Enhanced Stakeholder Knowledge

As the CCPS Vision 20/20 committee members were envisioning the future, they initially considered tenets that companies with great process safety performance will possess. As they developed the five industry tenets, they recognized that we are all in this together and everyone can make an impact on process safety. It is a joint responsibility of the companies and their stakeholders: academia, regulators, and the community.

To expand the vision to stakeholders, the committee identified four societal themes to address external factors that promote excellent process safety performance and help industry achieve it. The previous Process Safety Visions articles covered Vision 20/20's five industry tenets; this and the next three cover the four societal themes.

The first societal theme, enhanced stakeholder knowledge, addresses two opportunities: public risk literacy and fundamental process safety education.

Public risk literacy implies that the public, government, and industry decision-makers understand the nature of risk and how it is managed. This can be accomplished by improving risk education across academia. Early in their education, students would be introduced to basic risk-management concepts. Advanced concepts would be taught in university — *e.g.,* what constitutes risk and how it can be estimated. Technical risk management becomes a specific area of university study in engineering and business. With this understanding of risk, societal stakeholders and industry can work collectively to manage the risks we all strive to reduce.

Today, many chemical engineering students only learn about process safety when they are on the job. While some companies do an excellent job of educating their new engineers about process safety fundamentals, other organizations do not have such formal education systems. Under Vision 20/20, chemical engineers are required to take at least one course related to process safety to receive a bachelor's degree; all engineers would receive education in system safety as appropriate for their discipline.

What Does It Mean?

• Starting in primary and secondary education, students learn the basic concepts of risk.

• Engaging in science, technology, engineering, and mathematics (STEM) education in business and engineering schools allows university students to absorb technical concepts and understand process safety risk.

• This knowledge allows the public to effectively challenge industry to prevent process safety incidents. The same holds true for industry challenging the public to understand process safety risks.

What Is the Value?

• Understanding risks allows industry and stakeholders to have meaningful two-way conversations addressing public concerns on managing process safety risks.

• Enhanced knowledge supports a partnership to challenge each other to deliver great process safety performance.

What Can I Do?

• Support local STEM education, in high school and university.

• Have a conversation about risk with students and other stakeholders within your community.

• Continue to build your own knowledge throughout your career.

What Does It Look Like?

Promote risk literacy in secondary education through community outreach. Contact school boards, school administrators, and/or teachers about how you can help with a better understanding of risk in the school system. Be willing to give your time to help educators introduce risk concepts into the middle and high school curricula. This helps prepare students to absorb the more technical risk concepts in business and engineering schools. Improving risk literacy among students ultimately promotes more-effective risk management for society as a whole. This outreach will also promote meaningful communication between industry and the community.

Engage STEM students and educators in discussions on risk awareness. A first step can be guest lecturing at your local college or university on process safety and your own experience. Sponsor the inclusion of a process safety course for engineers in universities if one is not available. Contribute to the course development to ensure the appropriate topics are addressed. The Center for Chemical Process Safety (CCPS) holds faculty workshops and student bootcamps that introduce process safety fundamentals. Encourage your local colleges and universities to participate in these or similar courses to increase technical competency. This promotes the importance of understanding process safety risk, and reinforces that their future job will include managing risk. CEP