

From John Puskar:

To my colleagues, clients, and friends

A report on things that might be of value to you from my experiences in China last week.

John Puskar was invited to present a paper last week in China at the American Institute of Chemical Engineer's Process Safety Conference in Qingdao, China, (a city of 9 million people and home of China's Petroleum University).



Mr. Puskar's paper was titled, "*Proven Practices for Minimizing Gas Hazard Risks*" and is available upon request.

Mr. Puskar attended more than a dozen paper sessions during the 2-day conference. The following are highlights of some of the most interesting papers along with some general notes on things that were learned. The conference was attended by hundreds of people from many different countries. The conference featured simultaneous translation of Chinese to English and vice versa. For more information, including accessing any of these papers, contact John Puskar, (JPuskar@PrescientTS.com).



John Puskar addresses attendees at the 6th Annual China Process Safety Symposium in Qingdao, China on September 27, 2018

1. Protecting your site from terrorism and vandalism, API 780, (Security Risk Assessment Methodology for the Petroleum and Petrochemical Industries).

I had no idea that there was a standard developed by API that came out shortly after the 9/11 tragedy for protecting facilities from vulnerabilities and threats inside and outside of the organization. Forget about the title, "Petroleum and Petrochemical Industries". In my opinion the principles and concepts within this document apply to all industries everywhere. In today's world who is not vulnerable to a disgruntled employee or someone outside the organization wanting to take out a key element of operational capability that cripples the organization?

2 Improving the efficiency and effectiveness of your Safety Instrumented System by Improving the Influence of Human factors.

SIF & SIL can be great but Human Error still beats these efforts about half the time. This paper discusses human error issues that can confound one's careful approach to process safety.

3. Predicting Realistic Data for Safety Instrumented Function Design
Per IEC 61511: 2016

If you're into SIF and wondering about data sources for failures this is an excellent resource. The paper describes how data is derived, provides sources, and gives examples of using the data.

4. Lead your process safety culture, Lead beyond the hierarchies

This paper was all about fixing Your companies safety culture. The author focused on 3 key elements that are quite simple and make sense. These were increasing the frequency of communications, making sure your communications have meaning, and achieving consistency in your communications. I spent time with the author, Martin Fernandez from Argentina, (www.whycomm.com.ar). He's very experienced with lots of valuable insight. Much of his work is with the oil and gas industry in Argentina. I had no idea that apparently the shale deposits in Argentina are amongst the largest in the world.

Some comments made in various papers that made me think:

- a) Dupont Sustainable solutions website has numerous very good papers and a section called insights with targeted process safety information.
- b) Too many SOP's could make things too complicated, confusing, and less safe.
- c) Dupont spends a lot of money and time and effort creating "as built" drawing of many sites.
- d) China has more than 700 chemical industrial parks, with more than 16,000 enterprises producing hazardous chemicals and 72,000 miles of oil and gas pipelines.
- e) Risk can be viewed as being a function of: 1) Complexity, 2) Internal Events, and 3) External Events.
- f) A fire at a California Refinery resulted in more than 14,000 litigants that sued because of air quality and respiratory issues. This says a lot about thinking about where sites are located relative to people and what kinds of events and losses need to be considered. It's not always obvious physical damage.
- g) Saying a HAZOP was done is one thing, but the quality of it is another.

List of other papers given that you may have interest in:

1. Consequence Assessment
2. Do not allow that single spark to start a huge blaze.
3. An analysis: Theoretic process accident model Shell Moerdijk Accident
4. In-depth analysis of "Near Miss" Incidents to improve PSM
5. Accident Investigation Using Tripod Beta Analysis Method
6. Sharing experiences surrounding inert entry of process vessel for repairs
7. Process LNG leakage and diffusion research
8. Integrity management of wellhead equipment on Oil and Gas Field
9. Understanding Chemical Safety Instruments: Best Practices



For More Information, including how to access these papers, Contact John Puskar, P.E. at 216-213-6201 or via email at JPuskar@PrescientTS.com, www.PrescientTS.com