



DIRECTOR'S CORNER



The Alliance on Chemical Reactivity Hazards (CRH) is an agreement between the Occupational Safety and Health Administration, the U.S. Environmental Protection Agency, the American Chemistry Council, the Center for Chemical Process Safety, the Chlorine Institute, the National Association of Chemical Distributors, the Synthetic Organic Chemical Manufacturers Association, and the Mary Kay O'Connor Process Safety Center to work towards safer and more healthful American workplaces and communities through better identification and management of chemical reactivity hazards. Through this Alliance, the Signatories aim to (1) increase awareness of the need to identify and manage CRH among those who manufacture, distribute, use and store chemicals; (2) provide chemical reactivity hazards management information, methods and tools to a variety of audiences in meaningful and useful forms to those audiences; and (3) gain experience in the use of methods and tools to continuously improve identification and management of CRH.

The Alliance has started work in developing awareness and training programs, development of CRH tools, lessons learned and case history modules, and development of metrics to measure progress in identification and management of CRH. A number of activities are going on and planned with regard to all these areas, however; I feel it is pertinent to summarize the activities of the Mary Kay O'Connor Process Safety Center in this regard. The Center is a strong supporter of the goals of the Alliance and is committed to conducting activities to support all aspects of the Alliance goals. In brief, the Center is currently involved in the following CRH activities:

The Center offers **continuing education** courses on CRH. These courses vary in content starting from management of CRH up to the fundamentals of CRH and experimental and theoretical methods for CRH analysis. The courses are also offered on-site and can be tailored to specific organizational needs.

The Center conducts **experimental measurements** related to CRH analysis. We have the capability to conduct both screening measurements (e.g., reactive systems screening tool) and advanced measurements (e.g., automatic pressure tracking adiabatic calorimeter). Results of these experimental measurements are published in journals, proceedings, and conference presentations as soon as reasonably practicable.

The Center is involved in development of **theoretical methods** for CRH analysis. These methods focus on the application of thermal analysis techniques, computational chemistry models, and thermodynamic-energy relationships to estimate reactivity evaluation parameters. The combination of these techniques helps to minimize the amount of needed experimental work and provides the required parameters for evaluating reactivity hazards and a more comprehensive understanding of process chemistry.

The Center also conducts **incident analysis** and develops **lessons learned** and **case histories** from incidents that have already occurred. In this regard, the Center is currently developing brief incident analysis and lessons learned synopsis for the 167 incidents reported in the special report of the US Chemical Safety and Hazard Investigation Board. The objective of these analyses is to provide an objective analysis of each incident based on known data and scientific information. However, more importantly, these analyses point out what information should be known or collected to understand the CRH of the system under question. These analyses and other CRH information are available on the CRH web page of the Center (<http://process-safety.tamu.edu>).

The **Annual Symposium** of the Center dedicates several sessions to CRH issues. The topics covered range from CRH management, experimental and theoretical methods, structured approaches, lessons learned, and case histories.

The Center also continues to conduct graduate research in the area of CRH. In addition to several researchers who have completed their PhD in CRH topics, five more researchers are currently involved in PhD work related to CRH topics. The results of these research activities are disseminated through **dissertations, publications, conference proceedings, presentations at conferences, newsletters, and personal interactions** with Center personnel.

In summary, the Center is conducting a number of activities that support the CRH Alliance goals. However, a lot more needs to be done and stakeholders need to work together to solve the CRH problems and challenges.

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Summer 2004