

ADVANCING PROCESS SAFETY TECHNOLOGY AND MANAGEMENT PRACTICES

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The Center for Chemical Process Safety (CCPS) was founded in 1985 shortly after the Bhopal incident and now consists of 83 sponsoring members. CCPS is an industry-driven, non-profit professional organization affiliated with the American Institute of Chemical Engineers (AIChE). It is committed to developing engineering and management practices to prevent or mitigate the consequences of catastrophic events involving the release of chemicals and hydrocarbons that could harm employees, the community, and the environment. Areas of interest to CCPS sponsors are hazard and risk analysis, engineering design, operations and maintenance, information dissemination, and process safety management. Sponsoring members of CCPS include major petroleum, chemical, and pharmaceutical companies as well as other manufacturers and users of chemicals, engineering contractor, safety consultants, insurance firms, and government agencies.

The mission, structure, and operation of CCPS and two significant, current projects of potential interest to participants in the DOE, EFCOG/SAWG workshop will be discussed.

Measurement of Process Safety Management Performance (ProSmart)

Convinced of the importance of good process safety management (PSM), CCPS began a project in 1993 to measure the effectiveness of management systems. By continuously or frequently measuring the performance of the elements in a PSM system, flaws could be detected and corrected promptly before an accident occurs. Early work defined the twelve elements of a process safety management system. In the project's remaining phase, CCPS will define measurable indicators for the elements of PSM. The final product, to be called ProSmart utilizes readings of measurable variables for PSM performance, updated on a schedule keyed to their change characteristics. This contrasts with an audit evaluation, which captures a snapshot of the PSM performance at a particular instant in time. ProSmart defines the data to be collected, provides the computer interface, and calculates a numerical value of PSM system performance.

Process Safety Incident Database (PSID)

CCPS has developed, in conjunction with participating companies, a Process Safety Incident Database (PSID) based on Exxon's Incident Reporting and Analysis System (IRAS) and modified to suit the needs of CCPS. The database system has been designed to collect high learning value process safety incidents from participating companies, consolidate these incidents in a confidential database, and allow these same participating companies to analyze the resulting data and information for trends and lessons learned.