses, an ASP. DHS' final determinations of which facilities are high-risk are based on each facility's individual consequentiality and vulnerability as determined by its Top-Screen, SVA, and any other available information. The higher the facility's risk-based tier, the more robust the security measures and the more frequent and rigorous the inspections will be. The purpose of inspections is to validate the adequacy of a facility's SSP and to verify that measures identified in the plan are being implemented.

IMPLEMENTATION STATUS

To date, the Department has reviewed more than 39,000 Top-Screen consequence assessment questionnaires submitted by potentially high-risk chemical facilities. Since June 2008, we have notified more than 7,000 preliminarily tiered facilities that they have been initially designated as high-risk and are thus required to submit SVAs; we have nearly completed our review of the almost 6,200 SVAs that have been submitted. In May 2009, we began notifying facilities of their final high-risk determinations, risk-based tiering assignments, and the requirement to complete and submit an SSP or ASP.

In May 2009, the Department issued 141 final tier determination letters to the highest risk (Tier 1) facilities, confirming their high-risk status and initiating the 120-day time frame for submitting an SSP. After issuing this initial set of final tier determinations, the Department periodically issued notifications to additional facilities of their final high-risk status. To date, more than 4,000 additional facilities have received final high-risk determinations and tier assignments, and several hundred that were preliminarily tiered by DHS were informed that they are no longer considered high-risk.

CFATS currently covers 4,755 high-risk facilities Nation-wide across all 50 States, of which 4,094 facilities have received final high-risk determinations and due dates for submission of an SSP or ASP. More than 4,000 facilities have submitted SSPs (or ASPs) to date, and the Department is in the process of reviewing these submissions. The Department continues to issue final tier notifications to facilities across all four risk tiers as additional final tier determinations are made by the Department.

In February 2010, the Department began conducting inspections of final-tiered facilities, starting with the Tier 1-designated facilities, and has completed more than 175 pre-authorization inspections to date. The Department intends to use these initial inspections to help gain a comprehensive understanding of the processes, risks, vulnerabilities, response capabilities, security measures and practices, and any other factors that may be in place at a regulated facility that affect security risk in order to help facilities submit SSPs that can be approved under CFATS. After DHS issues a letter of authorization for a facility's SSP, DHS will conduct a comprehensive and detailed compliance inspection before making a final determination as to whether the facility has appropriately enacted their SSP. Facilities that have successfully implemented their approved SSPs and have passed an inspection will be considered in compliance with the required performance standards.

A critical element of the Department's efforts to secure the Nation's high-risk chemical facilities, the SSP enables final high-risk facilities to document their individual security strategies for meeting the Risk-Based Performance Standards (RBPS) established under CFATS. Each high-risk facility's security strategy will be unique, as it depends on the facility's risk level, security issues, characteristics, and other factors. Therefore, the SSP tool collects information on each of the 18 RBPS for each facility. The RBPS cover the fundamentals of security, such as restricting the area perimeter, securing site assets, screening and controlling access, cybersecurity, training, and response. The SSP tool is designed to take into account the complicated nature of chemical facility security and allows facilities to describe both facility-wide and asset-specific security measures. The Department understands that the private sector generally, and CFATS-affected industries in particular, are dynamic. The SSP tool allows facilities to involve their subject-matter experts from across the facility, company, and corporation, as appropriate, in completing the SSP and submitting a combination of existing and planned security measures to satisfy the RBPS. The Department expects that most approved SSPs will consist of a combination of existing and planned security measures. Through a review of the SSP, in conjunction with an on-site inspection, DHS will determine whether a facility has met the requisite level of performance given its risk profile and thus whether its SSP should be approved.

Along with the initial group of final Tier 1 notifications and the activation of the SSP tool in May 2009, DHS issued the *Risk-Based Performance Standards Guidance* document. The Department developed this guidance to assist high-risk chemical facilities subject to CFATS in determining appropriate protective measures and practices to satisfy the RBPS. It is designed to help facilities comply with CFATS by providing detailed descriptions of the 18 RBPS as well as examples of various security measures and practices that could enable facilities to achieve the appropriate level of performance for the RBPS at each tier level. The *Guidance* also reflects public and private sector dialogue on the RBPS and industrial security, including public comments on the draft guidance document. High-risk facilities are free to make use of whichever security programs or processes they choose—whether or not in the *Guidance*—provided that they achieve the requisite level of performance under the CFATS RBPS. The *Guidance* will, however, help high-risk facilities gain a sense of what types and combination of security measures may satisfy the RBPS. The Department has also offered regular SSP training webinars to assist high-risk facilities with completing their SSPs.

For additional context, I would like to provide you with an example of how some facilities may be approaching the development and submission of their SSPs: In the case of a Tier 1 facility with a release hazard security issue, the facility is required to restrict the area perimeter appropriately, which may include preventing breach by a wheeled vehicle. To meet this standard, the facility is able to consider numerous security measures, such as cable anchored in concrete block along with movable bollards at all active gates or perimeter landscaping (e.g., large boulders, steep berms, streams, or other obstacles) that would thwart vehicle entry. The Department will approve the security measure as long as it is determined by the Department to be sufficient to address the applicable performance standard. Under Section 550, the Department cannot mandate a specific security measure to approve the SSP.

In June 2010, the Department issued its first Administrative Orders under CFATS to 18 chemical facilities for failure to submit an SSP. Throughout the remainder of the year, the Department issued an additional 47 Administrative Orders to chemical facilities that had failed to submit an SSP in a timely manner. Administrative Orders are the first step toward enforcement under CFATS. An Administrative Order does not impose a penalty or fine, but directs the facility to take specific action to comply with CFATS—in this case, to complete the SSP within 10 days of receipt. If the facility does not comply with the Administrative Order, however, the Department may issue an Order Assessing Civil Penalty of up to \$25,000 each day the violation continues, or an Order to Cease Operations. All 65 facilities that received an Administrative Order ultimately completed their SSPs following receipt of the Administrative Order, or providing amplifying information to the Department, that satisfactorily explained why they had failed to meet the deadline for submitting their SSPs, and thus, no further enforcement action was necessary. As CFATS implementation progresses, the Department expects to continue to exercise its enforcement authority to ensure CFATS compliance.

OUTREACH EFFORTS

Since the release of CFATS in April 2007, the Department has taken significant steps to publicize the rule and ensure that the regulated community and our security partners are aware of its requirements. As part of this outreach program, the Department has regularly updated impacted sectors through their Sector Coordinating Councils and the Government Coordinating Councils of industries most impacted by CFATS, including the Chemical, Oil and Natural Gas, and Food and Agriculture Sectors. We have also solicited feedback from our public and private sector partners and, where appropriate, have reflected that feedback in our implementation activities. As the program continues to mature, the Department participates in an average of 250 CFATS-specific outreach engagements annually, not including formal coordination activities with individual facilities such as pre-authorization inspections and Compliance Assistance Visits. We have presented at numerous security and chemical industry conferences; participated in a variety of other meetings of relevant security partners; established a Help Desk for CFATS questions that receives between 40 and 80 calls daily; put in place a CFATS tip-line for anonymous chemical security reporting; and developed and regularly updated a highly regarded Chemical Security website (www.DHS.gov/chemicalsecurity). This month, the Department updated the CFATS website to include a more robust, searchable Knowledge Center, which further supports the regulated community. These efforts are having a positive impact: Again, more than 39,000 Top-Screens have been submitted to the Department via CSAT.

In addition, the Department continues to focus on fostering solid working relationships with State and local officials as well as first responders in jurisdictions with high-risk facilities. To meet the risk-based performance standards under CFATS, facilities need to cultivate and maintain effective working relationships—including a clear understanding of roles and responsibilities—with local officials who aid in preventing, mitigating, and responding to potential attacks. To facilitate these relationships, our inspectors have been actively working with facilities and officials in their areas of operation, and they have participated in more than 100 Local Emergency Planning Committee meetings to provide a better understanding of CFATS requirements. Last year, the Department, in collaboration with the State, local, Tribal, and territorial Government Coordinating Council, issued a tri-fold brochure which summarizes CFATS programs and processes for local emergency responders.

In May 2010, the Department launched a web-based information-sharing portal called “CFATS-Share.” This tool provides interested State Homeland Security Advisors, DHS Protective Security Advisors, and fusion centers access to detailed CFATS facility information as needed. In the future, DHS plans to make this tool available to other Federal security partners, such as the Federal Bureau of Investigation. The Department continues to improve the CFATS-Share web portal based on feedback from users.

Additionally, the Department continues to actively collaborate across components within DHS and with other Federal agencies in the area of chemical security, including routine coordination between the Department’s National Protection and Programs Directorate (NPPD) and the United States Coast Guard (USCG), the Transportation Security Administration, the Department of Justice’s Federal Bureau of Investigation and Bureau of Alcohol, Tobacco, Firearms and Explosives, the NRC, and the Environmental Protection Agency (EPA). One primary example of this coordination includes the establishment of a joint NPPD/USCG CFATS–MTSA Working Group to evaluate and, where appropriate, implement methods to harmonize the CFATS and MTSA regulations. Similarly, the Department has been working closely with the EPA to begin evaluating how the CFATS approach could be used for water and wastewater treatment facilities, should the water and wastewater treatment facility exemption be removed by Congress in future versions of chemical facility security or water facility security regulations.

The Department also launched an Agricultural Facility Survey in July 2010. The goal of the survey is to provide the Department with additional information on the potential risks related to agricultural Chemicals of Interest throughout the distribution chain—including manufacturers, distributors, retailers, commercial applicators, and end-users. The survey results will also help the Department determine the most appropriate approach for addressing the existing extension of the CFATS Top Screen due date for agricultural production facilities. The Department received completed surveys from nearly 1,200 CFATS facilities and is currently analyzing the results to determine the best approach to take regarding agricultural production facilities.

Internally, we are continuing to build the Infrastructure Security Compliance Division that is responsible for implementing CFATS. We have hired, or are in the process of on-boarding, more than 178 people, and we are continuing to hire throughout this fiscal year to meet our staffing goal of 268 positions. These numbers include our field inspector cadre, where we have hired 95 of 103 field inspector positions and 14 of 14 field leadership positions.

LEGISLATION TO PERMANENTLY AUTHORIZE CFATS

We have enjoyed the constructive dialogue with Congress, including Members of this committee, as it contemplates new authorizing legislation. The Department recognizes the significant work that this committee and others, including the Senate Committee on Homeland Security and Governmental Affairs, the Senate Committee on Environment and Public Works and the House Committee on Energy and Commerce, have completed in reauthorizing the CFATS program to date and to address chemical facility security. We appreciate this effort and look forward to continuing the constructive engagement with Congress on these important matters.

The Department supports a permanent authorization for the CFATS program. The Department is committed to working with Congress and other security partners to pass stand-alone chemical security legislation that includes permanent authority beginning in fiscal year 2011. The latest Continuing Resolution authorizes an extension of the statutory authority for CFATS, which otherwise would have sunset on Oct. 4, 2010.

It is important to highlight that the administration has developed a set of guiding principles for the reauthorization of CFATS. These principles are the foundation for the Department's position on permanent CFATS reauthorization:

- The administration supports permanent authorization to regulate security of high-risk chemical facilities through risk-based performance standards.
- The Department should be given reasonable deadlines by Congress to promulgate new rules to implement any new legislative requirements. CFATS, as currently being implemented, should remain in effect until or unless it is supplemented by new regulations.
- The administration supports, where possible, using safer technology, to enhance the security of the Nation's high-risk chemical facilities. Similarly, we recognize that risk management requires balancing threat, vulnerabilities, and consequences with the costs and benefits of mitigating risk. In this context, the administration has established the following policy principles in regard to inherently safer technologies (IST) at high-risk chemical facilities:
 - The administration supports consistency of IST approaches for facilities regardless of sector.
 - The administration believes that all high-risk chemical facilities, Tiers 1–4, should assess IST methods and report the assessment in the facilities' SSPs.
 - Further, the appropriate regulatory entity should have the authority to require facilities posing the highest degree of risk (Tiers 1 and 2) to implement IST method(s) if such methods demonstrably enhance overall security, are determined to be feasible, and, in the case of water sector facilities, consider public health and environmental requirements.
 - For Tier 3 and 4 facilities, the appropriate regulatory entity should review the IST assessment contained in the SSP. The entity should be authorized to provide recommendations on implementing IST, but it would not have the authority to require facilities to implement the IST methods.
 - The administration believes that flexibility and staggered implementation would be required in implementing this new IST policy.
- The administration supports maintaining the Department's current Chemical-terrorism Vulnerability Information regime for protecting sensitive information relating to chemical facility security. This regime is similar to, but distinct from, other Controlled Unclassified Information protection regimes.
- The Department supports amending the current exemption for drinking water and wastewater facilities to specify that the Environmental Protection Agency (EPA) would have the lead on regulating for security, with DHS supporting EPA to ensure consistency across all sectors. This consistency could be achieved, for example, by the use of CFATS compliance tools and risk analysis with modifications as necessary to reflect the uniqueness of the water sector and statutory requirements. As DHS and EPA have stated before, we believe that there is a critical gap in the U.S. chemical facility security regulatory framework—namely, the exemption of drinking water and wastewater treatment facilities from CFATS. We need to work with Congress to close this gap to secure chemicals of interest at these facilities and to protect the communities that they serve; drinking water and wastewater treatment facilities that meet CFATS thresholds for chemicals of interest should be regulated. We do, however, recognize the unique public health and environmental requirements and responsibilities of such facilities. For example, we understand that a cease-operations order that might be appropriate for another facility under CFATS would have significant public health and environmental consequences when applied to a water facility.
- As you are aware, facilities regulated under MTSA authority are statutorily exempted from CFATS and thus are not required to submit Top-Screens to DHS. In order to help DHS develop a more comprehensive picture of security issues at the Nation's chemical facilities, and to help DHS evaluate whether any regulatory gaps exist that may pose an unacceptable security risk, the Department has begun the process, with close cooperation between NPPD and USCG, for determining whether and how to require MTSA-covered facilities that possess CFATS chemicals of interest to complete and submit CFATS Top-Screens.
- With respect to the other current statutory exemptions, the Department supports:
 - Maintaining the exemptions for both Defense and Energy Department facilities. Although the Department of Energy is exempt from the current statute, DOE policy does require chemical sabotage assessments utilizing the select agents lists and the adoption of protection measure where necessary; and

- Amending the exemption for facilities regulated under the NRC to clarify the scope of the NRC exemption and to specify that DHS and the NRC shall work together to make a final determination on whether a facility or an area within a facility is subject to NRC regulation and is thus exempt from DHS regulation.

Given the complexity of chemical facility regulation, implementation logistics, and resource implications, any requirements considered in prospective legislation should also be taken into account to avoid having the Department extensively revisit aspects of the program that are either currently in place or which will be implemented in the near future.

CONCLUSION

The Department is collaborating extensively with the public, including members of the chemical sector and other interested groups, to work toward our collective goals under the CFATS regulatory framework. In many cases, industry has voluntarily made tremendous progress to ensure the security and resiliency of its facilities and systems. As we implement CFATS, we will continue to work with industry, our Federal partners, States, and localities to get the job done.

The administration recognizes that CFATS reauthorization requires further technical work. The Department is ready to engage in technical discussions with committee staff, affected stakeholders, and others to work out the remaining details. We must focus our efforts on implementing a risk- and performance-based approach to regulation and, in parallel fashion, continue to pursue the voluntary programs that have already resulted in considerable success. We look forward to collaborating with the committee, industry, and Government partners to ensure that the chemical facility security regulatory effort achieves success in reducing risk in the chemical sector.

Thank you for holding this important hearing. I would be happy to respond to any questions you may have.

Mr. LUNGREN. Well, thank you very much for your testimony. Maybe that will be a template for others who testify coming well within the 5 minutes. But I don't want to hold people too much to that because then I would have to hold myself to that.

Thank you, Mr. Beers, for your testimony. We do know that your time is valuable, and we appreciate you being here today to discuss the state of NPPD and the ways to improve its effectiveness and efficiency in stopping the threats of terrorism against our chemical facilities. I will recognize myself for 5 minutes to ask questions.

I happen to agree with you that we have made progress and that DHS is going in the right direction. However, I just have to ask this question: In your testimony you report that a little over 4,700 facilities are covered by CFATS but only 175 preauthorization inspections have been completed, only four authorization inspections completed. I believe one you either know or one site security plan is formally approved or disapproved.

So this is 4 years later. You have had the authority to regulate these facilities and hundreds of millions of taxpayers' dollars later, why is the pace so slow? Is it because of some inherent problem with the CFATS program as we set it up? Do we have to start all over again? Is it because you haven't had enough people? We haven't had enough resources?

Is it some other reason because, you know, we are looking at effective and efficient Government, and if I go home and talk to my constituents and say hey, I am proud of the fact that I helped start this program 4 years ago with the initial thought in our legislation, and yet we only have one site or no sites that have actually fully been approved, they are going to say how is that efficient?

How is that effective? What are you going to do about it? So I guess I would ask you: How is that efficient? How is that effective? What are you going to about it?

Mr. BEERS. Sir, that is an excellent question, and let me just answer by saying several points. The first point is yes, we started off with potentially 47,000 programs that might be within the program. We reduced it in the first instance to 8,000. We have now reduced the number of affected facilities to a little over 4,000.

In that process, we have determined that, No. 1, the number of facilities that need to be looked at is less. No. 2, the number of facilities that were in the initial cut to be looked at have made adjustments as I indicated in my oral testimony that have made them safer by no longer putting them in the position of being high-risk facilities.

No. 3, as we have given final tier notices to the various facilities they have begun the process of their site selection plans. They have begun in parallel the movement in the direction of security measures.

So actually getting to a final approved site security program does not mean that security hasn't improved over the process. We have to date nine facilities who have received letters of authorization, you are correct. We have had four subsequent site security visits. We have not approved a single plan yet, but I think it is absolutely fair to say that we have moved in the direction of making America safer.

With respect to the program overall, I don't believe that all of the good work that has been done and all of the progress that has made and the approach to the completion of the site security plans in any way suggest that the program isn't working or that we ought to start over again.

With respect to the issue of resources and people which you asked, I think this is still a growing program. We have in terms of chemical inspectors approximately 109 who are located in the field with some in headquarters. We still have a 40 percent growth path with respect to those inspectors that we have to hire.

So it's—it would be imprudent of me to tell you at this point that we need more people. We just to complete the hiring process, which we are doing in a deliberate fashion in order to ensure that when the people come on-board they will be ready and that there will infrastructure to support them.

It is my expectation that with respect to the Tier 1 facilities that we will be through with the inspection process by the end of this calendar year. Thank you, sir.

Mr. LUNGREN. I appreciate that, and I hope that is true. You do recall that you testified before us a year ago, and when we asked when you would be completed with the process you told us in a year. Now I am hearing the same thing from you.

Why should I believe it is going to be at the end of this year when you had thought we were going to do it at the end of last year? If you and I are both fortunate enough to be here next year, why should I expect I am not going to hear that again?

Mr. BEERS. A very fair question, sir. What we discovered in the process of the time between when I made that statement last year and the end of this calendar year was that the submissions on the

part of the industry that made those submissions was inadequate with respect to the actual site security plan proposals that they put forward.

As a result of that, we have gone back to them with requests for more information, with technical assistance as appropriate in order to build solid, respectable site security plans. That ended up occupying the course of this year.

I think from the lessons learned during the course of this year that I think my projection of finishing the Tier 1 facilities by the end of this year is in order. But I certainly respect your question and my statement last year.

Mr. LUNGREN. Thank you very much. My time is up.

I now recognize the gentlelady from New York, the Ranking Member of the subcommittee for 5 minutes of questions.

Ms. CLARKE of New York. Thank you very much, Mr. Chairman. Under Secretary Beers, it is my feeling and the feeling of many of my colleagues that CFATS has worked pretty well so far. But we agree with you that a large gap still exists in chemical security due to the exemption of drinking water, wastewater, and port facilities and that this gap must be closed. Please elaborate on the reasons why the administration believes this gap should be closed?

Mr. BEERS. Thank you, Congresswoman Clarke. Let me start on the port facilities first.

Recognizing that the ports were exempted from this and recognizing that the Secretary of Homeland Security is both the Cabinet Secretary for the CFATS program and for port security with the Coast Guard, she has asked NPPD to work together with the Coast Guard without the requirement for legislation to bring about a harmonization of those two regimes to ensure that from a real perspective that that does not represent a gap. I think I can report that the working group that has this under way has made some important progress.

With respect to water and wastewater, I think this was an area in which some number of the water and wastewater facilities are known to possess quantities of chemicals of interest that would put them in the high-risk category.

They are prevalent in every community in this country. Those which we estimate to be roughly 6,000 that might be tiered into the four categories, represent a gap that we ought to find a solution for. So that is the basis for that proposal that the administration made during the last Congress. Thank you.

Ms. CLARKE of New York. With regards to drinking water, what are the concerns there? Why is it that the administration feels that the gap at the port facilities needs the type of remedies that you have already outlined?

Mr. BEERS. Well, in the case of the drinking water, as with the wastewater, it has to do with the treatment of that water and the use of chlorine as the basis. Chlorine is on our chemical of interest list. We know that there are facilities that have it in quantities that could be potentially dangerous.

Likewise with the port facilities, there are a number of chemical facilities, refineries, and whatnot that exist in those port areas, that while the Coast Guard is clearly responsible for the safety and security of those areas, the actual requirements that are looked at,

the actual issues that are looked at, I should say, are not exactly the same.

We believe that the safety and security of those areas ought to be similarly treated as the facilities that do fall under the Chemical Facilities Anti-Terrorism Standards Act. Thank you.

Ms. CLARKE of New York. Is there an assurance that they don't get caught between CFATS and the MTSA requirement?

Mr. BEERS. That is the intention, to ensure that two different regimes are administered in roughly the same or in a harmonized fashion. This is an effort on our part to try to do the job that we believe in the spirit of the Congress asking us to do this. Thank you.

Ms. CLARKE of New York. Thank you. I yield back, Mr. Chairman.

Mr. LUNGREN. Thank you very much. I will now recognize other Members of the committee for questions that they wish to ask. In accordance with our committee rules and practice I would plan to recognize Members who were present at the start of the hearing by the seniority on the subcommittee. Those coming in later will be recognized on the order of arrival on the floor.

I recognize Mr. Meehan. I would just say that as the prime author of the SAFE Port Act, I appreciate the fact that you are trying to accommodate that authority along with CFATS and see if you can work that out. Whether we need specific legislation or not, we will be in conversation with you about.

But we need to make sure that we are not duplicative in that effort, and the Coast Guard has done a very good job in implementing the SAFE Port Act with the ports of the country.

Mr. Meehan is recognized for 5 minutes.

Mr. MEEHAN. Thank you, Mr. Chairman. Thank you, Mr. Beers, for your testimony here today. Let me ask you a specific question. How much chlorine in terms of, you know, an actual amount represents a threat?

Mr. BEERS. Sir, I don't have that figure in front of me now, but I would be happy to get back to you with a specific amount that that represents in an explanation of how we came to the judgment of that amount.

Mr. MEEHAN. I mean, would a vat of chlorine be a potential threat, a terroristic threat? Somebody could use a vat of chlorine, say, at a swimming pool?

Mr. BEERS. Sir, that is what I need to get back to you on. We are really here talking about drinking water and wastewater, and I don't believe a swimming pool could fall into that. But it has to do with the level, that is the amount, the actual amount of a chemical of interest that is held on site.

Mr. MEEHAN. Right, that is the question I am trying to get to because that is the answer.

Mr. BEERS. I don't have the answer to that specific amount, but we can get you that information. In fact, we can give you that information with respect to all the chemicals that are in Appendix A.

Mr. MEEHAN. I am an advocate of your interest in trying to reach beyond where we are going. I guess I am just watching this anew. We are 10 years after September 11. We are asking tough questions about the steps that we are taking. Are they really working?

I notice that we are already apparently significantly behind in the form of doing the inspections that were discussed earlier at the chemical facilities.

Now we are talking about trying to expand work into the wastewater facilities. I am thinking back, from days as a lifeguard, there are big vats of chlorine in every municipal pool and every private pool and other kinds of places. Do they pose a threat?

Mr. BEERS. As I said, sir, it is not my belief that what we are talking about is the level of chlorine that would be available at a swimming pool, as opposed to a drinking water or a wastewater facility, which are, as you well know, at least insofar as the ones that would fall under the screening, much larger facility.

There are tens of thousands of water and wastewater facilities, yet our estimate of the number that would fall under the high-risk category is only 6,000. Now, that is also a large number, and I recognize that. But it is not every vat of chlorine in every location in the country that is going to fall under that.

Mr. MEEHAN. I share the frustration of trying to make sure that we can balance assuring the safety of the homeland with what is practical with respect to trying to secure or oversee. I think about the implications of this to so many of our municipal water authorities that are already struggling under tremendous pressure just to be able to keep antiquated systems running.

To what extent are these kinds of new regulations or attempts to do further regulation going to deter what limited capacity they have just to keep their places operating from, you know, from diverting dollars for this, when they are already struggling just to do the job that they need to do?

Mr. BEERS. Sir, that is absolutely part of the consideration that we bring to bear in conceiving and publishing and implementing regulations that Congress might choose to provide to the administration. The water and wastewater facilities would be worked on jointly between the Environmental Protection Administration and the Department of Homeland Security.

The administration's proposal is to take the experience and the relationships which EPA has with those facilities and marry it, so to speak, with the experience that we have in working to define regulations that make sense, that are smart, that impose little or no cost on facilities to try to make the implementation not be an onerous fiscal requirement for these administrations.

Because you are certainly right with respect to municipalities and the rigid budget environment that they, as we in the Federal Government, are already under. This is not something that would happen overnight. This is not something that would come down like a ton of bricks.

I think you will find that our relationship with the chemical and related industries has been a partnership in implementing these regulations. If we are given authority for water and wastewater, we would proceed no differently.

Mr. LUNGREN. The gentleman's time is expired.

The Ranking Member of the Full Committee, the gentleman from Mississippi, Mr. Thompson, is recognized for 5 minutes.

Mr. THOMPSON. Thank you very much, Mr. Chairman. Mr. Beers, first state for the record, could you kind of talk very briefly about

the tiering system under CFATS to kind of give new Members of the committee a, you know, who we are talking about and who we are trying to address the most?

Mr. BEERS. Yes, sir. So we have four tiers in the high-risk facilities. In terms of those tiers with respect to the facilities that are in each of them we have 218 facilities in Tier 1, currently, and we have three pending final tiering. We have 535 in Tier 2, with 38 pending final tiering. We have 1,126 in Tier 3, with 146 pending final tiering. We have 2,215 in Tier 4, with 474 pending final tiering.

Tier 1 is the highest tier, the highest risk level. Tier 4 is the lowest risk level. If Members would like, we would be happy to provide as information the criteria that distinguish each of those tiers, one from the other.

Mr. THOMPSON. Mr. Chairman, I think that would be helpful for the new Members if I would go to New Jersey, for instance, some of those facilities are right along the interstate. So part of what we are trying to do is to secure some of those facilities.

Some of them the committee visited, and we became very concerned that we have to do something. Some of them, it is just a mere fence that is the difference between those facilities and a potential terrorist threat.

But also in this, I understand that we had about 3,000 companies to voluntarily go through a process of getting off the list by just looking at how they do things and coming into compliance. Can you share that with the committee, also?

Mr. BEERS. That is correct. I think when the initial regulations were put out, approximately 8,000 facilities submitted tox screen reports believing that they fell within that. Of the 3,000 that fell out, some of those were the result of an inadequate or incorrect understanding, I should say, of what fell in and what fell out.

But among those I think it is also important to know that over 1,000, 1,246, completely removed their chemicals of interest and therefore were no longer within the screening. In 584 of those facilities reduced their holdings to the level that they were no longer within.

So as I have said, this program has increased security, even if we haven't gotten to final approval of a specific security plans because, this has happened. But also it is also true that companies are not waiting for approval of their final security plans to begin some of the implementation of the measures that are included in their security plans.

Mr. THOMPSON. I yield back.

Mr. LUNGREN. The gentleman yields back.

The gentleman from Missouri, Mr. Long, is recognized for 5 minutes.

Mr. LONG. Thank you, Mr. Chairman, and thank you, Under Secretary Beers, for being here today and for your testimony. We are talking about water and wastewater. As far as high-water marks, if I was to ask you the top three high-water marks, the top three things in your mind that have been achieved since the implementation of CFATS, what would I put on my report card?

Mr. BEERS. I think the first thing that you would say is that we have a pretty clear picture of where the security challenges are lo-

cated in this country. I think that that is an important piece of information, both to those of us who are concerned about security, but also to the citizens who live in those communities.

I think the second thing that I would say and strongly believe in is that we have gone about the implementation of this program in true partnership with the chemical industry, and we meet with them on a regular basis. As I have said here, and to some Members outside of the committee hearing room, I think you would hear the same thing from the chemical industries.

The third thing I would say is going from zero to where we are today, that I think we have built the infrastructure within the Federal Government to be a true partner to the chemical industry in moving forward in this regard.

Without detracting from the Member's time, please, I would like to answer Congressman Meehan's question. It is 5,000 pounds—500 pounds of chlorine for theft and diversion, and 2,500 pounds that might be subject to release and that should not include any swimming pool in the country, sir.

Mr. LONG. So on the top three achievement list we have identified the challenges. Is that kind of No. 1?

Mr. BEERS. We defined the problem.

Mr. LONG. Defined the problem.

Mr. BEERS. We defined the problem. We have created a working relationship with the chemical industry. We have built the infrastructure to be a real partner to the industry in terms of implementing this regulation. We are not doing this willy-nilly. We are doing it in full consultation.

Mr. LONG. So we are ready to start seeing results?

Mr. BEERS. We have been seeing the results, but we have got a ways still to go, sir.

Mr. LONG. Let me ask, I have heard you a couple times, your opening statement and later referred to that the chemicals were removed from the facilities if that is correct? My question would be were these chemicals they didn't need? Where did they go?

I know you said some were reduced to a level where they are no longer a threat. But I am kind of trying to sort out where chemicals that they needed in their function have—we tell them, "These are going to be a threat. You need to take these out." What do they do?

Mr. BEERS. Well, let us just talk for a minute about the reduction part of this. The amount of chemicals that might be stored at a particular installation for use in the past was because they thought that that was the size of inventory that made the most sense.

That said, you can also set up a supply chain from the production facility that allows you to have a delivery schedule that still allows you to have an operating chemical—

Mr. LONG. Right. Well, those haven't been removed. They have just adjusted the quantity they kept on the side.

Mr. BEERS. They just adjusted the quantity.

Mr. LONG. Right, but the ones that have been removed are what I am kind of curious about.

Mr. BEERS. I think that what that represents is that they came to believe that they did not need that particular chemical for whatever it was that that chemical was used for. In some cases, that

may well have been with a substitute of another chemical that was not a chemical of interest, but was satisfactory to doing whatever it was that that particular chemical had been doing. So it is a substitute.

Mr. LONG. Okay. So let me ask you another question, here. To what extent does DHS and other agencies share information about security at these facilities?

Mr. BEERS. We do share information. The point, to go back to Congresswoman Long's question—Congresswoman Clarke's question, excuse me—was that we are very much working with the Coast Guard to share information and best practices about what we have been doing in this area, as well as them sharing how they have managed their security and safety operations. So that is very much the case.

Mr. LONG. What barriers, if any, do you think impede the ability to share information between Federal agencies about the security?

Mr. BEERS. I am not aware of any barriers, sir.

Mr. LONG. Really? Good, okay. Thank you for your testimony. I yield back.

Mr. LUNGREN. The gentleman's time is expired.

The gentlelady from California, Ms. Richardson, is recognized for 5 minutes.

Ms. RICHARDSON. Thank you, Mr. Chairman, I just have two questions. Under Secretary Beers, last year you were designated the Department's lead for counterterrorism issues. To my knowledge, you are the first person to be specifically named in this capacity in the Department's history. Could you give us a brief overview of what responsibilities and authorities are associated with your role?

Mr. BEERS. Thank you, Congresswoman. The title or the position to which I have been put into is the Coordinator for Counterterrorism. This is not a line responsibility. I do not have the authority to order pieces and parts of the Department to do A or B.

My job is to make sure that people in the Department are adequately sharing information, are talking with one another, are building programs that key off of one another.

I think the best example of that is something that we call Silent Partner, which is an air security program, which brings about the cooperation of the Transportation Security Administration and the Customs and Border Protection Office where they each took authorities that they had individually and put them together in a working program that identifies people of interest who represent threats and who are traveling from overseas to the United States.

Keeping them off those planes or requiring that they have additional security screening before they get on planes coming to the United States, coordination, not authority to order anything to be done. We have begun working. I think it is a useful information sharing device that helps the Secretary do a better job.

Ms. RICHARDSON. Thank you. My second question is to my understanding, the Department of Homeland Security only screens against a terrorist watch list. A person who is not on the terrorist watch list, but prohibited from purchasing a gun, for example under the National Instant Criminal Background Check System, could be possibly cleared by DHS.

No. 1, could you clarify for me if that is true? Second of all, do you think that this is a security risk that may need to be addressed during the reauthorization? Do you think that there should be a coordination among the various background databases maintained by the Federal Government?

Mr. BEERS. Congresswoman, thank you very much for that question.

Ms. RICHARDSON. Yes. Thank you.

Mr. BEERS. The answer at the beginning of the question is no. We only check the terrorist database. That is by counsel's review of the drafting of the existing legislation. So someone who was only within the National criminal database would be permitted to come on to a facility.

If Congress so chooses, to alter that to allow criminal background checks, as are allowed for the Transportation Workers Identification Card, we would be pleased to receive that additional authority. Thank you.

Ms. RICHARDSON. Thank you, sir. I yield back.

Mr. LUNGREN. Thank you very much. Now the gentlelady from Texas is recognized, not a Member of the subcommittee, but a Member of the full committee. I recognize her for 5 minutes.

Ms. JACKSON LEE. Chairman Lungren, let me add my appreciation for the courtesies extended by you and to Ranking Member Clarke. Thank you very much, and as well, Chairman, let me congratulate you for your new leadership on this committee. To the Under Secretary, we have had the opportunity to engage before. So I am delighted to see you.

I live in the land of chemical plants, if you will. Many of you may have heard of the Enterprise Products accident that occurred just about 48 hours ago in that area surrounding Houston. As I understand the media has reported, one possibly lost. That may be an accident that had nothing to do with issues of cybersecurity, but it does show the volatility of the region and the area.

I believe that we live in a atmosphere of "Hackers International," some who do it for the thrill, and some who do it to do us harm. So I believe the urgency of this committee's work cannot be underestimated.

My question, is the issue of urgency on behalf of the Federal Government? The tools that you may need? I just saw one tool expressed, but we have been trying to work on the authority—or we gave the authority to DHS to regulate chemical security since 2006. In 2010, there were a minimum of 113 facilities in the Houston area that merited some level of security in the CFATS.

These inspection delays allow facilities to operate with less than optimal safety and security. So my question is on the sense of urgency, how much or how fast or how much faster can we go? Is there a sense of the negative impact that the cyber security violations of a bad intent may happen so much so that we can ramp up these inspections or that we can ask publicly now, today, for more tools to allow us to act on that sense of urgency? Mr. Secretary.

Mr. BEERS. Thank you for the question, Congresswoman. Let me assure you that the people who are working in this area, chemical security generally and the cyber sub-element thereof, are absolutely committed to the urgency of improving America's security.

Ms. JACKSON LEE. Can you go to what you need to increase these inspections or to act upon that sense of urgency?

Mr. BEERS. What we have done over the course of the last year, is come to a better appreciation and understanding of how to accelerate our ability to complete the inspection process and approve improved site security plans.

With respect to the cyber part of this, let me assure you that any cyber breach that occurs today in any of these chemical facilities or any other facility around the United States, if it is reported to US-CERT, the Computer Emergency Readiness Team, which is also part of NPPD, that organization will speedily provide a definition of what the problem looks like, a patch to cover that problem in a form of remediation that prevents that problem from occurring again.

But I also have to tell you we don't have all of the choices that hackers or nation-states might use to intrude into our cyberspace, neither we nor the rest of the U.S. Government. So some of it we can stop before it ever gets there as a firewall in your personal computer. Others of it, we have to see it in order to prevent it.

But if we see it, and this is important, if the chemical facilities report it to us, then we can help them fix it. More importantly, we can prevent it from occurring more broadly than the individual facility that was affected by it.

That is why the reporting process on cyber intrusions is so critically important to dealing with these problems. Hackers invent new ideas every day. If we don't see it and know about it, we can't fix it. Thank you.

Ms. JACKSON LEE. Thank you. Mr. Chairman, thank you, and I just want to welcome Mr. Sam Mannan, who comes from my neck of the woods and Director of the Mary Kay O'Connor—from Texas—Safety Center from Texas A&M University. Let me thank you, Mr. Chairman, I yield back.

Mr. LUNGREN. Thank you, Ms. Jackson Lee, and that will conclude our first panel.

Thank you very much, Mr. Under Secretary, for test—excuse me—for testifying. In our second panel, we have three distinguished witnesses. I think it will take just a moment to get them to the table and set it up. Then we will proceed with the second panel.

Once again, thank you very much, Mr. Secretary.

Mr. BEERS. Thank you the whole committee for the opportunity to testify. I stand ready to come back, either privately or publicly to any of you at any time.

Mr. LUNGREN. You can be assured we will take you up on that invitation.

Mr. BEERS. I wouldn't have made it if I didn't mean it.

[Laughter.]

Mr. LUNGREN. We are pleased to have three distinguished witnesses before us today on this important topic. Before I introduce them, let me remind the witnesses that their entire witness statements will appear in the record. We would ask that you might summarize within approximately 5 minutes.

We have, on our panel, Mr. Timothy Scott, Chief Security Office for the Dow Chemical Company, testifying on behalf of the American Chemistry Council. Welcome, Mr. Scott.

We have Dr. Sam Mannan, Regents Professor and Director of the Mary Kay O'Connor Process Safety Center at Texas A&M University. Thank you, Doctor, for being here.

We have Mr. George S. Hawkins, General Manager of the District of Columbia Water and Sewer Authority, and we thank you for being here, as well.

We will start with Mr. Scott. We would ask all three of you for your testimony in the order that I introduced you. Then after that we will proceed with our questions, each Member receiving a 5-minute period of time.

So Mr. Scott, thank you for being here, and we welcome your testimony.

STATEMENT OF TIMOTHY J. SCOTT, CHIEF SECURITY OFFICER, THE DOW CHEMICAL COMPANY, TESTIFYING ON BEHALF OF THE AMERICAN CHEMISTRY COUNCIL

Mr. SCOTT. Thank you. Chairman Lungren, Ranking Member Clarke and Ranking Member of the Full Committee Thompson, my name is Timothy Scott. I am the Chief Security Officer for the Dow Chemical Company. Dow is a member of the American Chemistry Council, and I am speaking today on behalf of Dow and the ACC.

I have three points for consideration in your effort to secure the Nation's chemical facilities. First, the chemical industry has taken aggressive action to improve our security posture voluntarily before DHS and CFATS and now with the on-going implementation of the standards.

Second, CFATS is in fact achieving its objectives to reduce the number of high-risk sites and lower the risk profile of the remaining high-risk sites. Third, we have gained momentum, and we need to maintain that momentum to complete the task at hand without further delays.

President Obama issued an Executive Order laying out regulatory principles that promote economic growth, innovation, competitiveness and job creation. They also call for regulations that promote predictability and use the best, most innovative, and least burdensome tools for achieving regulatory ends.

We couldn't agree more that we need a strong, sound, efficient regulation that will improve security but not hinder the ability of American companies to complete and create jobs.

Chemistry is the source of new technologies that would help create jobs in the future, drive economic growth and achieve the goals articulated by the President. The chemical industry employs nearly 800,000 people indirectly in high-paying, high-skilled jobs.

Safety and security are a top priority for Dow and the members of ACC. We have demonstrated this commitment throughout our history. We have implemented innovative process technologies in the design and construction of new facilities, by far the most efficient and logical time to achieve the maximum value in process safety improvements.

We have initiated voluntary programs for communities and local responders including training and information sharing. We have

improved security measures at our sites and throughout the distribution chain.

Our focus on security is clear and evident. Before DHS and CFATS, ACC members voluntarily adopted the Responsible Care Security Code, a comprehensive security program addressing physical, supply chain, and cybersecurity and requiring ACC members to perform an extensive assessment of their security risks.

Implementation of the code and the regular independent review are mandatory for membership in the ACC. The strength of the code is proven in its designation as a qualified antiterrorism technology under the Safety Act.

Dow along with ACC has been proactive in calling for a National regulatory program to consistently address security across the chemical sector. We strongly support a bipartisan legislation that gave DHS authority to regulate chemical security and create CFATS.

CFATS takes a well-designed risk-based approach, sets a high bar to performance standards and holds high-risk facilities accountable for meeting those standards. The program is predicated on the idea that performance standards are the regulatory tool of choice for ensuring security and its standards can be met by the facility selecting from a variety of layered security measures that best suit that specific facility.

This is clearly in line with the goal of the administration to establish the best, most innovative, and least burdensome tools for achieving regulatory ends. This drives facilities to consider all potential risk reduction options including potential process safety improvements when developing a site security plan.

After DHS approval, the result is a security plan uniquely and appropriately designed by the site to address the specific risk issues of that site. The bottom line is that the performance standards are met.

CFATS is yielding measurable results. DHS is screening chemical facilities across the country, identifying those deemed as high-risk. Many sites have already taken action and DHS reports the number of high-risk facilities has already been significantly reduced.

It is important that we don't lose this momentum. Dow and ACC support the permanent reauthorization of CFATS. We believe it is a success and meets the regulatory principles outlined by the President.

We have a solid foundation to address chemical security while providing industry the flexibility needed to remain competitive and a vital contributor to the Nation's economy.

We believe changes to CFATS that require implementation or enhance scrutiny of any single-risk reduction option such as the mandatory consideration or implementation of inherently safer technology are unnecessary and would be overly burdensome to industry and to DHS.

Dow and ACC do not support mandatory consideration or mandatory implementation of IST or any other single-risk reduction tool. Dow, along with the members of the ACC, are committed to continuing our aggressive risk-based approach to safeguarding Amer-

ica's chemical facilities. We look forward to working with DHS and this committee. Thank you.

[The statement of Mr. Scott follows:]

PREPARED STATEMENT OF TIMOTHY J. SCOTT

FEBRUARY 11, 2011

Chairman Lungren, Ranking Member Clarke and Members of the committee, I'm Timothy Scott, Chief Security Officer for the Dow Chemical Company. Dow is a member of the American Chemistry Council, and I'm speaking today on behalf of Dow and our industry association.

I would like to make three key points in my statement today that I think will demonstrate that we have a strong foundation in place to build from when it comes to securing the Nation's chemical facilities:

First—The chemical industry is critical to our National economy as well as the quality of life of our people. We recognize the historical and current risks to our industry and have taken aggressive action to improve our security posture—voluntarily well before the creation of DHS and the Chemical Facility Anti-Terrorism Standards (CFATS) and continuing now with the on-going implementation of CFATS.

Second—The implementation of CFATS to date is demonstrably achieving its objectives to reduce the number of high-risk sites and lower the risk profile of remaining high-risk sites.

And third—and most important—we need to continue on this successful path, maintain the momentum we've achieved and complete the task at hand without further delays or calls for change that would result in slowing the progress being made on chemical facility security by both DHS and the chemical industry.

Last month, President Obama issued an Executive Order which lays out a set of regulatory principles. These principles call for a system that promotes "economic growth, innovation, competitiveness and job creation." They also call for regulations that promote predictability, and use the "best, most innovative and least burdensome tools for achieving regulatory ends."

We couldn't agree more that we need strong, sound, efficient regulations that will not hinder the ability of American companies to compete and create jobs.

This is particularly important for an industry like ours. Chemistry is the source of many of the new technologies that will help create jobs in the future, drive economic growth and achieve the goals articulated by the President during his State of the Union including clean energy; improved infrastructure; efficient transportation options; medical advancements that bring down the cost of health care; and even a strong defense.

And the Business of Chemistry employs nearly 800,000 people directly in high-paying, high-skill jobs. These are the kind of jobs that not only put food on the table, but boost consumer spending, send kids to college, allow families to own homes, and save for retirement.

Because of our critical role in the economy and our responsibility to our employees, communities, and shareholders—safety and security continues to be a top priority for Dow and the members of ACC. And, we have actively demonstrated the commitment to security. Throughout our history, the chemical industry has implemented innovative processes and technologies to enhance safety. Starting from the design and construction phase of new facilities—by far the most efficient and logical time to achieve the maximum value and process safety improvements—to measures that are implemented throughout the distribution chain, our focus on security is clear and evident.

In 2001, ACC members voluntarily adopted an aggressive security program—already in draft form before 9/11—that became the Responsible Carer Security Code (RCSC). The Security Code is a comprehensive security program that addresses both physical and cybersecurity vulnerabilities, and requires ACC members to perform an extensive assessment of its security risks. Implementation of the Code and regular independent review is mandatory for membership in the ACC. In fact, the strength of the Code has been recognized by DHS and is designated as a qualified anti-terrorism technology under the Safety Act.

Recognizing the important role of Government to address the risk of and thwart terrorism, Dow, along with ACC, has been proactive in our support for a National regulatory program to address security across the chemical sector. We strongly supported the bi-partisan legislation that gave DHS the authority to regulate chemical security and create the Chemical Facility Anti-Terrorism Standards (CFATS).

CFATS is by far the most robust, comprehensive, and demanding chemical security regulatory program to date. It takes a well-designed risk-based approach, sets a high bar through performance-based standards, and holds high-risk facilities accountable for meeting those standards.

The accountability within the program drives facilities to consider all potential risk-reduction options, including potential process safety improvements, when developing a site security plan. Just as important, it leaves the decision of how to meet the standards to the site's discretion and subject to DHS approval of the site security plan. The result is a security plan approved by DHS that is uniquely and appropriately designed by the site to address the specific risk issues of each individual facility and meet the performance standards of DHS.

While still in the initial implementation stages, these tough regulations are yielding measurable results to manage or in some cases eliminate security risks. DHS has screened chemical facilities across the country and identified all of the facilities it deems are a "high-risk" for a potential terrorist attack. These facilities have been notified of their regulatory obligations and many have already taken action. For example, DHS reports the number of "high-risk" facilities has already been reduced by more than 2,000.

It's important that we don't lose this momentum. Dow and ACC support the permanent reauthorization of CFATS because we believe it is a successful program that meets the regulatory principles outlined by the President. The program has laid a solid foundation to address security at chemical facilities while at the same time providing industry the flexibility it needs to remain competitive and provide the innovative products that are vital to the Nation's economy.

We believe any changes to the program that would require implementation or even enhanced scrutiny of any single risk-reduction option that is available to industry, such as the mandatory consideration or implementation of inherently safer technology (or "IST"), are unnecessary. The program is predicated on the idea that performance standards are the regulatory tool of choice for ensuring security, as they can be met by the facility selecting from a variety of layered security measures that best suit that specific facility. Allowing for the imposition of a single type of risk-mitigation measure would only serve to undermine the success of the program to date and flies in the face of the goal of the administration to establish the "best, most innovative, and least burdensome tools for achieving regulatory ends." Such a change at this critical juncture would add an unacceptable degree of uncertainty to a program that is maturing, and place an unjustifiably large burden on chemical facilities and DHS. Accordingly, Dow and ACC do not support mandatory consideration or mandatory implementation of IST or any other single risk reduction tool.

As I have outlined in my testimony, Dow along with the members of the ACC are committed to continuing an aggressive approach in safeguarding America's chemical facilities. It is in this spirit that we look forward to working alongside DHS and this committee. Thank you for this opportunity and I am happy to answer any questions at the appropriate time.

Mr. LUNGREN. Thank you very much.
Five minutes, Dr. Mannan.

**STATEMENT OF M. SAM MANNAN, PHD, PE, CSP, REGENTS
PROFESSOR AND DIRECTOR, MARY KAY O'CONNOR PROC-
ESS SAFETY CENTER, TEXAS A&M UNIVERSITY SYSTEM**

Mr. MANNAN. Thank you, Chairman Lungren, Ranking Member Clarke, Ranking Member of the subcommittee, Mr. Thompson, Congresswoman Sheila Jackson Lee, thank you for recognizing me earlier and other distinguished Members of this subcommittee. My name is Samuel Mannan, and I am the director for the Mary Kay O'Connor Process Safety Center, a holder of the T. Michael O'Connor Chair I in chemical engineering and Regents Professor at Texas A&M University.

The center seeks to develop safer processes, equipment, procedures, and management strategies that will minimize losses in the process industry. The opinions presented during this hearing represent my personal position on these issues.

Chemical security and protection of the chemical infrastructure is of extreme importance to our Nation. I am pleased that the U.S. Congress is continuing to pay attention to issues related to chemical facility antiterrorism.

Hazardous materials can be grouped into three tiers of vulnerability categories. The first category includes stationary facilities that are members of major industry associations. Even though these facilities have large inventories of hazardous materials and are quite visible, they are the best prepared against attacks because of voluntary programs that have been developed and implemented.

The second tier of vulnerability category includes smaller and medium-size facilities that manufacture or use chemicals but may or may not be members of any industry associations. These facilities are less visible but are also in general less prepared and more widely distributed.

Finally, the third category of vulnerability includes all hazardous materials that are in transit throughout the United States. In addition to being present almost anywhere in the United States at any given time, this category represents high visibility and the highest vulnerability.

I will limit the rest of my oral testimony to some key issues with regard to inherent safety. It must be understood that determination of inherent safety options is a complex process and not an off-the-shelf technology.

In some cases, a seemingly clear choice with regard to inherent safety may create some unintended consequences. Issues such as risk migration, risk transfer, and/or risk accumulation should be evaluated whenever an inherent safety option is considered.

With regard to chemical facility antiterrorism standards, I have the following specific comments. No. 1, the U.S. Congress must give the Department of Homeland Security permanent and continued authority to regulate chemical security in the United States.

No. 2, the use of a risk-based approach and risk tiering in evaluating the vulnerability of any facility is a good approach.

No. 3, the Department of Homeland Security does not currently have appropriate and adequate expertise to implement and enforce inherent safety.

No. 4, despite a significant amount of work in the area of inherent safety design and technology, it still remains a very complex task to determine on a case-to-case basis what is an inherent safety technology or approach. In many cases, a seemingly inherent safety approach may result in unintended consequences, risk transfer, and/or risk accumulation.

No. 5, I strongly believe that science should precede regulations. I do not believe that science currently exists to quantify inherent safety.

No. 6, the current risk tiering of stationary sources inherently encourages the use of IST. For example, a facility that is in Tier 1 would consider all IST options if they move the facility to Tier 3 or Tier 4.

So it could be argued that consideration of IST options is already part of the market-driven, incentive-based approach within the current CFATS legislation.

In fact, I would suggest that if facilities under the current CFATS legislation use IST approaches to change their tier designation, they should be required to prove that overall risk has been reduced, that unintended consequences have not been created, that risk transfer and a risk accumulation has not occurred, and that actions taken or proposed have not just simply resulted in the departure of industry from one area to another.

In summary, I applaud the U.S. Congress for providing leadership in this important area of chemical security. Inherently safer technology is an objective that should continually be pursued but must always be based on sound science as well as sound risk assessment and management strategies.

Mandating the evaluation and/or implementation of inherent safety options must be based on good science. Before such steps can be taken, important issues must be resolved such as generally accepted understanding of the definition of inherently safer technology, methods for quantification of inherent safety, and methods for evaluation of inherent safety options.

I do not believe that the current know-how and science exists to adequately define and quantify any of these issues. Thank you for inviting me to present my opinions, and I will be happy to answer any questions.

[The statement of Mr. Mannan follows:]

STATEMENT OF M. SAM MANNAN

FEBRUARY 11, 2011

INTRODUCTION

My name is M. Sam Mannan and I hold a BS, MS, and PhD in chemical engineering. I am a registered professional engineer in the States of Louisiana and Texas and I am a certified safety professional. I am a Fellow of the American Institute of Chemical Engineers and a member of the American Society of Safety Engineers, the International Institute of Ammonia Refrigeration, and the National Fire Protection Association. I am Director of the Mary Kay O'Connor Process Safety Center, holder of the T. Michael O'Connor Chair I in Chemical Engineering, and Regents Professor of Chemical Engineering at Texas A&M University. The Center seeks to develop safer processes, equipment, procedures, and management strategies that will minimize losses in the process industry. My area of expertise within the chemical engineering discipline is process safety. I teach process safety engineering both at the undergraduate and graduate level. I also teach continuing education courses on process safety and other specialty process safety courses in the United States and overseas. My research and practice is primarily in the area of process safety and related subjects. The opinions presented in this document represent my personal position on these issues. These opinions are based on my education, experience, research, and training.

Chemical security and protection of the chemical infrastructure is of extreme importance to our Nation, and I am pleased that the U.S. Congress is continuing to pay attention to issues relating to Chemical Facility Anti-Terrorism. I have provided testimony previously on this subject to the U.S. House of Representatives Subcommittee on Transportation Security and Infrastructure Protection of the Committee on Homeland Security, on December 12, 2007 and the U.S. Senate Homeland Security and Governmental Affairs Committee on March 3, 2010. Since then, I have continued to study various issues related to inherent safety and the implementation of inherent safety. While we have gained additional insight about inherent safety issues, my opinions remain much the same as then.

BACKGROUND

Hazardous materials can be grouped into three tiers of vulnerability categories. The first category includes the stationary facilities that are members of major industry associations. Even though these facilities have large inventories of hazardous

materials and are quite visible, they are the best prepared against attack because of voluntary programs that have been developed and implemented. The second tier of vulnerability category includes smaller and medium-sized facilities that manufacture or use chemicals but may or may not be members of any industry associations. These facilities are less visible, but are also, in general, less prepared and more widely distributed. Finally, the third category of vulnerability includes all hazardous materials that are in transit (by whatever means) throughout the United States. In addition to being present almost anywhere in the United States at any given time, this category also represents high visibility and the highest vulnerability. It could also be argued that this category is the least prepared to deal with intentionally caused catastrophic scenarios.

Some pertinent subjects of interest with regard to attacks on the chemical infrastructure are: Active protection measures; passive protection measures; vulnerability analyses, response, and recovery plans; and long-term needs and priorities. Active protection measures include increased security, limited access to facilities, and background checks. Examples of passive protection measures include development of exclusion areas and process and engineering measures.

Vulnerability analysis, response, and recovery plans are needed not only to help devise the prevention and protection plans, but also to develop the response and recovery plans. In this respect, it must be mentioned that most of the large, multi-national facilities that are members of major industry associations have voluntarily conducted some form of vulnerability analysis. What is not clear is whether these analyses have been used to integrate planning for response and recovery efforts in coordination with local agencies and the public. One very stark lesson from the 9/11 events is that the “first” first-responders are usually members of the public. Additionally, area- and region-specific vulnerability analysis and assessment of infrastructure availability for response and recovery have not been conducted. Finally, a National vulnerability analysis and assessment of infrastructure availability for response and recovery is a critical need.

Whether natural or man-made, disasters will continue to happen. However, as we have seen with the 9/11 events, Hurricanes Katrina and Rita, and chemical incidents such as the Bhopal disaster, planning and response is crucial in being able to reduce the consequences and to recover from the disaster more rapidly. In this regard, it is essential to conduct vulnerability analysis, response, and recovery planning at the following three levels:

- Plant-specific vulnerability analysis and assessment of infrastructure availability and preparedness for response and recovery is needed. As mentioned earlier, most of the large multi-national facilities that belong to prominent industry associations have voluntarily conducted some form of vulnerability analysis. What is not clear is whether these analyses have been used to integrate planning for response and recovery efforts in coordination with local agencies and the public.
- Area- and region-specific vulnerability analysis and assessment of infrastructure availability for response and recovery should be conducted. Each area- and region-specific analysis should include an assessment and planning for evacuation and shelters.
- National vulnerability analysis and assessment of infrastructure availability for response and recovery is critically needed. In doing this National analysis, impact on international issues and criteria should also be considered.

Inherent safety options can be considered; however, it must be understood that determination of inherent safety options is a “complex process” and not an “off-the-shelf technology”. We must be aware of the differences in implementing inherent safety options for existing plants, as compared to new plants. Also, in some cases, a seemingly clear choice with regard to inherent safety may create some undesired and unintended consequences. Issues such as risk migration, reduction of overall risk, and practical risk reduction should be evaluated whenever an inherent safety option is considered. Such an approach should be based upon the triple-pronged philosophy: Evaluation and assessment, prevention and planning, and response and recovery. Planning and preparedness is required for all three areas. Only through a comprehensive, uniform, and risk-based approach can we protect the people and communities of our Nation as well as protect our Nation’s critical chemical infrastructure.

LONG-TERM GOALS AND PRIORITIES

Long-term goals and priorities to prevent and/or reduce the consequences of intentional catastrophic scenarios require clear thinking and hard work. While no one

would argue that making hazardous materials less attractive as a target should be a goal that all stakeholders should accept, differences arise in how we realize that goal.

Another long-term goal is to develop technology and know-how with regard to resilient engineered systems and terrorism-resistant plants. In this respect, research and technological advances are needed in many areas, such as bio-chemical detection, sensors, and self-healing materials. Protection of the chemical infrastructure, like many other challenges, requires the commitment and effort of all stakeholders.

I feel very strongly that science should precede regulations and standards. With regard to science and technology investments, many initiatives have been proposed and are being implemented. However, some important additional initiatives that should also be considered are given below:

1. The fact is that the chemical infrastructure and all components including the individual sites, supply, and delivery systems were never built with terrorism in mind. Research must be conducted to determine how we might have designed and built the chemical plants and the infrastructure had we considered these threats. The ultimate goal for such research would be two-pronged. First, determine options for what can be feasibly implemented for existing plants. Second, if necessary, prescribe new standards and procedures for new plants.
2. Research investments should be made on advanced transportation risk assessment methods. Before transportation of any hazardous materials, a transportation risk assessment should be conducted using available information and methodology, as well as time-specific data that may be available.
3. Additional science and technology investments that should be considered are:
 - Development of incident databases and lessons learned. This knowledge base could then be used to improve planning, response capability, and infrastructure changes. Recent experience in this regard is the improvement in planning and response for the Hurricane Rita from lessons learned from the Hurricane Katrina.
 - Research should be conducted on decision-making, particularly under stress, and how management systems can be improved.
 - Research on inherent safety options and technologies. This type of research should be combined with systems life-cycle analysis and review of practical risk reduction. In other words, implementation of inherent safety options should not be allowed to create other unintended consequences, risk migration, or risk accumulation. While transportation is outside the scope of the Chemical Facility Antiterrorism Standards (CFATS), it must be included in vulnerability assessments to avoid transfer of facility risks to transportation risks.
 - Basic and fundamental research is also needed on design of resilient engineered systems. For example, if the collapse of the World Trade Center towers could have been extended by any amount of time, additional lives could likely have been saved.
 - Basic and fundamental research is also needed on resilient and fail-safe control systems.
 - Long-term research is also needed in the area of self-healing materials and biomimetics.

SPECIFIC COMMENTS RELEVANT TO “PREVENTING CHEMICAL TERRORISM: BUILDING A FOUNDATION OF SECURITY AT OUR NATION’S CHEMICAL FACILITIES”

With regard to the Chemical Facility Antiterrorism Standards, I have the following specific comments:

1. The U.S. Congress must give the Department of Homeland Security permanent and continuing authority to regulate chemical security in the United States. While many facilities are voluntarily taking appropriate measures, I am concerned that many are not. A regulation that creates a minimum and level playing field is very important.
2. The use of a risk-based approach and risk-tiering in evaluating the vulnerability of any facility is a good approach.
3. The Department of Homeland Security does not currently have appropriate and adequate expertise to implement and enforce inherent safety.
4. With regard to mandated consideration and/or implementation of inherent safety in chemical facility antiterrorism regulations, I have the following comments:

- a. Despite a significant amount of work in the area of inherent safety design and technology, it still remains a very complex task to determine on a case-to-case basis what is an inherently safer technology or approach. In many cases, a seemingly inherent safety approach may result in unintended consequences, risk transfer, and/or risk accumulation.
- b. Based on current know-how and science, there does not exist any widely accepted scientific process by which to require (by legislation or regulation) a mandatory assessment of “inherently safer technology,” at a chemical facility. As a result, there are dangers associated with mandating a specific assessment model or requiring an overly burdensome assessment regime.
- c. There are many methods available to the industry for potentially reducing risk and vulnerability. Vulnerability assessments should consider the feasibility of all methods for improving security to determine the method to achieve the optimum balance of cost effectiveness and vulnerability reduction.
- d. As I stated earlier, science should precede regulations. I do not believe that the science currently exists to quantify inherent safety. Regulations or any actions taken as a result of regulations should not create unintended and unwanted consequences. An example in this context is the substitution of hydrogen fluoride (HF) with sulfuric acid (H_2SO_4) for refinery alkylation processes. While it is true that HF is more toxic than H_2SO_4 , the amount of H_2SO_4 needed to do the same amount of processing is 100–140 times or more than HF. Thus changing from HF to H_2SO_4 would require large storage facilities and more transportation. In fact, changing from HF to H_2SO_4 may provide more opportunities for a terrorist attack. On the other hand, a well-managed plant with a smaller amount of HF and appropriate safety protective systems may represent a lower overall risk.
- e. An example of risk transfer as well as risk accumulation is the replacement of chlorine with sodium hypochlorite for water treatment processes. The sodium hypochlorite itself is manufactured from chlorine and thus the risk is transferred somewhere else. In fact, if all water treatment is converted to sodium hypochlorite processes, it would lead to risk accumulation where a mega-plant would have to be constructed somewhere with large quantities of chlorine representing a high-value target. Thus, while conversion to sodium hypochlorite may be advisable in some cases, but not in all cases. The determination should be made on a case-by-case basis depending on case-specific information and life-cycle risk analysis.
- f. In the case of conversion from chlorine to sodium hypochlorite, there could also be unintended consequences. Sodium hypochlorite is known to be unstable and can decompose into chlorates which subsequently convert to perchlorates. Depending on the duration and conditions of storage of sodium hypochlorite, the formation of perchlorates can occur. This presents an obstacle when this alternative is introduced as an inherently safer technology than that of chlorine since perchlorates are toxic and have been noted to induce thyroid problems from extended exposure. Moreover, perchlorates have been found in more than 90% of sodium hypochlorite samples, and its concentration is believed to increase with age. Contamination of drinking water during its treatment is the most likely way of entering the human body. However, it has also been found that plants can absorb perchlorates without adverse effects to themselves. The perchlorates are then stored may be passed along in the food chain.¹

A study performed by Orica (an Australian company) found that the number of incidents involving chlorine gas formed by the inadvertent mixing of acid with sodium hypochlorite was larger than those directly from chlorine gas alone.² This fact, along with the hazardous properties of the chlorates formed by improper storage of sodium hypochlorite shows that this option cannot be readily listed as an inherently safer alternative for chlorine and that its risks cannot be overlooked.
- g. When inherent safety options are considered, we must understand and account for the challenges and difficulties in implementing inherently safer technology and options. The first challenge is simply to measure the degree of inherent safety in a way that allows comparisons of alternative designs, which may or may not increase safety or may simply redistribute the risk. The second is that because inherent safety is an intrinsic feature of the de-

¹http://www.watertechnology.com/news.asp?N_ID=70952.

²http://www.wioa.org.au/conference_papers/04/paper2.htm.

sign, it is best implemented early in the design of a process plant, while the United States has a huge base of installed process plants and little new construction. Finally, in developing inherently safer technologies, there are significant technical challenges that require research and development efforts. These challenges make regulation of inherent safety very difficult. We believe that a coordinated long-term research and development effort involving government, industry, and academia is essential to develop and implement inherently safer technologies. A similar collaborative approach has shown success in related areas such as green chemistry, energy conservation, and sustainable development.

- h. Instead of prescriptive requirements for inherently safer technology and approaches, facilities should be allowed the flexibility of achieving a manageable level of risk using a combination of safety and security options. For example, nuclear facilities have very high-hazard materials, but they protect their site and the public with a combination of multiple layers of security and safety protective features. All methods of reducing vulnerability should be considered on a case-by-case basis, and the implementation of any one particular method should not take or appear to take precedence over the others.
- i. Over the past 15–20 years, and more so after 9/11, consideration of Inherently Safer Technology (IST) options and approaches has effectively become part of industry standards, with the experts and persons with know-how assessing and implementing inherently safer options, without prescriptive regulations that carry risks (both as trumping other tools or potentially shifting risk). A better approach for applying IST in security is by allowing the companies to assess IST as part of their overall safety, security, and environmental operations and therefore, cannot be prescriptive. In fact, it seems that the current risk tiering of stationary sources inherently encourages the use of IST. For example, a facility that is in Tier 1 would consider all IST options if they could move the facility to Tier 3 or Tier 4. So, it could be argued that consideration of IST options is part of the market-driven incentive-based approach within the current CFATS legislation. In fact, when facilities use IST approaches to change their tier designation, they should be required to prove that:
 - Overall risk has been reduced;
 - That unintended consequences have not been created;
 - That risk transfer and/or risk accumulation has not occurred;
 - That the actions taken or proposed have not just simply resulted in the departure of industry from one area to another.
5. Cost-benefit analysis of inherent safety options is another very important and pertinent issue that should be a significant part of any decision-making process.
6. Currently there does not exist a generally accepted understanding on the definition of “inherently safer technology.” Given that background, if regulations require all plants to be “inherently safe,” there might be a tendency to broaden the definition of “inherently safe,” so that almost everything fits the definition.
7. Before adopting any regulatory framework requiring the evaluation and/or implementation of inherently safer technology, significant research questions must be answered to reach a universally accepted definition of “inherently safer technology.” Research in critical areas such as system reliability and resilience must also provide information to help develop appropriate guidance for facilities, both new and old, regarding methods to assess the costs, benefits, and potential risks of process changes at their facilities and throughout the supply chain and market.

SUMMARY

I applaud the U.S. Congress for providing leadership in this important area of chemical security. It is clear that many companies are taking reasonable and responsible steps in chemical security, including the consideration of inherent safety options. Inherently safer technology is an objective that should continually be pursued, but must always be based upon sound science as well as sound risk assessment and management principles. Mandating the evaluation and/or implementation of inherent safety options must be based on good science. Before such steps can be taken, important issues must be resolved such as a generally accepted understanding on the definition of “inherently safer technology,” methods for quantification of inherent safety, and methods for evaluation of inherent safety options. I do

not believe that current know-how and science exists to adequately define and quantify any of these issues.

Requirements for inherently safer technology should be based upon good science aimed at making the industry secure, avoid over-regulation, and create a level playing field. U.S. facilities could be at a competitive disadvantage if required to implement unproven technologies simply to meet a regulator's position that such technology is more inherently safe.

I am encouraged by the leadership of Congress and by continued efforts to seek expertise and opinion from all stakeholders.

Mr. LUNGREN. Thank you very much, Doctor.

Now we are pleased to hear from Mr. George Hawkins.

**STATEMENT OF GEORGE S. HAWKINS, GENERAL MANAGER,
DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY**

Mr. HAWKINS. Good morning, Chairman Lungren, Ranking Member Clarke, and Ranking Committee Member Thompson. My name is George Hawkins. I am the general manager of DC Water, your water and wastewater authority here for Washington, DC.

By way of a brief background, DC Water provides drinking water services to every enterprise in the District of Columbia and several in northern Virginia including the National airport and the Pentagon.

Once that water is used and we get it back from you to cleanse it prior to putting it into the Potomac River, we treat wastewater from Montgomery County, Prince George's County, Fairfax, Loudon, and Arlington.

It is the only enterprise in the United States that crosses two State boundaries and the District of Columbia, and we operate in the largest advanced wastewater treatment plant in the world which you are welcome to come visit. I guarantee you will be fascinated and be astonished at the set level of technology that we employ to clean water before it is put into our rivers.

I am here today to tell the story of the change that we made at this facility which is at the very southern tip of Washington, DC. It is the last facility you see on 295 before you cross into Maryland and then go across the bridge to Virginia, 162 acres treating over 300 million gallons of wastewater every single day.

Before 9/11 we were using gaseous chlorine and sodium dioxide to treat wastewater both in the odor reduction process up-front and then prior to effluent going to the Potomac. These chemicals are inherently dangerous on both ends, both gaseous chlorine and sulfur dioxide, I am sorry, are both dangerous, quite dangerous, were brought in on 90-ton rail cars.

These rail cars went through CSX lines. There is one actually not far here from the capital you can—

Mr. LUNGREN. Could you just refrain for a moment? I would ask those people in the back to please put whatever demonstration it is that they have down. That is a violation of the rules of the House during procedures. So if you would please do that, I would appreciate it. If you don't, you will be asked to be removed. You will be removed.

Mr. Hawkins.

Mr. HAWKINS. Yes. Prior to 9/11, we had six—

Mr. LUNGREN. If it happens again they will be removed.

Mr. HAWKINS [continuing]. Rail cars on our facility, two of which were 90-ton rail cars, two with gaseous chlorine, two with sulfur dioxide and two that were being unloaded. After that event, DC WASA, as it was called at the time, initiated its own process to remove these chemicals because of the threat.

I must say it has been a decision that has received more support from every foot soldier up to the board and our customers of almost any decision we have made at the authority.

Within 20 days of 9/11, we had a plan for how to remove these chemicals from the plant. Within 60 days, we had spent \$600,000 to actually temporarily figure out a solution to remove gaseous chlorine and sulfur dioxide. In 2 years, we had fully and permanently made the transformation to using sodium hydrochloride and liquid sodium bisulfite. That was at the cost of \$16.4 million.

We had members of our security team, our facilities team, process management, engineering, the entire organization, round-the-clock training, so that within a short period of time we had eliminated this threat from our facility.

But those tanker cars that had to get to our facility had to go through Naval Research Center, had to go through Boeing Airport space and this city in order to deliver those chemicals to our site. So it was an excellent decision.

Of note, we were planning to make this change prior to 9/11. It was already in our planning process. But the threat, and staff has said they could see the smoke from the Pentagon from our facility, elevated the importance and from the top to the bottom of the organization we implemented this step.

As an operating cost, it is more expensive to make this change. Prior to this change, gaseous chlorine and the chemicals we were using cost us about \$800,000 a year. Currently, the alternative chemicals which are much safer cost slightly more than \$2 million a year. So it is not only the capital cost that were necessary but an on-going operating increase.

We presented this information to our customers and have received wholesale support for this change given the security and safety it offers everyone we serve.

We have been asked about whether and how we would regulate or change anything that has been done. All I can say for what we have done for our facilities, one of the best decisions we have made, we would make it again, and we regularly advise our compatriots about why and how we did the decision.

I don't feel qualified to know whether the decision we made is applicable to every facility of every size and every location across the country. Whether there are other circumstances that may differ is unclear to us. For us, it was a clear decision.

Secondly, how we should be regulated? We are carefully regulated by OSHA and by U.S. EPA. We have done vulnerability assessments. We are doing a second vulnerability assessment now. So we consider ourselves to be carefully and faithfully regulated currently. We will continue to do so. We will satisfy all regulations that are imposed upon us but believe we are following safe practices to date.

We are glad to serve you both generally and specifically and are glad to answer questions. Thank you.

[The statement of Mr. Hawkins follows:]

PREPARED STATEMENT OF GEORGE S. HAWKINS

Good afternoon Chairman Lungren, Ranking Member Clarke and Members of the Subcommittee on Cybersecurity, Infrastructure Protection, and Security Technologies. My name is George Hawkins and I am the General Manager of the District of Columbia Water and Sewer Authority—also known simply as DC Water. I'd like to thank you for inviting me to testify today on the circumstances surrounding the decision to have the Blue Plains Wastewater Treatment Facility voluntarily switch from using a chlorine in the treatment of wastewater to a potentially safer alternative.

INTRODUCTION

First, by way of background, DC Water purchases treated drinking water at wholesale from our Federal partner, the Washington Aqueduct, which disinfects our drinking water supply and is a unit of the U.S. Army Corps of Engineers. We then deliver this water through our pumping stations and pipes to our retail customers in the District of Columbia—including this very building. We also operate the world's largest advanced wastewater treatment plant, at Blue Plains, for the benefit of our customers in the District and several suburban jurisdictions. We serve more than 2 million customers in the metropolitan Washington, DC, area. The disinfection of wastewater provides critical public health protection. Disinfection destroys bacteria and viruses, helping to protect ecosystems and prevent waterborne disease. The most commonly used disinfectant for both drinking water and wastewater treatment is chlorine. Its effectiveness against a wide spectrum of disease-causing organisms, its relatively low cost, and high reliability contribute to its popularity. Chlorine can be applied to water directly as a gas, or through the use of chlorinating chemicals. A number of alternative disinfectants, such as chlorine dioxide, chloramines, ozone, and ultraviolet radiation, are also used to varying degrees. Each disinfection technology has unique benefits, limitations, and costs. Individual water system operators must weigh these trade-offs and choose disinfection methods based on local water quality conditions, climate, physical limitation of plant location, cost, compliance with the Clean Water Act (CWA) and the needs and resources of the communities they serve. Based on this wide variety of factors, use of alternative chemicals may not be possible for all wastewater utilities.

My colleagues throughout the water sector are currently examining this issue very closely, not only to protect the populations they serve but also to protect their most critical asset—their workforce. In 2009, the National Association of Clean Water Agencies (NACWA) conducted an informal survey of its membership which shows that clean water agencies are using other treatment technologies when local factors enable them to do so. In fact, 66% of survey respondents indicated they no longer use gaseous chlorine in their disinfection process. Of the 33% that continue to utilize gaseous chlorine, 20% planned to switch to another disinfectant within a 1- to 2-year time frame. Keeping in mind that NACWA members account for about 80% of the treated sewerage stream in the United States you can see utilities switching to other treatments when possible. Given this information we do not believe a Federal mandate is necessary, rather we believe that decisions regarding treatment technologies should reside within the local community.

BLUE PLAINS

The Blue Plains Wastewater Treatment Facility sits on the Potomac River in southwest Washington, DC. Like most facilities before 9/11, Blue Plains used chlorine gas and other hazardous compounds in its treatment process. In fact, when the plane hit the Pentagon on 9/11, Blue Plains had six 90-ton railcars on site storing dangerous chemicals just 4 miles away from the Capitol. Three were filled with chlorine gas, one was filled with sulfur dioxide, and two railcars were being unloaded; each filled with chlorine gas and sulfur dioxide.

Not only were these chemicals a threat when in storage on the site, but they also created a hazard in transit as they were hauled by rail through downtown District of Columbia on their way to Blue Plains. To get a sense of the exposure they represented, consider that in January 2005, when a freight train pulling three tankers full of liquidized chlorine and one tanker of sodium hydroxide slammed into a parked train in Graniteville, South Carolina, it released 11,500 gallons of chlorine gas. Nine people died and at least 529 were injured. That was without any malicious intent and in a rural location.

Chlorine gas was infamous during trench warfare in World War I. It irritates the eyes, nose, and skin in small amounts, but in concentrated form, the yellowish green gas causes the lungs to fill with liquid, drowning the victims to death.

Prior to 9/11, personnel at Blue Plains were concerned over the hazardous nature of the disinfecting chemicals and the potential for accidental release. A Capital Project was introduced into the 10-year Capital Planning Cycle to replace chlorine and sulfur dioxide gases with safer liquid chemicals such as sodium hypochlorite (bleach) and sodium bisulfite. Liquid bleach is much safer than chlorine gas, being 6 percent stronger than household bleach and easy to contain if spilled. After 9/11, facility personnel at Blue Plains were concerned over the prospect of terrorism. We evaluated our situation and decided it would make more sense for our location in the Nation's capital to fast-track the switch over to liquid chemicals that are much safer. The solution was to switch to using sodium hypochlorite for the purpose of disinfection and to the use of liquid sodium bisulfite for de-chlorination of residual chlorine in the waters being discharged to the river. A Process Safety Management (PSM) Committee was formed, including safety, engineering, facilities and maintenance personnel to ensure that chlorination and dechlorination systems were safe as possible until they were finally decommissioned. We completed this conversion in two phases. In the first phase, a temporary liquid disinfection/dechlorination system was designed, installed, and made operational within 60 days of 9/11 allowing removal of the chemical rail cars from site. We simultaneously fast-tracked the Capital Project for the installation of the permanent liquid disinfection/dechlorination system.

COSTS

As discussed, we first built a temporary facility and purchased additional storage tanks for the liquid bleach and bisulfite, as well as pumps and piping to deliver the chemicals to the wastewater in the right dose and at the correct locations while we pursued construction of the more capital-intensive permanent conversion. By October 2003, we had finished the permanent conversion to our plant. The process of converting the old plant was costly; it required adding more storage tanks, pumps, piping, and instrumentation than had been needed before. We also had to build additional storage facilities for the liquid bleach and sodium bisulfate—used for dechlorination. The total cost was \$16.4 million, including the installation of the temporary facilities.

Operating costs are also now higher as well. The driving factor is that liquid bleach is much more expensive than chlorine gas. The annual cost of purchasing chemicals has increased from approximately \$800,000 annually for gas chlorine to over \$2 million annual average for sodium hypochlorite.

In our case, the switch effectively removed the threat of harmful exposure for 1.7 million people living near the Blue Plains plant. There is no longer any risk to the public since the conversion. Second, the switch from chlorine gas also simplified the plant's operations in several ways. For example, because liquid bleach is much safer to handle, the switch has limited the amount of training that employees need and reduced accidents. Last, the threat of a terrorist attack has diminished. At one time we routinely stored five or six tankers on site. Had a catastrophic leak occurred, this could have caused many fatalities and injuries within a 10-mile radius.

REGULATION

Since the enactment of the Public Health Protection and Bioterrorism Preparedness and Response Act of 2002, the Environmental Protection Agency has regulated the physical security of the Nation's drinking water systems through Section 1433 of the Safe Drinking Water Act (SDWA). Under this law, drinking water systems serving more than 3,300 people were required to prepare vulnerability assessments detailing risks related to possible terrorist attacks, and emergency response plans outlining procedures for responding for such an attack. EPA has reported that virtually all covered drinking water systems are in compliance with these requirements, and in 2006 Congress exempted the water sector from additional physical security regulation through the Department of Homeland Security's Chemical Facilities Anti-Terrorism Standards (CFATS).

Given the importance of coordinating drinking water security rules with the public health requirements of SDWA, most drinking water systems believe that their exemption from CFATS is appropriate, and that EPA should continue oversight of any new or revised drinking water security program. Similarly, any Federal security regulations imposed on the wastewater and water sector should come through a comparable EPA program rather than CFATS. A regulatory approach that were to divide drinking water and wastewater security among different Federal agencies

could lead to confusing and contradictory standards—especially for utilities that provide both drinking water and wastewater service to a community.

The Obama administration has gone on record in support of ensuring water and wastewater systems are regulated by the Environmental Protection Agency and not the Department of Homeland Security, testifying in 2009, “EPA should be the lead agency for chemical security for both drinking water and wastewater systems.” Chairman Lungren, Members of the subcommittee, this concludes my prepared remarks. Thank you again for the opportunity to testify, and I look forward to answering any questions you may have.

Mr. LUNGREN. Thank you very much. I want to thank this panel as well as our previous panelists for staying within the times. That is unusual. Hopefully that is a good sign for the rest of this Congress. We will go to a round of questions, 5 minutes apiece. I will start.

First of all, Mr. Scott, representing both your company and the association, your testimony indicates that you believe that the CFATS program is working well.

Mr. Beers stressed the fact that there is a cooperative spirit that has been implemented between the regulatory authority and the industry. Some might say from the outside that looks like it is too cozy or why should that occur? What would you say in response to that?

Mr. SCOTT. Well, I think we have had a very good working relationship or working partnership with DHS since the beginning. We had a lot of experience in the chemical industry prior to the birth of DHS.

We had the Responsible Care Code for Security already in place. Many of the companies already had security upgrades in place. We really had a focus on how to do security around the chemical facilities in the United States and for Dow what we are implementing on a global basis.

So when DHS came into being, there was already a lot of work in progress or already completed. They recognized that. They also recognized that it takes a good working relationship, working with business, with the National infrastructure to make significant progress in what they were doing.

So working in concert, and it has obviously been a working relationship, we have been able to develop a very strong and very positive relationship that has made a lot of progress. I think a lot of the progress that they have made has been because of this relationship.

Mr. LUNGREN. Some looking in from the outside would say that sounds good but boy, look at the results. There are only—they haven’t had a single one where they have had a final approval with the site inspection. They have only got a few which they are sort of almost there. If this is the way Government works, it takes too long, costs too much, we don’t get the results, maybe we should start over? What would you say to that?

Mr. SCOTT. We definitely should not start over. I mean, we have made a lot of progress. A lot of the progress was made, again, as you heard. There are some companies that have already done a lot of things that moved them out of the tier, the high-risk tier level.

There are a lot of companies, and I can speak for Dow specifically. We have put security upgrades in place at all of our sites across the United States. Actually around the world we implement

the same standards around the world that we have here in the United States. Regardless of whether we have an MTSA site or a CFATS-regulated site, we put the same upgrades in place.

So a lot of that partnership has been driven and a lot of the progress has been driven by the industry side. We are moving very fast on the industry side. We wish DHS could move a little bit faster. I think permanence and consistency by reauthorizing the CFATS would be the way to go.

Mr. LUNGREN. Let me ask a question directed both to you and to Dr. Mannan, and that is, you mentioned that one of the successes has been a number of companies have moved from one tier to the other or out completely and possibly that is the result of changing to different chemicals.

Even though I have some strong reservations about mandating IST, some might say looking at that, well, you know, you said that some have reduced their exposure, some have gotten out of this by moving to other chemicals. Isn't that what IST is? Why shouldn't the Government mandate IST? I would ask both of you if you could respond to that question.

Mr. SCOTT. I will go first. We are not in support of mandating any single risk-reduction tool. We look at the whole package. I think that gives the site the flexibility to put the right tool in place to reduce the risk at that particular site.

I think mandating any one specific tool takes the focus off of the rest of the tools. That is what we have seen over the last few years. If we focus in one area, you lose focus in another area.

So we look at the whole. We take a holistic approach towards security, looking at all the tools that are available to us including process safety controls or improvements. When we do our SVAs we go out with a security person and a process safety person and look at the whole picture.

We look at the whole picture from including site security, transportation security, and cybersecurity so that we don't shift risk from one to the other. So taking that holistic approach is the way we need to look at things. That is why we don't support the mandating of any one single tool.

Mr. MANNAN. Yes, Mr. Chairman, that is a very good question. I would start with saying that when you mandate things, you know for sure what is the right thing to do. For example, if a worker is climbing up a stairway onto the top of a 30-meter tank, then you know that the hazard is he is going to fall off. We know what the cure for that is. Provide him scaffolding.

The problem with IST is that we don't know on a case-to-case basis what is the solution. Even for the same chemical under different circumstances as even our other witness, Mr. Hawkins, has said, it could be a different solution.

So I think mandating that would be, in my opinion, a wrong approach to take at this time. I would rather that the market-based, incentive-based approaches work.

The other issue is that when you mandate it, you force the Department of Homeland Security to be able to enforce it and develop some compliance program. I firmly believe that currently the Department does not have the qualitative or quantitative expertise to be able to deal with enforcing and complying with inherent safety.

Mr. LUNGREN. Thank you very much. My time is up.

I would now recognize Ms. Clarke for 5 minutes.

Ms. CLARKE of New York. Thank you, Mr. Chairman. Mr. Hawkins, both of us in this hearing room right now are much safer from chemical terrorism or accidental chemical release due to the actions of DC Water in removing gaseous chlorine from the Blue Plains facility.

In your testimony, you discussed that decision and indicated that this change would be considered prior to 9/11 but that that event gave an extra push to that decision.

You also noted that a high percentage, 66 percent, in a recent sector survey, indicated that they had switched from chlorine gas to other methods and that more indicated they plan to do so. Do you believe that safety and security are driving those decisions?

Mr. HAWKINS. I do.

Ms. CLARKE of New York. Well, let me ask my next question then. I am glad you were so emphatic about it. You caught me off guard.

Dr. Mannan, I have my next question for you. In your testimony, you conclude by stating that you are concerned that inherently safer technologies are not defined and as such cannot be pursued until the definitions of them is agreed to and that then you don't think that a definition is possible.

Do you understand the definition of process safety review as it is common industry practice carried out by any reputable business in this sector? Would you agree that requiring a process safety review is feasible?

How about if we promoted methods such as those outlined in Mr. Scott's previous testimony, reduce inventory, reduce pressures, lower temperature, making use in process without storage and use alternates where process allows? Are those well-defined and understood and can you pursue those to enhance security?

Mr. MANNAN. Madam Ranking Member, you ask a very difficult question.

Ms. CLARKE of New York. Yes.

Mr. MANNAN. But the premise of the process safety reviews which are mandated now under OSHA's process safety management law and the risk management program of EPA, those are reasonably well understood, what you have to do and what you don't have to do.

The problem with inherent safety is that while the concepts are reasonably well-understood, get rid of the chemical, reduce the quantity, reduce the pressure, reduce the temperature, when you go into the implementation phase that is when you get into a problem.

For example, if you are going to eliminate the chemical, the question is: Where does the chemical go? So I will give you an example which I hope I can explain properly.

Ms. CLARKE of New York. Yes.

Mr. MANNAN. If you think of risk as a balloon, and the balloon has a certain size, and if you push the balloon from one side, and it pops out on the other side, then really it does not reduce the risk or the size of the balloon.

I would like to see inherent safety defined or quantified to a certain extent where you are able to see the full size of the balloon and so that you don't displace risk from one area to another area, maybe an economically disadvantaged area, maybe to another country, or to a place where risk or security could not be managed properly.

Ms. CLARKE of New York. Well, I just think by virtue of your response, you would be going to put that framework in place. It seemed to me in your testimony that there was this, I guess, ambivalence to try to create that framework. Do you think establishing that framework is possible?

Mr. MANNAN. Yes. I think ultimately we need to get to a point where we are able to establish that framework. How long that is going to take, I am not sure. But until we get there, I am opposed to having legislation in place which would be difficult to implement. I will be very short but I will give you an example.

Ms. CLARKE of New York. Yes.

Mr. MANNAN. Let us say prior to the time when the temperature scale was invented, we still referred to temperature but in a relative basis. For example, we said warm, warmer, hot, hotter, cold, colder, so on and so forth.

The problem with that scale was that what was warm to somebody may not be warm to somebody else. So there was this very subjective evaluation of the measurement of temperature.

I think with regard to inherent safety we are pale right now. Hopefully when Lord Kelvin will come along, who invented the temperature scale, and we will have an inherent safety scale. Thereby then we will be able to easily implement it.

Ms. CLARKE of New York. We are hoping you are him, Dr. Mannan. Thank you, and I yield back, Mr. Chairman.

Mr. LUNGREN. I recognize for 5 minutes, Mr. Meehan.

Mr. MEEHAN. Well, thank you, Mr. Chairman and thank you each for your presentations here today. I am coming back to this issue of inherently safer technology because to me it seems like it is a moving standard.

On one hand we are looking at industry. We are looking for innovation and other kinds of things. If you have an existing chemical compound or utilization of things, does that require you to report then on, you know, this is what we have at our facility?

Then as your business model changes do you have to report back again on if you use new chemicals and different combinations or you have a new business line that opens up? How are you affected by these mandated rules in the form of just the daily operation of your businesses, or businesses or industry, Dr. Mannan, speaking for the industries?

Mr. MANNAN. Well, first of all I don't speak for the industry. As I said, my opinions here are my personal opinions. But with regard to your question there are a couple of things. First of all, right now as we speak, in addition to the current CFATS legislation, which is the law of the land, we also have risk management program standard under EPA.

Under EPA standards, RMP standards, every facility that is covered by the RMP standard whenever their inventory of chemicals changes or even under certain conditions the quantity of chemicals

they have on-site changes, they have to file a new report to EPA. So under that rule there is some kind of regulation or enforcement going on.

With regard to inherent safety, as I said, I still don't think that we are where we can legislate regulated, okay? But I would think a prudent business practice in this, my colleague here, Mr. Tim Scott could probably better be able to answer, but a prudent business operator who is aware of the kind of business risk as well as manufacturing risk that they are undertaking every time their inventory or business model changes they would evaluate what kind of risk they are undertaking.

Mr. MEEHAN. Thank you. Mr. Scott, do you have thoughts on that in general, the question that I asked?

Mr. SCOTT. I will ride in on that and yes, process safety and especially in the development of new facilities is the best time to implement safer technologies or new technologies that you have in place. In new construction we regularly go through that.

We also go through process safety reviews on a regular basis or the processes that we have in place. When we do our site security and vulnerability assessments, and then we started those in 2002 on a global basis, we had process safety in mind as well.

We conducted those vulnerability assessments with a security person and a process safety person to look at it from both perspectives. We made minor tweaks at those points in time, but again, safer technology is best implemented on a new facility, a new construction process.

Once you are regulated under CFATS, if you do have process changes that would impact the chemicals of interest, yes, you need to report that back to DHS and have an inspection or possibly have an inspection of that facility to see if additional increases in security are necessary.

Mr. MEEHAN. What is going to happen when you identify as we move forward and create not only new technologies but new infrastructure that the business would put together for their, you know, their operations?

What happens with our existing sort of graying infrastructure? I have petroleum refining facilities in my district that are struggling just to keep the operation working today with aging materials. Are we by virtue of putting more regulations on them with regard to meeting these homeland standards effectively perhaps putting them out of business?

Mr. SCOTT. There is a significant cost to upgrading security across the business. I mean we have, Dow in particular, we spent a quarter of a billion dollars on security upgrades since we started this process.

Mr. MEEHAN. How much did you spend?

Mr. SCOTT. A quarter of a billion dollars, \$250 million dollars since 2002. Now, that is on a global basis, but most of that money is being spent in the United States where the industry is being regulated relative to security. But again, we implement our security upgrades on a global basis. So what we do in Texas is the same thing we do in Germany is the same thing we do in India, wherever we have sites.

So we have spent a significant amount of money to in advance of CFATS, actually, to get into preparation. We started those in 2002, and if you go to our sites now you are going to see significant physical security upgrades in place.

We have also worked on the risk-based performance standards to match up our personnel surety programs and those sorts of things here in the United States. So there is a significant cost to doing this.

Again, on process safety changes they are best implemented on new facilities. So the old facilities may be able to make some minor changes, but making significant changes in processes of established facilities is overly burdensome.

Mr. LUNGREN. The gentleman's time has expired.

I now recognize the Ranking Member of the Full Committee, Mr. Thompson, for 5 minutes.

Mr. THOMPSON. Thank you very much, Mr. Chairman. Mr. Scott, I appreciate your testimony and you have been before us in the past. I think the point that you make is very important, that Dow as a matter of doing business looks at certain aspects of security and determined that it is pretty much in the company's best interests to do certain things. By doing that your good business is secure and safe.

While that has a cost associated with it, I think it is the risk of not doing it which you can't really put a finger on that we are trying to do with this legislation. So it is not coming in and saying you must do this, but it is working in a partnership that this legislation was put forward.

It is in that spirit that we continue to promote it. But if you have an aging plant that is at risk from a security standpoint, would you not agree that once those vulnerabilities are identified they have to be addressed?

Mr. SCOTT. The vulnerabilities identified in the inspections need to be addressed for your site security plan to be approved.

Mr. THOMPSON. Absolutely.

Mr. SCOTT. So you look at every option that is available to that site to meet those standards. Everything is on the table including process safety improvements. It is already in CFATS that that is one of the tools that you look at.

Mr. THOMPSON. Yes. From time to time your testimony also was that you can build in those things with a new facility, obviously, which I think we all agree. But we don't have all new facilities.

Mr. SCOTT. Right.

Mr. THOMPSON. Therefore we have to have a regimen established so that we can secure those facilities. I do understand the investment, but we are trying to make sure that the public at large is not harmed because of facilities not meeting minimum standards. So I thank you for that.

Dr.—is it Mannan?

Mr. MANNAN. Yes, sir.

Mr. THOMPSON. Dr. Mannan, you have testified before this committee that we should not do this until we define inherently safer technology and some other things. Is that what you are saying?

Mr. MANNAN. Yes, sir.

Mr. THOMPSON. Tell me again why.

Mr. MANNAN. I can give you several examples, but just to be brief, one of the first things is that if you were to mandate IST considerations without a clear definition of IST, without clear ways of determining IST options, there is a possibility that unintended consequences could occur. There is also a possibility that some facilities could end up transferring risk where we don't want it transferred. All—

Mr. THOMPSON. Transferring risk where?

Mr. MANNAN. For example, when a facility goes from one chemical to another chemical or stops using that chemical, the chemical that they go to may be a derivative of the first chemical. That first chemical may now be manufactured elsewhere where now you have a risk transfer where they may not have the same kind of chemical security.

Mr. THOMPSON. But would they not be required to demonstrate and prove that what they are going to reduces the vulnerability?

Mr. MANNAN. The facility from which the risk has been transferred or the one that it—

Mr. THOMPSON. The one that you are in fact inspecting.

Mr. MANNAN. If they are required to prove that risk in only their facility has been reduced then it is an easy thing. But if they are required to prove that the overall risk going back to my balloon example, that the overall risk has been reduced then that is another issue.

Mr. THOMPSON. Well, but I don't want you to say if I move it somewhere else then we have to go there. I think we have to inspect that facility and so I am a little concerned.

But you also just—I know you represent a prestigious university, but would you just stipulate for the record that there is no financial interest on the chemical side of your institution that would cause you not to present information to this committee that is not correct?

Mr. MANNAN. No, sir, there is not financial interest either on my side or I am sure from the university that would prevent me from representing testimony that is not correct.

Mr. THOMPSON. So do you receive any money from any chemical companies to operate what you do?

Mr. MANNAN. We receive money from a lot of different organizations, including money from chemical companies.

Mr. THOMPSON. That is—

Mr. MANNAN. Our main contributors are people who have been hurt by incidents in the chemical industry.

Mr. THOMPSON. Mr. Chairman, I will just for the record like to follow up this with a written communication to Dr. Mannan based on what he just said.

Mr. LUNGREN. Yes. I hope, Doctor, you will include the fact that I believe you get some funding from DHS directorate if I am not mistaken. The gentleman's time has expired.

Mr. Long is recognized for 5 minutes.

Mr. LONG. Thank you, Mr. Chairman, and thank you to the witnesses for taking your time out today and being here. When we talk about CFATS, when we talk about IST, a majority of the time we are talking about external threats, external risks, but I would like to start with you, Mr. Scott, if I may?

What do you do on internal threats, sabotage, what type of steps do you take in that regard and is that of concern to you?

Mr. SCOTT. The insider threat has always been—it is a concern in all industry. As part of our SVA the vulnerability assessments, we have looked at internal threats in areas as well, prior to CFATS being implemented.

One of the things that we do on our Dow internal vulnerability assessments is we go to the facilities inside our plants that are in question, that happen to produce a higher risk to our site or to the community, and we talk to the operators of those plants in the control rooms. We get their opinion on how an insider threat could be involved in creating some kind of an internal or an off-site impact.

So insider threats have always been part of our Responsible Care Codes for Security audits and also our Dow internal vulnerability assessments. When you go to CFATS, when you add CFATS on top of that insider threat, the theft scenario, the theft and diversion scenario is also included in CFATS.

Mr. LONG. Okay, but I would think that that would be with all the external, CFATS, and IST and everything that we are trying to do, I would think—I would hope that that would be job one because that would be an awful easy way to harm a lot of people. I will go to—thank you.

I will go to Mr. Hawkins with the same question. What do you do as far as internal threats in your organization?

Mr. HAWKINS. We have installations throughout the city. We have both internal and external safety and threat reviews. Internally we have a significant police force that we operate within our facilities.

We do checks on our employees, all of whom we think are wonderful members of what we call Team Blue. We do safety and security walkthroughs on our facility on a regular basis to assess what potential threats there would be.

I would want to say to the answer to a number of the questions here, there is no question—there may be no more regulated facility for health and safety broader than just security than Blue Plains because of the discharge to the Potomac, the largest point source to the Chesapeake Bay, the most-studied water body in the world.

We are very used to regularly updating our plant to the tune of your money. You are our rate payers of hundreds of millions of dollars. We have had a \$4 billion 10-year capital program where we are updating existing facilities. You rarely build new treatment facilities. You are constantly updating existing treatment facilities.

We comply and will comply with every regulation that we are asked to comply with. Security is one of our highest priorities. But make no mistake. We always do what is obligated to us. So you have a regulation or a law, we will comply with it. We always do the emergency so when there is a break out on Constitution Avenue we will fix that break.

The system itself, the pipes that you have out on the street that you live in are perilously old. The apparatus leading to the plants, which are pretty secure, pretty well protected, are perilously old. So there is a risk of shifting whenever new obligations are put on us, which we will comply with. We consider job public health and safety as job one.

What tends to be overlooked is the system that is out in the cities which are getting older and older and older. We have had over 500 water main breaks in this city since December 1, not to mention the ones you have seen out in the suburbs. So we comply. We do have internal security. But there is the risk of where you have money being spent based on where regulations are written to the cost of that you don't always expend in other areas.

Mr. LONG. The technology and the process that you use to disinfect and treat the water, do you find that applicable to a chemical manufacturing plant?

Mr. HAWKINS. I am not qualified to answer that question. For what we use it for, it is applicable in the wastewater treatment system. We disinfect. The chemicals that we use now, which are much safer and while they cost more to buy, the training and safety precautions that we must spend money on are less because they are less dangerous on our facilities.

Our employees are much more pleased to be working with less dangerous chemicals is applicable in other wastewater treatment facilities. So yes, it certainly applies in the wastewater industry. I just don't know the applicability to other industries.

Mr. LONG. Okay. Again, thank you all for your testimony here today, and I yield back, Mr. Chairman.

Mr. LUNGREN. Thank you.

The gentlelady from California, Ms. Richardson, is recognized for 5 minutes.

Ms. RICHARDSON. Yes. Thank you, Mr. Chairman. First of all, if I step on wrong grounds feel free to help me here because I am a new back on the committee. I actually wanted to entertain in a colloquy with you if I might?

It is my understanding you were the author of 2006, this legislation, and I was just curious since we have a DC Water person here, what was your thought back then, you know, looking back, why we didn't include water facilities, wastewater facilities, and port facilities especially, since I happen to know your history of having those in Long Beach, where we have all of those?

I am just a little curious why you didn't include those and would you be open of you informing? We didn't get this information until Wednesday evening so this is really my opportunity to now having read it to chat with you about it so—

Mr. LUNGREN. Well, you know, I will be happy to discuss that with you. It was both a jurisdictional question and a question of whether or not we could have compatibility of the various agencies involved. Also it had to do with how we could get our bill to the floor without going to other committees.

Ms. RICHARDSON. Are you open to the changing that as we move forward?

Mr. LUNGREN. I am extremely opposed to including inherently safer technologies to mandate, but I am agnostic on the water issue.

Ms. RICHARDSON. Thank you, sir. Reclaiming my time, Mr. Scott, I asked the question of Mr. Beers what was his thought about the fact that Homeland Security only screens against terrorist watch list. However, a person who is not on the terrorist watch list but

prohibited from purchasing a gun under the National Instant Criminal Background Check System would be cleared by DHS.

What are your thoughts now as things are kind of changing in this environment? What would you think about your facilities in terms of if we were to look at some further legislation or would you be open to leading that within the council, the Chemical Council?

Mr. SCOTT. Most of the industry or most of the companies in ACC and certainly Dow has—we have done background checks historically, criminal background checks historically on all Dow employees and any contract employees that are working on our sites.

We also had several sites that are covered by MTSA, and they use the TWIC card. Having a TWIC does not automatically authorize you entry into a Dow site. You still have to have our Dow background check, but working in harmony those two processes work.

So we have been discussing the personnel surety issue with the Department of Homeland Security, and they are looking at or considering a card, either the TWIC program or a card like the TWIC program on recognizing other similar cards, which many of the companies are already operating under those similar Federally issued cards. If we could harmonize those programs both the industry and DHS would benefit from that.

Ms. RICHARDSON. Thank you, sir. Then my next question, when we brought forward the legislation last year I had worked on an amendment called the whistleblower protection, and it just gave a little more protection for those who might be observing things. I just came from a committee, for example. It was Coast Guard and water where we were dealing with the oil spill.

Some might say that now witnesses are testifying to the fact that they did in fact see some problems. What is your position on the whistleblower protections and do you guys as a council support them?

Mr. SCOTT. I would have to see the details of them before I could say I would support it or not support it, but in Dow—

Ms. RICHARDSON. Well, two—

Mr. SCOTT. In Dow, for example, we have anonymous tip lines. We have awareness programs in place for all of our employees and give them the numbers to call if they do see anything that is suspicious.

We use the DHS numbers that they can call if they do see anything suspicious. We have an 800 number anonymous line that they can call in and report anything at all, ethics violations or anything suspicious that is happening in the company either from a security perspective or an operational perspective.

Ms. RICHARDSON. Okay.

Mr. SCOTT. We have a lot of those same things in place.

Ms. RICHARDSON. To your credit, sir, though, Dow I think might have some different standards than what might be applied across the country. What I would like to do because my time is now running out, is supply you with that information, and then if you could provide your thoughts on not only your perspective but on behalf of the council as well? It would be helpful to me.

Mr. SCOTT. Will do.

Ms. RICHARDSON. And move forward. Thank you, sir. Thank you, Mr. Chairman, for—

Mr. LUNGREN. Thank you.

Ms. RICHARDSON [continuing]. Interacting with me on that.

Mr. LUNGREN. Mr. Walberg, welcome to the subcommittee, and you are recognized for 5 minutes.

Mr. WALBERG. Thank you, Mr. Chairman. Mr. Scott, good to see someone here that has some base in Michigan, that is still left.

Mr. SCOTT. We have a pretty big base in Michigan.

Mr. WALBERG. I know that.

[Laughter.]

Mr. WALBERG. We thank you for that base, and we want to make sure it continues and has ability to hire more and unrestricted by unnecessary regulation but restricted by regulation that works for all of us.

Some have cited the New Jersey chemical facility law as a model for IST consideration. I am concerned, however, that the New Jersey model is not necessarily appropriate model for Federal Government regulations in that it creates undue focus on IST versus other less costly and more easily implemented security measures that may allow facilities to meet the performance standards. What are your views on that position?

Mr. SCOTT. Dow has a very small footprint in New Jersey, but in talking with other folks that have a larger presence there they have stated exactly that. The focus on mandatory IST has taken the focus pretty much away from other upgrades that could be in place to meet performance standards.

I have heard the stories of most of the audits or most of the inspection the time is spent in going through paperwork and background and concepts on IST, spending a lot of time trying to understand what and why the industry does it the way it does it with very little output at the end that makes significant improvement compared to the time and the effort that is spent and the time and effort that is taken away from the other options.

Mr. WALBERG. Thank you. To follow that up, do you agree with Dr. Mannan that the science is just not there to be able to define, quantify, and evaluate IST and generate accepted and applicable forms?

Mr. SCOTT. It is a very complex subject, and every time we have a discussion about it with DHS it obviously is very complex. So I think we are not at the point where we can mandate that particular topic or that particular tool or any other particular tool. But I think it is part of the process now that is available to industry to use to meet the standards. So I don't think we should mandate any particular tool, especially IST.

Mr. WALBERG. Okay. Thank you. Dr. Mannan, I appreciate your real-world illustrations using balloons and other things. That makes it simpler for a guy like me to understand cause and consequences. What types of experts in what kind of disciplines would DHS need to adequately review IST assessments and make decisions on how facilities should implement their processes?

Mr. MANNAN. As you can see, someone who has spent a career in chemical engineering for a vast number of years, more than I care to remember, and someone who has been working in IST for the last 10, 15 years, where now I sincerely am struggling with

some of these issues. But to get there first of all I think we have to develop the science. I cannot emphasize that more enough.

Then the types of people you would need at DHS in general chemical engineers, mechanical engineers, who understand processes, No. 1, who understand risk and how to calculate risk and then are able to factor that in with operational issues and all the other issues that fall out of making such complex decisions.

So I don't know if I have given you the job specifications of a person like that, but that is where I would start with.

Mr. WALBERG. Well, does that type of expertise reside within DHS?

Mr. MANNAN. Currently it is not. As I said in my oral and written testimony, there is not either adequate or appropriate expertise as far as that is concerned, the inherent safety part. I think DHS has the capability to do the current CFATS regulation and compliance.

They may not have the appropriate number of staff to do it, but they have the type of people that they need to do it. But the type of people you need to do inherent safety compliance, I believe, they absolutely don't have.

Mr. WALBERG. Okay. Thank you very much. I yield back.

Mr. LUNGREN. Okay. Mr. Walberg, I would just say this goes to the question of whether we should impose performance standards versus a mandated technological fix. Particularly in an area where we have had testimony before of those who came up with the concept of IST telling us that it is not an off-the-shelf or completed product.

It is a process. It is a method of analysis that should be alongside the others. That is why I keep coming back to how do you mandate that? Does that lead us in the right direction? So I thank you for your questions. Your time is expired.

All time is expired. We thank our witnesses for coming before us. We really do appreciate it. I think you have added valuable testimony both in terms of what you have said orally and in your written testimony.

Members of the committee may have some additional questions for you. If we do we would ask you to respond to these in writing. This hearing record will be held open for 10 days. Without objection, the subcommittee stands adjourned.

[Whereupon, at 12:05 p.m., the subcommittee was adjourned.]

APPENDIX

QUESTION FROM RANKING MEMBER YVETTE D. CLARKE FOR TIMOTHY J. SCOTT

Question. To the best of your knowledge, have any facilities been adversely affected economically, including loss of revenue, reduced workforce, or even facility shutdown or relocation, due to CFATS compliance?

Answer. CFATS implementation is just now getting started with the first round of inspections to begin later this year or in 2012. Sites will have another year to complete implementation or develop plans for implementation of any necessary security upgrades. It's too early to tell if there will be any adverse economic impact on the industry, but that's also the reason to let the current process continue to completion without additional changes, requirements, or delays. I can say that Dow has voluntarily upgraded security on a global basis since 2001 and has spent hundreds of millions of dollars during a period of difficult economic times for the chemical industry. Dow has been proactive in support of risk-based legislation that would create certainty in the regulations and our upgrades have been implemented to meet predicted Government expectations. Additional changes to the requirements at this point would add little value and detract from voluntary efforts already in place.

