



Directors Corner

There have been a few occasions this year that have caused me to pause and reflect on our knowledge of process safety issues and implementation of process safety. Each of these occasions forced me to look at society's perception of risk and how risk is managed. Below, I will briefly discuss and reflect upon these experiences.

Congressional Hearing - CFATS Reauthorization

Because of Center's track record of research and work regarding Inherent Safety (IS) issues, in February 2011, I was invited to appear before the US Congress to provide testimony on the reauthorization of the Chemical Facility Anti-Terrorism Standards (CFATS). Specifically, I discussed the role and inclusion of IS requirements within the Department of Homeland Security's CFATS legislation. As can be seen from the testimony, there are still a lot of misconceptions about IS implementation at existing facilities. I continue to believe that science has not developed to the extent where inherent safety can be quantified. While it is possible that sometime in the future, inherently safer options may become part of legislation and/or regulation, we as a society must remember that such options must not create unintended consequences. One way to ensure this is to require risk assessments whenever IS options are considered. In fact, as I have testified,

whenever IS options are considered or implemented, facilities must show that:

- Overall risk has decreased,
- Unintended consequences have not been created,
- Risk has not been transferred or accumulated elsewhere, and
- Implementation of the IS options does not result in departure of industry from one area to another.

For a complete version of my oral testimony, please see: http://pscfiles.tamu.edu/posts/testimony_02112011.wmv

Bayer CropScience

Another event I had the opportunity to participate in was a lawsuit brought on by a group of community members from Institute, West Virginia, against Bayer CropScience. This Bayer facility produced and used methyl isocyanate (MIC) for producing a pesticide called TEMIK. In August 2008, an incident that resulted in two fatalities and other consequences occurred. It is worth noting that MIC was not involved in that incident. Following the August 2008 incident, Bayer made several significant changes to that plant, including reducing the MIC storage from 200,000 lbs. to 50,000 lbs. The MIC storage also was moved completely underground and the plant was redesigned to include several layers of protection. As the plant was getting ready to start up production again, the

lawsuit was filed in Federal Court pleading for an injunction to prohibit startup of the plant because the plaintiffs believed the plant posed an unreasonable risk to the public. The federal judge granted a temporary injunction and subsequently, the judge issued an order appointing me as the court-appointed expert to help adjudicate the matter. I, along with assistance from my team, conducted extensive inspections, document reviews, and interviews of appropriate plant personnel. I then filed an extensive report to the court elaborating on my conclusions and findings. With regard to the risk of a catastrophic event involving MIC, I had calculated it to be 10^{-14} .

While court proceedings were ongoing, including unsuccessful efforts by plaintiff lawyers to disqualify me, Bayer AG (corporate offices in Germany) made a business decision. In a prior agreement with the EPA, Bayer had already agreed to phase out the production of TEMIK by the end of 2012. The factors I believe that led to this decision were as follows. Bayer still did not know when the case in front of the federal court may be decided. In addition, OSHA, under public pressure, had undertaken a National Emphasis Program (NEP) inspection of the facility. The OSHA NEP inspection was expected to last until August or September 2011. Thus, for Bayer, it would be very difficult, if not impossible, to meet crop demands of 2011. They were left with a choice of starting up the plant for just one year's worth of crop demands or make the business decision to give up and withdraw from the case. Bayer decided to withdraw from the case and agree to never again start up the MIC unit.

The ultimate outcome of this series of events resulted in shutting down of a process or unit within a plant. While it should be recognized that ultimately society, directly or indirectly, is the final arbiter regarding such decisions; however, it is also very important to recognize that such decisions have other consequences such as loss of jobs, departure of industry, risk migration, economic impacts including

cost of products, independence from imports and availability of appropriate material.

CBS News Report

A final topic I would like to touch on is my interview in the CBS investigative report on, "Oil spills, leaks happen daily across U.S." Just like the previous two events discussed in this article, this one also brings forward issues of national and societal concern regarding chemical safety. We are spending millions and billions of dollars on various programs in industry and government. Yet, there is no way of knowing answers to simple questions like, "Are we getting safer?"

Referring back to a study done by the MKOPSC in 1999-2000, one fact was established—given the current status of incident information, there is no way of answering the question, "What is the status of chemical safety in the U.S.?" Both the CBS investigative report and our 1999-2000 research report shine the light on this glaring and unacceptable state of affairs.

In summary, we have to start collecting statistically valid information about incidents and their consequences on a national basis. Only then will we be able to answer the simple questions discussed above, we will be able to do trending analysis, we will be able to develop a cache of lessons learned and root causes. Only then will we be able to move towards fewer and fewer incidents hopefully resulting in a culmination of the vision of zero incidents.

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