Ken Wells, J Pet Environ Biotechnol 2013, 4:6
http://dx.doi.org/10.4172/2157-7463.S1.004

OMICS Group Conferences
Accelerating Scientific Discovery

World Congress on
Petrochemistry and Chemical Engineering
November 18-20, 2013 Hilton San Antonio Airport, TX, USA

The human element in controlling safety hazards

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The most commonly accepted method for controlling chemical and other hazards in industry is the Hierarchy of Controls approach used by OSHA. Increasingly, safety experts question whether a single control, no matter how well conceived, can prevent an incident. These experts stress the need for several types of controls or barriers, as demonstrated graphically through concepts such as the Swiss Cheese or Bow Tie Models.

The role of human factors can never be ignored. Yogi Berra once said, "Baseball is 90 percent mental; the other half is physical." Whether he knew it or not, Berra was underscoring the point that no matter how much a physical factor (mechanical integrity, pressure control, explosive atmospheres) may cause an incident, outcomes usually depend on how people think, act and react in their work environment. Safety management create barriers of control to prevent incidents or to keep those incidents from escalating into disasters, in the end we are trying to control humans and their infinite capacity to bypass the controls we put in place.

This talk will present an overview of the Hierarchy of Controls and how that is being reinterpreted through barrier methodologies. It will then discuss the role that human factors play in controlling hazards. Finally, it will explore what may be the most significant causes of disasters, our biases and the limits to our capacity to imagine both the potential weaknesses in our systems and the extent of an ensuing disaster. Or, as the cartoon character Pogo said, "We have met the enemy and he is us."

Biography

Ken Wells holds an undergraduate degree from the American University and an MBA from Southeastern Louisiana University. He has been actively involved in developing and meeting the goals of safety management programs in the oil and gas and maritime industries for 20 years. As Director of Special Projects for PEC Safety, he has developed training programs, written and spoken on safety management subjects including Safety and Environmental Management Systems (SEMS), Job Safety Analysis and the Globally Harmonized System. He serves on the Center for Offshore Safety's working group addressing contractor skills and knowledge and the API RP 75 working group.

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