Outlook for Human Factors and Impact on Inherent Safety for the Process Industries

David A. Moore, PE, CSP
President
AcuTech Consulting, Inc.
100 Pine Street, Suite 2240
San Francisco, CA 94111
dmoore@acutech-consulting.com

ABSTRACT

It has been well understood that human factors present both the greatest hazards in the chemical process industries as well as the area needing the most attention to affect change in actual risk. Most of industry has been preoccupied in initiating the development of process safety management programs and conducting PHA studies, but has not developed special initiatives to address human factors in a fully comprehensive way.

One reason for this is perhaps the lack of broad understanding of what constitutes human factors issues, the lack of specific regulations addressing expectations of government, and the perception that this is a very comprehensive and difficult issue to address. As such, industry may not have fully addressed what has often been characterized as the area of greatest need in order to reduce actual process risks. For the industry to embrace human factors in a committed manner, more practical guidelines are required and additional information is needed for industry to understand how to expend their efforts on this cause.

It is only a matter of time until regulators are more interested in human factors than they have shown to be in the past. OSHA and EPA merely gave mention to the topic when promulgating the PSM and RMP regulations. This, however, is more likely an area ready for significant growth in the very near future.

Evidence of this is the new ordinance enacted in Contra Costa County, California, that is a first of its kind human factors-related regulation. This paper will outline the regulation and highlight the potential for like regulations to be enacted throughout the US by Federal and State agencies. As California's RMPP was a model for EPA's RMP, it is expected that others will see the need for a regulation addressing the issues of human factors.

The key problem for industry is that this regulation is so prescriptive to requirements for human factors and is also very comprehensive. It requires development of a management system to address human factors, and the completion and submittal of an exhaustive self-assessment on policies, procedures, training, and facility design for human factors. This new program is expected to invoke numerous questions on the adequacy of design and programs to address these issues. There is no telling where the regulators may stop in dictating the requirements that industry must meet as it is presently written.

Clearly industry needs to be aware of this development and prepared for other such regulations. This paper addresses the current situation of human factors assessment in industry, the need for improved human factors considerations in design and operation, the Contra Costa County Industrial Safety Ordinance, and a strategy for meeting the demands of the future in this area.