

Presentation Topic: **Reactive Hazards Mitigation**

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Abstract:

Chemical process plants contain a large variety of hazards which cannot be eliminated entirely, but can only be minimized to an acceptable risk level. Major reactive chemical incidents occurred in the past heightened the concerns regarding reactive hazards in the process plants. The reactive hazards have the potential to cause harm to people or loss of life along with extensive damage to the surroundings due to the uncontrolled release of energy.

Identifying the reactive hazards could be more challenging since it requires thorough understanding of potential process upset conditions and in-depth knowledge of reaction kinetics involved in the process systems. There are different analytical test methods available for the detection and characterization of chemical substances and reactions. An exclusive reactive chemical review should be conducted to determine credible pathways by which the identified reactive hazards can potentially pose significant threats to the process system. The actual safeguarding philosophy employed can be dependent on regulatory requirements as well as the amount and type of risk posed by the reactive hazard. Addition of any single prevention or mitigation strategy or a combination thereof can be considered. Once intolerable risk levels are precluded, alternative mitigation strategies can be evaluated through a cost/benefit analysis.

This webinar will provide some background on previous reactive chemical incidents and its impacts, basic definitions and terminologies used in reaction kinetics and common reactive scenarios in the process systems. The session will focus on identification of reactive hazards in the process systems, and also cover selection of proper mitigation strategies to minimize the reaction hazards with a couple of examples.