



DIRECTOR'S CORNER



The United States Senate Committee on Homeland Security and Governmental Affairs chaired by Senator Susan M. Collins has started a series of hearings on the security of the U.S. chemical industry and its vulnerability to terrorist attacks. The vulnerability of the industry is pointed out in several studies conducted by agencies such as the U.S. Environmental Protection Agency and the Government Accountability Office. The scenarios range from panic created by economic disruption caused by wide spread energy systems failure to unleashing of toxic hazardous materials.

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 quite visible, they are the most prepared because of voluntary programs that have been developed and implemented. The second tier of vulnerability category includes smaller and medium sized facilities that may or may not be members of any industry associations. These facilities are less visible but are also in general less prepared. Finally, the third category of vulnerability includes all the hazardous materials that are in various forms of transportation throughout the United States. In addition to being present almost anywhere in the United States at any given time, this category also represents the highest visibility and highest vulnerability. It could also be argued that this category is also the least prepared to deal with intentionally caused catastrophic scenarios.

While the US Senate deliberates on the issues and determines a course of action, the questions that might be asked is what can and should be done. Some may argue that some kind of minimum standards needs to be established. Some pertinent subjects of interest in this regard are active protection measures; passive protection measures; vulnerability analysis, response, and recovery plans; and long-term needs and priorities. Active protection measures include measures such as increased security, limited access to facilities, and background checks. Examples of passive protection measures include development of exclusion areas and some process and engineering measures.

Vulnerability analysis, response, and recovery plans are needed not only to help devise the prevention and protection plans but also develop the response and recovery plans. In this respect, it must be mentioned that 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 the local agencies and the public. One very stark lesson of the 9/11 events is that the “first” first-responder is usually members of the public. Also 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 critically needed.

Some long-term goals and priorities to prevent and/or reduce the consequences of intentional catastrophic scenarios require some clear thinking and work. While no one would argue that making hazardous materials less attractive as a target should be a goal that all stakeholders should agree on, the differences arise in how we realize that goal. Inherent safety options can and should be considered. However, 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 considered whenever an inherent safety option is considered. Another long-term goal is developing 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. Chemical security like many other things will require the commitment and effort of all stakeholders.

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