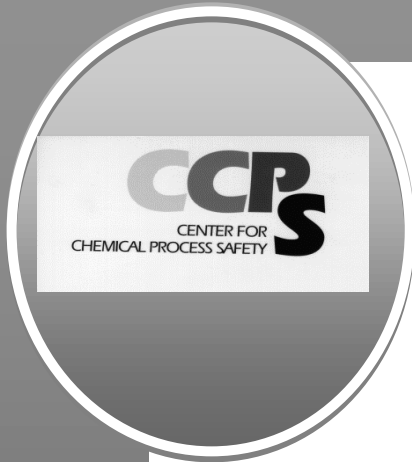


American Institute of Chemical Engineers

Center for Chemical Process Safety

CCPS



CCPS

- **Founded 1985 (shortly after Bhopal)**
- **Annual budget \$2,000,000**
- **Income**
 - **sponsor dues \$1,000,000**
 - **publications, meetings, and grants \$1,000,000**



MISSION

- **To promote continuous improvement in chemical process safety by:**
 - **Advancing state-of-the-art process safety technology and management practices**
 - **Serving as a premier resource for information on process safety**
 - **Fostering process safety in chemical engineering and related science and engineering education, and**
 - **Promoting process safety as a key industry value**



CCPS
CENTER FOR
CHEMICAL PROCESS SAFETY

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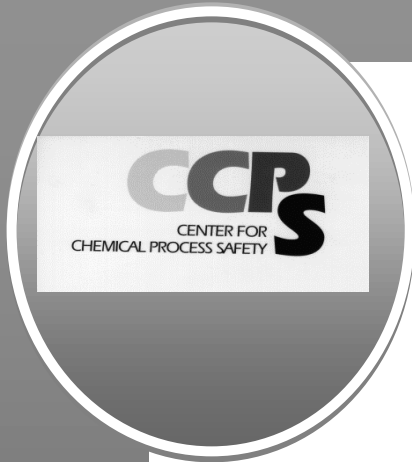
OVERVIEW

CCPS DEPENDS ON ITS:

- Sponsors - 80 currently who provide
 - funds
 - expertise
 - committee members

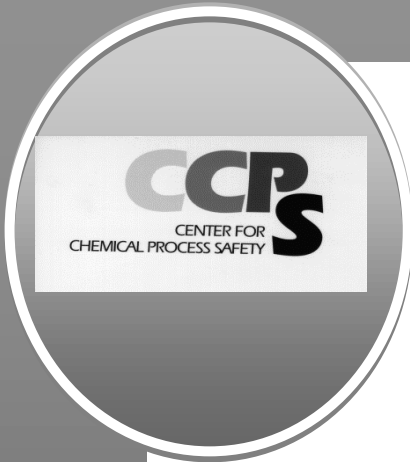
TO DO ITS WORK, WHICH TAKES THE FORM OF:

- Publications - 70 books to date with 70,000 copies in circulation worldwide
- Meetings - 14 major meetings since 1986
- Education - 112 major engineering schools have membership in Safety and Chemical Engineering Education (SChE) Program
- Research - initiatives include establishing an industry-wide process safety incident database, creating an equipment reliability database, and developing quantitative measurement of process safety management performance



STRUCTURE

- **Managing Board**
- **Advisory Board**
- **Technical Steering Committee**
- **Project Subcommittees**
- **Staff**

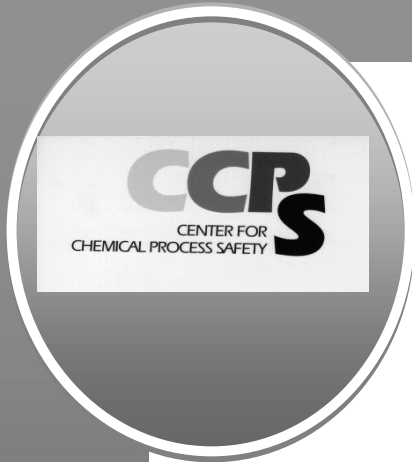


MANAGING BOARD

- **AIChE oversight role**
- **Comprised of**
 - **AIChE Executive Director (Chair)**
 - **AIChE Executive Committee**
 - **Three members of AIChE Directorate**
 - **CCPS Director**
- **Meets annually**

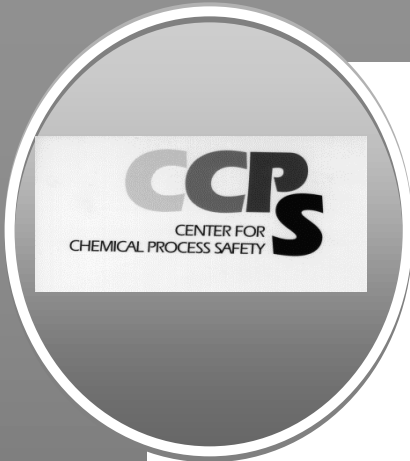
ADVISORY BOARD

- **Brings together high-level representatives from sponsor companies and government agencies to review policies and undertakings and to provide advice on the scope and direction of programs**
- **Comprised of**
 - **Senior management representatives from sponsors**
 - **Representatives from academia, appropriate government agencies, and public interest groups**
 - **CCPS Director (Chair)**
- **Meets annually**



TECHNICAL STEERING COMMITTEE

- **The center's primary operating group**
 - provides technical direction to activities
 - selects and prioritizes projects
 - reviews project status and budget performance
- **Provides a forum for exchange of information**
 - benchmarking and learning
- **One member from each sponsor**
- **Meets three times per year**



PLANNING SUBCOMMITTEE

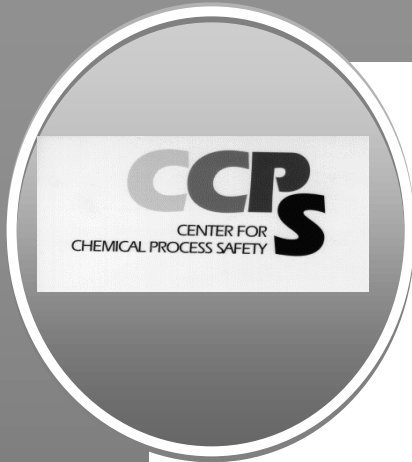
- **Established as a standing committee by the Technical Steering Committee**
- **No more than 10 members selected largely from the Technical steering Committee with appropriate CCPS staff membership**
- **Develops a prioritized list of project proposals each year for consideration by the Technical Steering Committee**
- **Issues appropriate reports to the Technical Steering Committee to provide guidance for deliberations and decisions**

PROJECT SUBCOMMITTEES

- **Subcommittees of the Technical Steering Committee**
- **Established for each approved CCPS project or group of associated projects**
- **Working teams comprised of 6 to 12 experts from sponsor companies, one of whom serves as Chair**
- **A member of the CCPS staff is assigned to each subcommittee to provide administrative and technical support**
- **Fully responsible for development and completion of assigned projects in accordance with the scope defined by the Technical Steering Committee and within the budget constraints established by the CCPS Director**

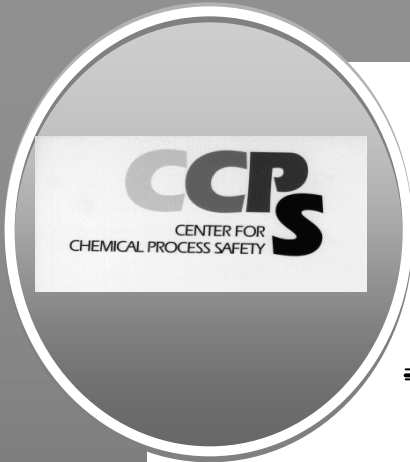
STAFF

- **Director - Jack Weaver**
- **Senior Manager - Syl Turicchi**
- **Office Manager - Clare Bennett**
- **Staff Consultants - 10 to 12 (part time)**



PROCESS SAFETY MANAGEMENT

- **PSM differs from the personnel safety activities that have been in place in industry for many years**
- **PSM is the application of management systems to the identification, understanding, and control of process hazards**



Process Safety Management

12 Key Elements



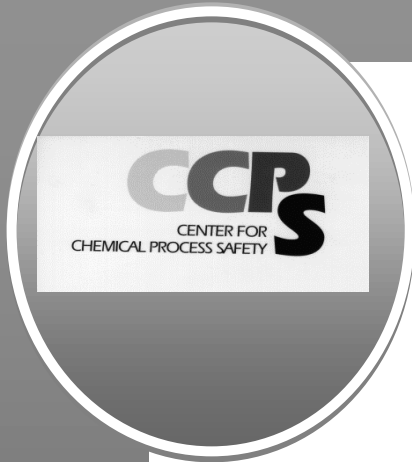
- **Accountability, Objectives & Goals**
- **Process Knowledge & Documentation**
- **Capital Project Review and Design Procedures**
- **Process Risk Management**
- **Management of Change**
- **Process and Equipment Integrity**
- **Human Factors**
- **Training & Performance**
- **Incident Investigation**
- **Company Standards, Codes & Regulations**
- **Audits and Corrective Action**
- **Enhancement of Process Safety Knowledge**



CHARACTERISTICS OF A MANAGEMENT SYSTEM

○ *PLANNING*

- **Explicit Goals and Objectives**
- **Well-defined Scope**
- **Clear-cut Desired Outputs**
- **Consideration of Alternative Achievement Mechanisms**
- **Well-defined Inputs and Resource Requirements**
- **Identification of Needed Tools and Training**



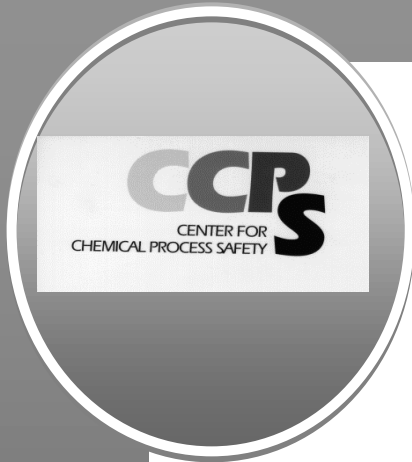
CHARACTERISTICS OF A MANAGEMENT SYSTEM

○ *Organizing*

- **Strong Sponsorship**
- **Clear Lines of Authority**
- **Explicit Assignments of Roles and Responsibilities**
- **Formal Procedures**
- **Internal Coordination and Communication**

○ *Implementing*

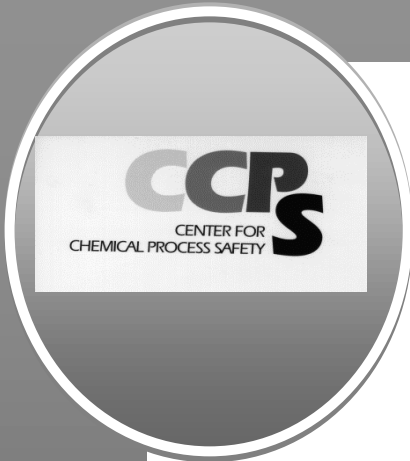
- **Detailed Work Plans**
- **Specific Milestones for Accomplishments**
- **Initiating Mechanisms**



CHARACTERISTICS OF A MANAGEMENT SYSTEM

○ *Controlling*

- **Performance Standards and Measurement Methods**
- **Checks and Balances**
- **Performance Measurement and Reporting**
- **Internal Reviews**
- **Variance Procedure**
- **Audit Mechanisms**
- **Corrective Action Mechanisms**
- **Procedure Renewal and Reauthorization**



SUCCESSFUL PROCESS SAFETY MANAGEMENT

- **Technology alone is not enough:**
 - **Relying on experience is insufficient**
 - **Just because a major accident has never occurred, doesn't mean it won't**
 - **Business managers must be involved**
 - **Safety management strategy is critical**

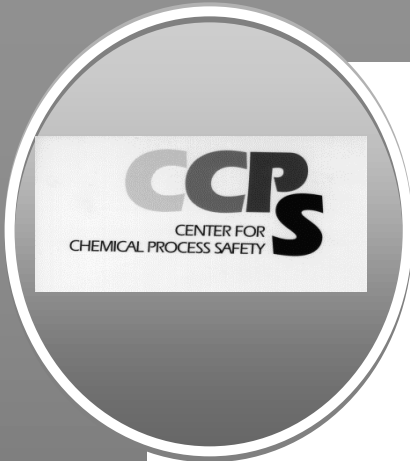


SUCCESSFUL PROCESS SAFETY MANAGEMENT

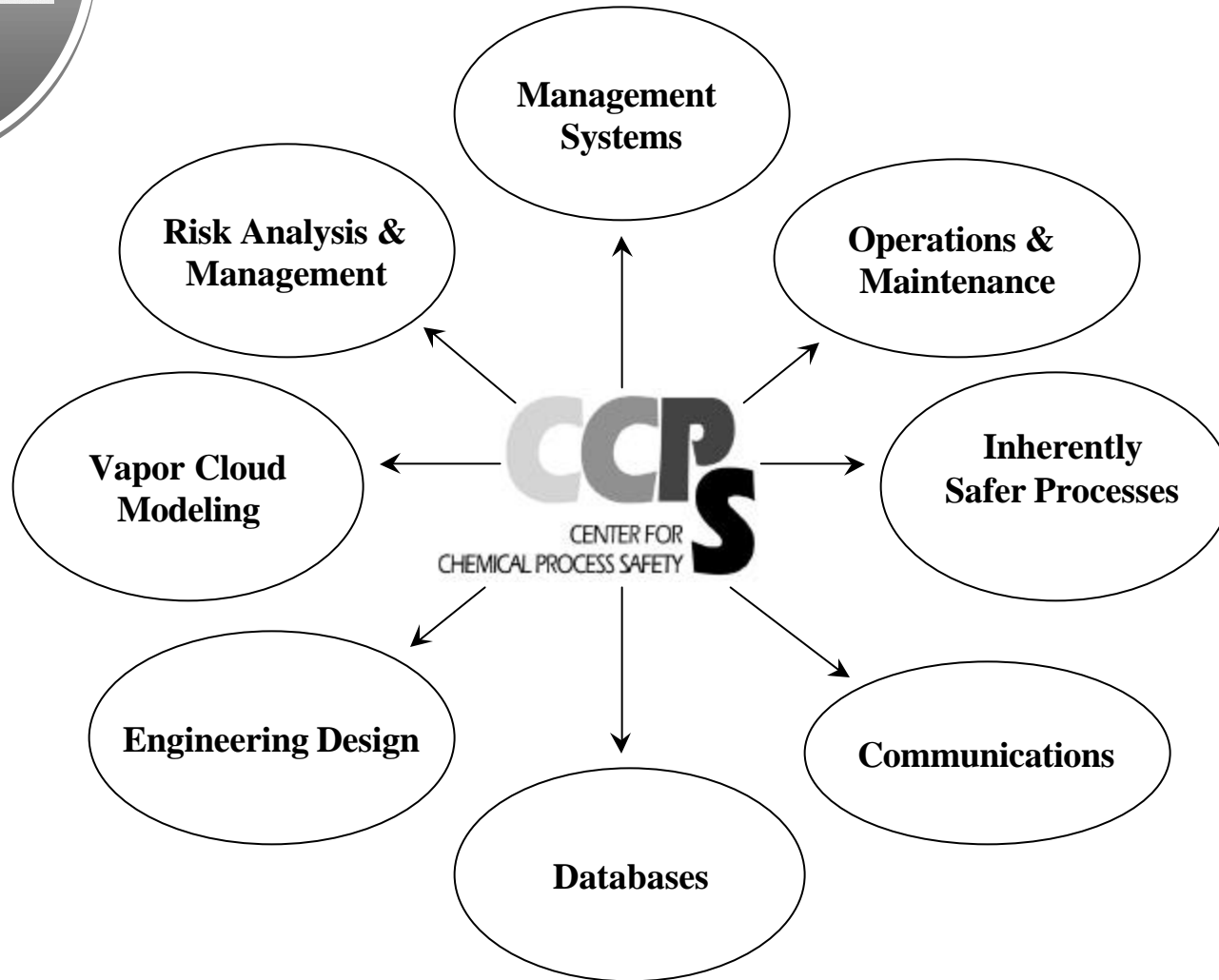
- **Three things are certainly true:**
 - **In effective safety cultures, individuals *OWN* actions taken to improve safety rather than seeing them as imposed from the outside**
 - **This requires not only senior management commitment but also a reflection of that commitment in the action of staff at all levels**
 - **Safety management programs are less than successful because they have been developed piecemeal in response to particular accidents or regulations; a comprehensive safety management strategy is critical to success**

The CCPS logo is a circular emblem with the letters 'CCPS' in a stylized font, and the text 'CENTER FOR CHEMICAL PROCESS SAFETY' below it.

CCPS
CENTER FOR
CHEMICAL PROCESS SAFETY



CCPS FOCUS AREAS





CCPS STAKEHOLDERS

