



GLOBALIZATION



EDUCATION



MEMBERSHIP

CCPS has your Professional Development Covered from the Classroom to the Frontlines...



Credentialing



Faculty Workshops



Academy

Early Career Professional



SACHE



Student Boot Camps

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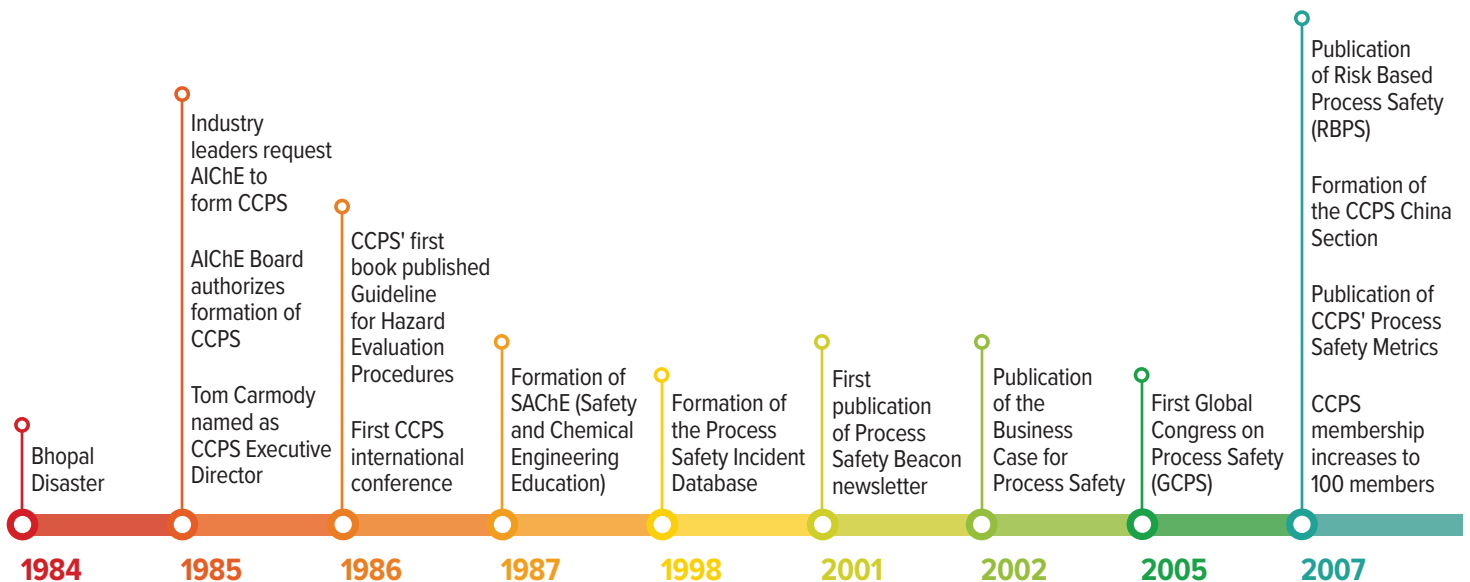
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The CCPS Story

Just after midnight on December 3, 1984, water contamination of a tank of methyl isocyanate in Bhopal, India, initiated a series of events that led to a catastrophic toxic release, killing more than 3,000 residents and injuring over 100,000.

In February of 1985, industry leaders asked the American Institute of Chemical Engineers (AIChE) to lead a collaborative effort to eliminate catastrophic process safety incidents. On March 23, 1985, AIChE formed the Center for Chemical Process Safety (CCPS); CCPS completed *Guidelines for Hazard Evaluation Procedures* a short time later.

As we enter 2020, we pause to reflect on the progress we've made while we continue to honor the memories of those lost in Bhopal by striving for a future where we can eliminate all process safety incidents. Toward this end, we remain committed to learning from incidents, advancing the practice, and collaborating broadly to implement safety measures. Vision 20/20 serves as our road map. Come join the global community committed to Process Safety—be ready for the future by working to create it.



Message from the Executive Director & CEO



Shakeel Kadri
CCPS Executive
Director & CEO

As we begin a new decade, I want to pause and reflect on the Bhopal Gas tragedy, which

occurred 35 years ago, killing more than 3,000 residents and injuring over 100,000 people. We honor the memories of those who lost their lives and suffered from this tragedy, and recognize the progress that CCPS and other process safety organizations have made to expand the message of process safety worldwide, to protect people, property and the environment.

CCPS' mission is to eliminate all process safety incidents, towards that end, CCPS is enhancing its initiatives from the classroom to the frontlines, providing exciting new opportunities to learn, train and develop throughout all levels of one's career. Whether it be online, face-to-face, networking regionally or internationally, CCPS is the home for process safety worldwide.

In 2019, CCPS held four global-regional conferences. The 15th Global Congress on Process Safety (GCPS) in New Orleans, LA brought almost 1000 attendees from about 300 organizations; the 4th Europe Conference on Process Safety and Big Data, in Frankfurt, Germany drew 115 delegates from 62 organizations; the 5th Global Summit on Process Safety (GSPS), held in Singapore, was

attended by nearly 320 delegates and highlighted the Vision 20/20 implementation in the region; and the year ended with the 7th CCPS China Conference, held in Suzhou Bay, China, that brought together 1000 delegates from more than 15 countries.

CCPS expanded its engagement through two global face-to-face Technical Steering Committee (TSC) meetings as well as 3 virtual TSC Meetings. There were also six regional TSC meetings around the world in; New Delhi, Leverkusen, São Paulo, Mumbai, Calgary and Suzhou, connecting approximately 800 members and non-members to important learning and networking opportunities. Two visits to Brazil provided important opportunities to engage, collaborate and connect with member and nonmember companies throughout the region. Topics discussed included process safety challenges in mining, biofuels, and metal operations.

2019 year saw record growth in CCPS on a global scale, with 31 new members, the majority of which were outside the United States, including our first new members located in Israel and Chile. In an effort to support our continued global expansion, the CCPS Planning and Operations Committee was restructured to include more global representation to provide synergies to support the planning of the GCPS and in the development of future projects.

The Undergraduate Process Safety Education program continues to progress, with an additional eight new interactive SChE modules. Six faculty workshops were held and hosted by Dow, Chevron, BASF, LyondellBasell, Bayer and ExxonMobil. Additionally, seven Process Safety Student Boot Camps were conducted with a combined attendance of 265 students. The CCPS Credentialing (CCPSC) program completed three certification exams in 2019, with 192 process safety specialists becoming CCPSC certified to date. Five CCPS book titles were published in 2019, including 2 books translated into Chinese. And the *Beacon* celebrated 18 years of continuous publication and is available in 40 languages.

When CCPS Vision 20/20 was created, it was envisioned that by the year 2020, leaders in process safety would value and demonstrate actionable commitment to the Vision 20/20 tenets that prevent, minimize, and mitigate process safety incidents. As 2020 begins, I am encouraged that progress has been made; however, much broader advancements are needed. The CCPS Vision 20/20 team has heard your feedback and is working to expand its tools and guidance to improve its deployment support structure.

As we close the chapter on this decade, and begin a new one, I want to thank you for your continuing support. I look forward to a very productive and safe 2020.



Highlights from the Year

2019: Expanding global and regional engagement and responsible collaboration

Our growing CCPS community

And the list continues to grow, from...



31

NEW MEMBER COMPANIES HAVE JOINED CCPS



→ SINGAPORE

→ SAUDI ARABIA

→ CHINA

→ CANADA

→ USA

→ KUWAIT

→ INDIA

→ GERMANY

→ COLOMBIA

→ AFRICA

→ MALAYSIA

→ ISRAEL

→ CHILE

→ BRAZIL

Face-to-face meetings

CCPS WELCOMED MORE THAN
2,800
ATTENDEES



HELD OVER
15
CONFERENCES AND MEETINGS

HIGHLIGHTS INCLUDED:

- The **15th Global Congress on Process Safety** that was attended by **1,000 registrants** from over **300 companies** and **30 countries**
- The **7th CCPS China Conference on Process Safety** had nearly **1,000 attendees**, while the pre-conference workshop attracted **130 attendees**.
- The **5th Singapore CCPS Global Summit** was attended by **250 delegates** from around the world.

Resources to explore

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INDUSTRY TENETS

Since 2012, companies have employed **Vision 20/20** to create a road map for continuous improvement of their process safety efforts. Vision 20/20 is driven by five industry tenets of **committed culture; compliance with standards; intentional competency; vibrant management systems; and enhanced applications of lessons learned**. It is further enriched by four global societal themes, including; enhanced stakeholder knowledge; meticulous verification; harmonization of global standards; and responsible collaboration.



The **Process Safety Beacon**, translated into 40 languages, continues to be a go-to resource for our members.



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Companies have participated in programs that have translated CCPS books and tools into spanish, chinese, and portuguese.

Get Your Company Involved



JOIN CCPS as a member company to help prevent catastrophic process safety incidents.

NOT A CCPS MEMBER YET?

Join CCPS: aiche.org/ccps

Email ccps@aiche.org or call 1.646.495.1371



VOLUNTEER for a CCPS project subcommittee. Share your knowledge and help shape industry best practices. There are several ongoing projects that can be found on the CCPS website. Highlight your expertise by contributing to project development or participate as a peer reviewer. Key contributions will be recognized in the books published. This is a chance to be immortalized as an expert in your field.

Your company must be a CCPS member to volunteer for a project. Contact a CCPS staff member or submit the form on the CCPS website (Note: Please log in as a member.)

VOLUNTEER TODAY: aiche.org/ccps



EDUCATE your entire workforce by getting involved with the CCPS education curriculum, with face-to-face instructor-led courses including *Process Safety Boot Camp* (CH 900) / *Foundations of Process Safety* (CH 910), *Incident Investigation* (CH901), *Recognizing Catastrophic Incident Warning Signs* (CH850), and our many eLearning courses on process safety and related topics.

aiche.org/ccps



SHARE your expertise by participating in the Global Congress on Process Safety (GCPS), Global Summit on Process Safety (GSPS), a CCPS Regional Conference, or a Global or Regional Technical Steering Committee meeting.

CONFERENCES, MEETING & EVENTS:

aiche.org/ccps



MODEL your company as a process safety champion for CCPS publications and tools.

CCPS@aiche.org



MENTOR your new employees by bringing them to the Young Professionals program at the GCPS.

aiche.org/community/sites/committees/young-professionals

As a new member, link with an existing member company to gain valuable knowledge and improve your CCPS experience.



COMMUNICATE the message by forwarding CCPS' *Process Safety Beacon* to your colleagues.

Sign up for the **CCPS Beacon**:

aiche.org/ccps/resources/process-safety-beacon



CONNECT with your process safety peers through CCPS LinkedIn.

Join **CCPS LinkedIn Group**:

[linkedin.com/groups/105603](https://www.linkedin.com/groups/105603)



PARTICIPATE by getting your company involved in CCPS' Vision 20/20 Responsible Collaboration activities throughout the year.

Contact **Louisa Nara** for more

information: louna@aiche.org



CERTIFY your knowledge. The program for obtaining the "CCPS Certified" credential is gaining momentum and recognition around

the globe. There are several opportunities per year to take the CCPS certification examination. The assessment process is rigorous and verifies that your knowledge is broad, deep and current. Earning the credential will gain you recognition as one of the elite certified experts in the field of Process Safety.

Learn more about the process: aiche.org/ccps/resources/certified-process-safety-professional



ADVERTISE your company's services, logo and website for FREE at CCPS' online Professional Services Directory. This opportunity

is only available to CCPS member companies. For information on how to get your company listed, please contact Michele Horwitz at michh@aiche.org.

Review current listings at: aiche.org/ccps/community/members/directory

Resources to Explore

Books Published in 2019

- *Process Safety Leadership from the Boardroom to the Front Line*
- *G/L for Investigating Process Safety Incidents, 3rd Ed*
- *More Incidents that Define Process Safety*
- *G/L for Inherently Safer Chemical Processes: A Life Cycle Approach, 3rd Ed*
- *Guide to Making Acute Risk Decisions*



Ongoing 2020 Book Projects

- *Guidelines for Process Safety during Transient Operations*
- *Risk Based Process Safety in Pilot Plants & Laboratories*
- *Process Safety in Upstream Oil & Gas*
- *Guidelines for Updating & Revalidating PHA, 2nd Ed.*
- *Lessons Learned Years Later – In the Aftermath of Incidents*
- *Golden Rules of Process Safety for Select Technologies*

Process Safety Beacon

Sponsored and produced by CCPS, the *Process Safety Beacon* is a resource aimed at delivering process safety messages to plant operators and other manufacturing personnel. The monthly one-pager, often used as a training tool, covers a breadth of process safety topics. Each issue discusses a real-life accident, and describes the lessons learned and practical means to prevent a similar accident in your plant. With an estimated distribution of a million readers, and published in 40 languages, the *Beacon* is CCPS' most widely read publication.



[aiche.org/ccps/resources/process-safety-beacon/subscribe](https://www.aiche.org/ccps/resources/process-safety-beacon/subscribe)

Process Safety Incident Database (PSID)

PSID is a lessons learned tool, containing over 800 incidents, and 425 users from over 85 CCPS member companies. To enhance the benefit of the database and to expand the breadth of knowledge in the system, members are strongly encouraged to submit at least one incident per year into the database. To ensure company privacy, CCPS removes all identifiable company information from the incidents before adding them into the database.



If you're interested in contributing to this lessons learned database, please contact Christa Pennino at chrip@aiche.org. To register for PSID, please go to <http://psidnet.com>.

CCPS Glossary

CCPS approved definitions for chemical process safety verbiage.


[aiche.org/ccps/resources/glossary](https://www.aiche.org/ccps/resources/glossary)


Process Safety Incident Evaluation (PSIE)

The **Process Safety Incident Evaluation app** lets users evaluate a chemical incident against safety indicators.

The PSIE app has three main components: the Process Safety Incident (PSI) Evaluation Questionnaire, the Severity Weighting Questionnaire, and the Chemical and Mixtures Database.



 <https://itunes.apple.com/us/app/process-safety-incident-evaluation-psie/id1219287652?mt=8>

 https://play.google.com/store/apps/details?id=com.aiche.ccps.psie&hl=en_US

RAST and CHEF

The **Risk Analysis Screening Tool (RAST)** is an Excel based software that is used to help validate hazard scenarios and evaluate process risks. RAST is an excellent tool for assisting Process Hazards Analysis (PHA) teams, managing the risks associated with changes to a process, or evaluating and potentially reducing the risks of a process during its design. The user inputs information about the chemicals, equipment and unit operations, the process conditions, and the facility

layout. The RAST software validates potentially hazardous scenarios, uses industry guidelines for event frequency and consequence impact, and estimates the risk based on the company-specific risk criteria. Users can select scenarios for further assessment through a Layer of Protection Analysis (LOPA). The RAST software was upgraded and reissued on March 25, 2019.

Chemical Hazards Engineering Fundamentals (CHEF) is a Calculation Aid for those interested in understanding the mathematical framework of RAST. CHEF provides the background equations that are used.

Tools, user's manuals, and case studies are on the CCPS website: aiche.org/ccps/resources/risk-analysis-screening-tool-rast-and-chemical-hazard-engineering-fundamentals-chef.

Safe Work Practices (SWP)

Various SWP's are documented on the CCPS website. The content is designed to reach, and provide value to a very broad audience, including operations, maintenance and engineering personnel in the process industries (chemical, petrochemical, electronics, oil & gas, LNG, and others). It is also intended to appeal to management personnel as they attempt to justify the investment within their organization. This information has been tailored to reach large and small global organizations.

Specific notes and potential vulnerabilities are presented, allowing users to personalize safe work practices in order to raise a sense of vulnerability with respect to potential hazards.

In 2019, **six** new Safe Work Practices have been added to the website. CCPS member companies who contribute to the SWP initiative will receive special acknowledgement.

aiche.org/ccps/resources/tools/safe-work-practices

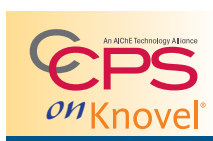
Risk Based Process Safety (RBPS) Resources

This web based collection of resources are for each of the 20 elements of Risk Based Process Safety.

aiche.org/ccps/resources/rbps

CCPS on Knovel

As a CCPS member, your organization is entitled to a 35% discount on the CCPS collection on Knovel. For more information about subscribing to the CCPS collection on Knovel, contact Knovel directly at CCPSonKnovel@elsevier.com.



Knovel (www.knovel.com) offers the largest standalone collection with several titles that contain importable Excel data. Included in the collection are all CCPS Guidelines and Concepts titles including:

- *Process Safety Leadership from the Boardroom to the Front Line*
- *G/L for Investigating Process Safety Incidents, 3rd Ed*
- *G/L for Integrating Process Safety into Engineering Projects*
- *Bow Ties in Risk Management: A Concept Book for Process Safety*
- *Loss Prevention Symposium (LPS)*
- *International Conference and Workshop Proceedings (CCPS)*

Evergreen/LOPA Database

The Evergreen/LOPA database is a simplified quantitative tool for analyzing and assessing risk. The tool was originally developed by user organizations during the 1990's as a streamlined risk assessment tool, using conservative rules and order of magnitude estimates of frequency probability and consequence severity. The resource is free for CCPS members.

aiche.org/ccps/resources/tools/lopa

Professional Services Directory

The Professional Services Directory on the CCPS website is a fantastic free opportunity to feature your company's services, logo, and website, and posting is only available to CCPS member companies. This online resource and benefit will make CCPS end-user member companies aware of your company as the service provider.

Chemical Reactivity Worksheet

The Chemical Reactivity Worksheet (CRW) is a free software program you can use to find the chemical reactivity of thousands of common hazardous chemicals, the compatibility of absorbents, and the suitability of materials in the construction of chemical processes. The most recent update (version 4.0.3) was released on July 1, 2019. The update includes a mixture cloning function, mixture migration utility, and is compatible with the latest PC and Mac operating systems.

aiche.org/ccps/resources/chemical-reactivity-worksheet

CCPS has your Professional Development Covered from the Classroom to the Frontlines...



Student Boot Camps

Student Boot Camps, sponsored by CCPS member companies, provide an introduction to engineering students about how leading companies across a variety of chemical process industry (CPI) sectors manage process safety to prevent catastrophic accidents involving toxic, highly reactive, and flammable materials. These events are part of the Undergraduate Process Safety Learning Initiative (UPLSI), a core priority of the AIChE Foundation's Doing a World of Good campaign.

This year, CCPS organized six boot camps as well as the first Student Process Safety Workshop in China.

- **2019 Praxair Sponsored CCPS Student Boot Camp**
February 1-2 | Villanova University
- **2019 Trinseo Sponsored CCPS Student Process Safety Workshop**
March 9 | Nanjing Tech University
- **2019 Covestro Sponsored CCPS Student Boot Camp**
April 12-13 | Ohio University
- **2019 AdvanSix Sponsored CCPS Student Boot Camp**
August 23-24 | Virginia Commonwealth University
- **2019 Bayer Sponsored CCPS Student Boot Camp**
September 13-14 | Brigham Young University
- **2019 Syngenta and Chemours Sponsored CCPS Student Boot Camp**
September 21-22 | North Carolina A&T State University
- **2019 Ecolab Sponsored CCPS Student Boot Camp**
September 27-28 | University of Minnesota, Duluth



Syngenta and Chemours Sponsored CCPS Student Boot Camp



AdvanSix Sponsored CCPS Student Boot Camp



Bayer Sponsored CCPS Student Boot Camp



Launching your career with a strong process safety foundation to help create a safer, more livable world...

...begins in the classroom. As part of AIChE's Doing a World of Good campaign, and in conjunction with the Center for Chemical Process Safety (CCPS), industry and academia have come together to launch a major global initiative to improve and accelerate process safety education at the university level so you can graduate with an understanding of process safety.



26 FREE Courses	On-Demand	Interactive	Easy-to-Use
<ul style="list-style-type: none">→ An Introduction to Managing Process Safety Hazards→ Introduction to Process Safety→ NEW! Lab Safety→ Chemical Process Safety in the Chemical Process Industries→ NEW! Dust Explosion Control→ Hazard Recognition→ Identifying & Minimizing Process Safety Hazards→ Process Safety Lessons Taught from Experience→ Runaway Reactions→ Chemical Reactivity Hazards→ Explosion Hazards→ Fire Hazards→ Hazards and Risk: Introduction to Pressure Protection	<ul style="list-style-type: none">→ Hazards and Risk: What Can Go Wrong?→ Hazards and Risk: Safeguards Other Than Relief Systems→ Source Models→ Toxicological Hazards→ Understanding Hazards & Risk→ NEW! Process Safety Ethics – A Brief Introduction→ NEW! Atmospheric Dispersion→ NEW! Hazards and Risk: Introduction to Hazard Identification and Risk Analysis→ NEW! Risk Based Process Safety Manager Risk - Commit to Process Safety→ Common Chemicals and Their Major Hazards→ Inherently Safer Design→ Risk Based Process Safety - Manage Risk: Operations	<ul style="list-style-type: none">→ NEW! Risk Review Using LOPA (Layer of Protection Analysis)→ The Role of Inert Gases in Process Safety→ NEW! Risk Based Process Safety - Training & Procedures	<p>Find resources and learn more at aiche.org/sache</p>

ECP Early Career Professionals

Process Safety training and the understanding of practical aspects of day-to-day work are typically lacking for those early in their career. As such, in July 2019, a subcommittee of Early Career Professionals (ECP) in Process Safety was established. The subcommittee's charter is to identify the needs of the ECP to execute their responsibilities in the Process Safety field. Because the level of training ECPs receive varies prior to starting their careers, focused courses are needed. The subcommittee will identify key focus areas that ECPs encounter, to determine the best in-class training available and to identify where the gaps are. CCPS intends to create a program to fill these gaps with training geared to the target population. In addition to the traditional delivery methods, transformational technologies, such as augmented reality and virtual reality, will also be considered.

For more information about the program, or if you would like to volunteer for the subcommittee, please contact Anil Gokhale at anilg@aiche.org.



AIChE[®] Academy

is the place for process safety training

Find CCPS Courses, Plus Much More

AIChE Academy brings a full array of education and training resources to CCPS member companies and their employees. Find CCPS courses and process safety themed webinars all in one convenient place. You can search by topic, availability of CEUs and PDHs, delivery method, skill level - even location. **Start learning today.**



Public Sessions, In-Company Training, and eLearning Courses

Embodying CCPS' practice-leading guidelines, and developed by highly experienced industry professionals, process safety courses from the AIChE Academy are offered both online and in-person. Sign up for single or multiple group seats (onsite or online), Academy has just the training you and your staff need.

eLearning Courses

- 20 Elements of Risk Based Process Safety (RBPS)
- Hazard Identification for Operators and Maintenance Workers
- HAZOP Studies
- Layer of Protection Analysis (LOPA)
- Management of Change
- OSHA Process Safety Management Review
- Process Safety Leadership for Front-Line Supervisors
- Process Safety Management for Biodiesel
- Process Safety Management for Bioethanol
- Process Safety Management Overview
- The Importance of Codes and Standards for Process Safety
- What Every New Engineer Needs to Know about Process Safety
- Plus more than 20 SACHe modules on all aspects of Process Safety

Public Courses

- CCPS / RAPID Webinar: The Link Between Process Safety & Process Intensification
- Advanced Concepts for Process Hazard Analysis
- Hazard Identification for Operations and Maintenance Workers
- HAZOP Studies and Other PHA Techniques for Process Safety and Risk Management
- Incident Investigation and Root Cause Analysis
- Inherently Safer Design
- Managing Process Safety Risks During Organizational Change
- Overview of Risk Based Process Safety
- Process Safety Boot Camp/Foundations of Process Safety
- Recognizing Catastrophic Incident Warning Signs
- Senior Leaders and Process Safety: The Role and the Responsibility
- The OSHA Regulatory Approach to Process Safety Management

Some eLearning Courses are available in Spanish, Portuguese, and Mandarin. Please visit aiche.org/academy for details.

CCPS MEMBERS BENEFIT IN TWO WAYS

DISCOUNTED FEES: Employees of CCPS member companies enjoy the low member rate for all CCPS and SACHe courses. And member companies are entitled to discounted rates on group training, both onsite and online. **For more information, contact academy@aiche.org.**

FREE SEATS: As each new eLearning course is launched, CCPS Member companies are entitled to three free seats.

For more information, contact CCPS@aiche.org.



CCPS Faculty Workshops

Faculty Workshops sponsored by CCPS member companies show chemical engineering faculty how process safety is put into industrial practice and demonstrates the importance of process safety to the design and operation of a chemical plant. These events are part of AIChE's Doing a World of Good campaign.

→ **2019 LyondellBasell Sponsored CCPS Faculty Workshop**
January 6-9, 2019 | Houston, TX

→ **2019 Dow Sponsored CCPS Faculty Workshop**
June 10-13, 2019 | Midland, MI

→ **2019 BASF Sponsored CCPS Faculty Workshop**
July 22-25, 2019 | Wyandotte, MI

→ **2019 Bayer Sponsored CCPS Faculty Workshop**
July 29 - August 1, 2019 | Muscatine, IA

→ **2019 Chevron Sponsored CCPS Faculty Workshop**
August 4-7, 2019 | Richmond, CA

→ **2019 ExxonMobil Sponsored CCPS Faculty Workshop**
August 12-15, 2019 | Baytown, TX



Bayer Sponsored CCPS Faculty Workshop



Dow Sponsored CCPS Faculty Workshop

For more information: [aiche.org/ccps/resources/conferences/events/faculty-workshops](https://www.aiche.org/ccps/resources/conferences/events/faculty-workshops)



CCPS Process Safety Professional Certification

Become recognized as an expert in Process Safety by passing the CCPS Process Safety Certification (CCPSC) exam and show your employer and colleagues that you have the depth and breadth of experience needed to excel in your career.

The exam to obtain your CCPSC credential, offered multiple times per year, is receiving global recognition and is in high demand. CCPS now has almost 200 Process Safety experts worldwide.

The requirements to qualify for this rigorous exam include references, academic and long term employment information, and an in-depth knowledge of the CCPS Risk Based Process Safety concepts and applications.

For more information about the CCPSC certification program, please go to [aiche.org/ccps/resources/certified-process-safety-professional](https://www.aiche.org/ccps/resources/certified-process-safety-professional)

To maintain your credentials, renewal is required annually via continuing education.





NORTH AMERICA

15TH GLOBAL CONGRESS ON PROCESS SAFETY

The 15th Global Congress on Process Safety (GCPS) was held March 31 – April 2, 2019 at the Hilton New Orleans Riverside. This world premier process safety conference hosted 1,000 attendees from over 300 companies and 30 countries. Attendees had the opportunity to hear and see featured keynote presentations, followed by 195 technical and 95 poster presentations.

Following the conclusion of the GCPS, a full day CCPS Technical Steering Committee Meeting with more than 160 attendees was held. Topics included:

- Updates and challenges from the CSB
- Regulatory agenda updates by the U.S. DOL/OSHA Office of Engineering Safety
- Chemical National Emphasis Program updates (NEP)



15th GCPS Planning Committee



Shakeel Kadri presents a token of thanks to Matthew C. Koenings after Matthew's keynote speech on "The Upside of UPSLI: Ensuring a Safer Industry through Undergraduate Process Safety Education"



Louisa Nara and Pete Lodal presenting at the Technical Steering Committee Meeting in New Orleans, LA



CCPS Technical Steering Committee Meeting in New Orleans, LA

4TH ANNUAL CANADIAN TECHNICAL STEERING COMMITTEE MEETING

The 4th Annual Regional Canadian Technical Steering Committee Meeting was held in Calgary and hosted by Inter Pipeline on September 12, 2019. A record setting 70 people and 36 companies registered for the meeting, reflecting a 36% increase in company attendance over last year. Also, for the first time this year, Doctoral Candidates from the University of Alberta attended to present their research. Panel sessions were held on the subjects of Safe Operating Procedures, as well as Corrective Actions Management.



FALL TECHNICAL STEERING COMMITTEE MEETING

The Fall Technical Steering Committee (TSC) Meeting was held November 6-7, 2019 in Sugar Land, TX and attended by over 80 members, each of who contributed in workshop breakout groups, presentations and incident sharing. The evening concluded with valuable networking at the TSC reception and dinner.

Members gave very interesting presentations this year on Process Safety Management, Improvements and Learnings, Process Safety in the Steel Industry, Managing Process Safety during Mergers and Divestitures, and updates on their projects' status.





LATIN AMERICA

Process Safety Outreach in Latin America

CCPS REGIONAL MEETINGS

CCPS gathered with a total of 90 people from 20 member and nonmember organizations in São Paulo and Rio de Janeiro from May 8-15, 2019. CCPS Executive Director & CEO, Shakeel Kadri, attended the events alongside Latin America Regional Manager, Marvin Szoychen, and CCPS Staff Consultant, Alexandre Glitz. The attendees discussed process safety challenges in mining, biofuels, and metals operations. While in Brazil, CCPS held a regional meeting at ABIQUIM's São Paulo headquarters on May 8, 2019. Representatives from DuPont, FM Global, Chevron, and Johnson & Johnson were present.



CCPS also met with various member and non-member companies from May 9-15, 2019. Organizations included Usiminas and Raízen in São Paulo, as well as IBP and Petrobras in Rio de Janeiro.



REGIONAL MEETING AT GCPS

CCPS organized a Latin America Regional Meeting during the 15th Global Congress on Process Safety. 25 attendees participated, and discussed process safety in the mining and metallurgical industries.



AÇOBRAZIL CONFERENCE

CCPS attended the AçoBrazil Conference in Brasília from August 20-21, 2019. Shakeel Kadri was a keynote speaker and conducted a pre-conference workshop on Process Safety Management.



PROCESS SAFETY BOOT CAMP

CCPS organized a Foundations for Process Safety Boot Camp in Costa Rica from July 29 - August 2, 2019. Sponsored by Cargill, the event was translated for its 35 attendees.



EUROPE

4TH EUROPEAN REGIONAL TECHNICAL STEERING COMMITTEE MEETING

The meeting held on March 6-7, 2019 in Leverkusen, Germany, hosted by Covestro, was represented by 24 attendees from 18 CCPS member and non-member companies. The day and a half meeting featured incident sharing, case studies, new product development, a round table discussion, as well as corporate presentations specific to each company's lessons learned on varying topics of interest.



PROCESS SAFETY IN EUROPE, ORGANIZATIONS, NETWORKS AND THE INDUSTRY

The Center for Chemical Process Safety (CCPS) and The European Chemical Industry Council (Cefic) jointly hosted the European Process and Plant Safety Conference in Brussels, Belgium on September 11, 2019. Forty-one persons attended this event from 33 organizations, including 9 CCPS member companies. The one-day conference consisted of 2 keynote presentations, 10 technical talks, and 3 sessions.

2019 EUROPEAN CONFERENCE ON PROCESS SAFETY AND BIG DATA

Organized by CCPS and EPSC, and hosted at the DECHEMA House in Frankfurt am Main, Germany on October 1-2, 2019, the conference boasted 116 attendees from 39 organizations, 24 of which were CCPS member companies. The conference opened with a Keynote on the subject of “Integrating the Digital Field Worker,” followed by a Panel on “Process Industry’s Evolution towards Big Data for Process Safety: Challenges and Successes.” Panelists were from Dow, DuPont, Total, and Shell. Three additional sessions were conducted throughout day one, on topics which included:

- Tools to Avoid Human Errors Session
- Data Lakes / Intelligent Dashboards / KPIs and Big Data Analytics
- Big Data Analytics and Standards

Day two, featured two Keynotes, the first entitled “Applying Safety Analytics for Improving Organizational Risk Capability to Reduce Incident Frequency and Severity: From Heavy Industry to the Modern Tech World” and the second on “Artificial Intelligence for Process Safety: Past, Present, and Future.” This was followed by a panel discussion on Current Technology Developments for EHS Digital Solutions. Panelists were from Sphera, Honeywell and IBM.

The day concluded with sessions on the following topics:

- Practical Examples/Case Studies and Plant Monitoring Session
- Robotics in Support of Safety and Predictive Maintenance
- Standard and Methods and Augmented Reality Session





ASIA PACIFIC & MIDDLE EAST

3RD KUWAIT INTERNATIONAL HEALTH, SAFETY, SECURITY AND ENVIRONMENT (KIHSSSE) CONFERENCE • FEBRUARY 18-20, 2019

CCPS staff played a key role at the Kuwait International Health, Safety, Security and Environment (KIHSSSE) 2019 Conference. The 2019 event stood at the forefront of blending HSE as a practice to attain Business Excellence under the theme, “Transforming HSE Culture for a Resilient Future.”

CCPS Executive Director & CEO, Shakeel Kadri, delivered the keynote speech, while Bruce Vaughn, Lead Process Safety Subject Matter Expert, presented a paper on the Risk Analysis Screening Tool (RAST). Umesh Dhake, Asia Pacific & Middle East Regional Manager, presented CCPS’ work at a technical session on key updates incorporated in the 3rd edition of *CCPS Guidelines on Investigating Process Safety Incidents*. Bruce Vaughn and Umesh Dhake also provided a one-day pre-conference workshop on the RAST Tool, which was attended by 35 delegates.



CCPS INDIA REGIONAL TECHNICAL STEERING COMMITTEE MEETING

The meeting was hosted by HPCL-Mittal Energy Limited (HMEL) on February 22, 2019 in Delhi. Forty-five delegates from leading companies were in attendance, which included Reliance, DNV GL, LR, Sajjan India, Syngenta, ONGC, Essar, HPCL, and Adani Group. Various case studies and incidents were shared by attendees.



INTERNATIONAL PROCESS SAFETY CONFERENCE (INPSC) NEW DELHI, INDIA • FEBRUARY 25-26, 2019

CCPS Executive Director & CEO, Shakeel Kadri and Asia Pacific & Middle East Regional Manager, Umesh Dhake, participated in the International Process Safety Conference (INPSC) which promotes innovative technologies and winning strategies in tackling the challenges of the global process safety industry, including the sharing and learning of experiences and best practices.

The theme of INPSC 2019 was “Culture, Competency and Excellence,” which was designed to meet key strategic objectives on business critical issues while facilitating the development of more comprehensive safety systems. Also addressed was the implementation of best global practices and engaging executive leaders in catastrophic event prevention. Shakeel Kadri was featured as the keynote speaker and guest of honor. His topic was “Process Safety Leadership, Managing a Line in the Sand.” Umesh Dhake presented a RAST tool overview during a technical session.



CCPS INDIA REGIONAL TECHNICAL STEERING COMMITTEE MEETING

This meeting, one of the largest ever gatherings in the region, was hosted by Reliance Industries Ltd. in Mumbai on August 7, 2019, and was attended by more than 140 delegates from 48 companies throughout India. Eight process safety professionals from different companies shared their valuable PSM case studies and incident learnings to support the mission of encouraging a shared knowledge mindset to help create safer and more sustainable operations. The session ended with a commitment from member companies to share more incident case studies from their organizations during the next CCPS Technical Steering Committee Meeting.



5TH CCPS GLOBAL SUMMIT ON PROCESS SAFETY

The Center for Chemical Process Safety (CCPS) and The Singapore Chemical Industry Council (SCIC) jointly organized the 5th Global Summit on Process Safety in Singapore from October 22-23, 2019 and was attended by more than 320 delegates from throughout the world. Themed “CCPS Vision 20/20 – The Five Industry Tenets and Four Societal Themes,” the meeting’s aim was to transform this vision into result-oriented actions for achieving process safety excellence.



NICS-CCPS MOU SIGNING CEREMONY

The National Institute of Chemical Safety (NICS) of the Republic of Korea and the Center for Chemical Process Safety (CCPS) signed a Memorandum of Understanding (MoU) on October 23, 2019 in Singapore to strengthen the collaboration between NICS and CCPS for both parties’ institutional support of projects with mutual interest. Both CCPS and NICS will support the promotion of each other’s activities and events through their databases, websites, e-mail marketing, and other communication channels, while participating in each other’s technical committees, and the joint organization of events and courses.





CHINA

The Center for Chemical Process Safety-China Section (CCPS-CS) was founded by the Center for Chemical Process Safety of the American Institute of Chemical Engineers and the Center for Safety and Environmental & Energy Conservation Technology of the China University of Petroleum in April 2007.

Missions of CCPS-CS:

- Advancing the state of the art process safety technology and management practices in China
- Serving as a premier resource for process safety information in China
- Fostering process safety learning in undergraduate engineering education
- Promoting process safety as a key industry value

CCPS CHINA SESSION ORGANIZED BY CCPS-CS AT THE 15TH GLOBAL CONGRESS ON PROCESS SAFETY



7TH CCPS CHINA PROCESS SAFETY MEETING

Louisa Nara, Global Technical Director, CCPS and David Moore, AcuTech, were the instructors for a two-day preconference course on the “Overview of Risk Based Process Safety” from October 29-30, 2019. A total of 130 participants from the Chinese government, to industry and academia attended the course, which was supported by a translator. The course focused on Metrics, Inherently Safer Design and Human Factors.

The 7th CCPS China Conference on Process Safety, which took place from October 31 – November 1, 2019 in Suzhou, China was organized by CCPS, the China University of Petroleum, and the China Chemical Safety Association. The conference, which attracted a record 1,000 attendees from around the world, featured a presentation by the Vice Minister of Emergency Management, Sun Huashan, who spoke about China’s need to look at inherently safer design.

Throughout the two-day conference, three major themes were addressed, which included;

- Process Safety Management
- Risk Identification, Analysis and Management, and;
- Safety Management and Technology of the Fine Chemicals Industry

In addition, 15 keynote and 47 technical presentations were delivered throughout the two-day period.



5TH CCPS CHINA REGION TECHNICAL STEERING COMMITTEE MEETING

The CCPS China Regional Technical Steering Committee was formally created with signatures of support from 12 companies (TÜV Rheinland, IRC, Shanghai Secco, CNOOC, Cargill, PSRG, Tronox, Chemours, Shenyang Research Institute, Corteva, Starr Tech, and Wanhua Chemicals), as well as representatives from the CCPS China Section. Two member company presentations were given on “Audit Findings and Follow-up” and “Various Components of Asset Integrity Management.” During the meeting, Mr. Malcolm Pu of Wanhua Chemicals, was appointed as the Chair for this committee; he vowed to spread CCPS’ mission and vision throughout China. The CCPS China Regional Technical Steering Committee Members also discussed potential topics for future meetings and expressed their willingness to support CCPS activities in China.



2020 Meetings, Destinations and Global Offices

NORTH AMERICA

NEW YORK, NY

- **CCPS Advisory Board Meeting**
8:00am-5:00pm • March 11, 2020
- **CCPS Advisory Board Dinner**
6:30pm-9:00pm • March 11, 2020
- **CCPS Advisory Half Day Board Meeting**
8:00am-1:00pm • March 12, 2020

HOUSTON, TX

- **16th Global Congress on Process Safety**
March 29-April 1, 2020
- **CCPS Technical Steering Committee Networking Dinner**
April 1, 2020
- **CCPS Technical Steering Committee Meeting**
April 2, 2020
- **DIERS Spring Meeting**
April 27-29, 2020
- **Offshore Technology Conference**
May 4-7, 2020
- **TSC Planning Committee Meeting (CCPS Houston Office)**
June 9-10, 2020

CALGARY, CANADA

- **5th Annual Canadian Regional Technical Steering Committee Meeting**
Hosted by Aon Energy Risk Engineering
September 10, 2020

VIRTUAL MEETING

- **Advisory Board Virtual Meeting**
10:00am-12:00 noon EST • October 22, 2020

SUGAR LAND, TX

- **Fall Technical Steering Committee Meeting**
November 4-5, 2020

HOUSTON, TX

- **DIERS Fall Meeting**
November 9-11, 2020

EUROPE

BASEL, SWITZERLAND

- **5th Europe Regional Technical Steering Committee Meeting**
Hosted by Syngenta Global Headquarters
March 18-19, 2020

FRANKFURT, GERMANY

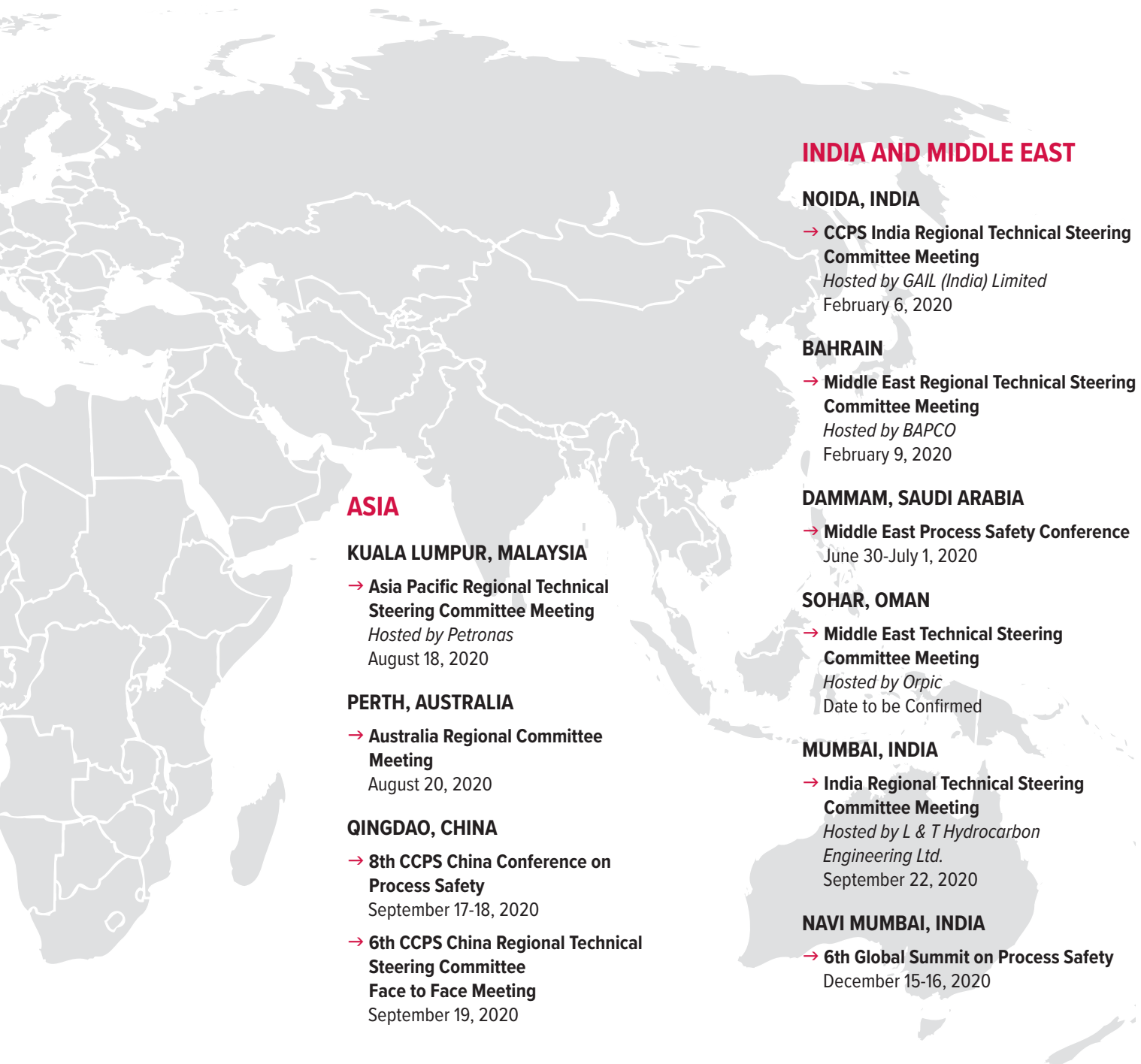
- **5th Europe Process Safety and Big Data Conference**
October 13-14, 2020

SOUTH AMERICA

- **9th Latin America Conference on Process Safety (LACPS)**
4th Quarter 2020
Location TBD

SAO PAULO, BRAZIL

- **Regional Technical Steering Committee Meeting**
Meeting date to be announced in 2020



ASIA

KUALA LUMPUR, MALAYSIA

- **Asia Pacific Regional Technical Steering Committee Meeting**
Hosted by Petronas
August 18, 2020

PERTH, AUSTRALIA

- **Australia Regional Committee Meeting**
August 20, 2020

QINGDAO, CHINA

- **8th CCPS China Conference on Process Safety**
September 17-18, 2020
- **6th CCPS China Regional Technical Steering Committee Face to Face Meeting**
September 19, 2020

INDIA AND MIDDLE EAST

NOIDA, INDIA

- **CCPS India Regional Technical Steering Committee Meeting**
Hosted by GAIL (India) Limited
February 6, 2020

BAHRAIN

- **Middle East Regional Technical Steering Committee Meeting**
Hosted by BAPCO
February 9, 2020

DAMMAM, SAUDI ARABIA

- **Middle East Process Safety Conference**
June 30-July 1, 2020

SOHAR, OMAN

- **Middle East Technical Steering Committee Meeting**
Hosted by Orpic
Date to be Confirmed

MUMBAI, INDIA

- **India Regional Technical Steering Committee Meeting**
Hosted by L & T Hydrocarbon Engineering Ltd.
September 22, 2020

NAVI MUMBAI, INDIA

- **6th Global Summit on Process Safety**
December 15-16, 2020

CCPS OFFICES

- New York, NY
- Houston, TX
- Frankfurt, Germany
- Mumbai, India
- Qingdao, China

GLOBAL TECHNICAL STEERING COMMITTEE WEB CONFERENCES

- February 19, 2020
- June 17, 2020
- September 16, 2020

All Web Conferences are from 10:00am-12:00pm EST

Look for upcoming events on our website — aiche.org/ccps

Organizational Structure

TECHNICAL STEERING COMMITTEE (TSC)

The Technical Steering Committee (TSC) is the main body of CCPS, with one representative from each CCPS member company. The key functions of the TSC are to assist the CCPS Executive Director & CEO in:

- Developing an overall multi-year program for CCPS
- Defining the priorities for project selection
- Selecting specific projects for CCPS
- Defining and reviewing the scope for these specific projects
- Suggesting membership for the Project Subcommittees
- Reviewing the status of project programs.

The CCPS Technical Steering Committee meets face to face two times a year and by web conference three times a year.

CCPS ACTIVITIES MANAGEMENT

Activities are monitored and directed by the

- Managing Board
- Advisory Board
- Project Planning & Operating Committee
- Technical Steering Committee

Additionally, members of the Technical Steering Committee and other member company representatives serve on subcommittees that oversee CCPS projects. The Managing Board has fiduciary responsibility for CCPS's operations. The Advisory Board has strategic responsibility for CCPS. Board members review CCPS's mission and strategies and recommend new initiatives. The Planning and Operations Committee is responsible for evaluating opportunities and gaps in CCPS programs relative to its strategy and generating potential initiatives to address them.

2020 CCPS MANAGING BOARD

June Wispelwey
AIChE Executive Director & CEO (Chair)

Rick Cain
AIChE Chief Financial Officer

Shakeel Kadri
CCPS Executive Director & CEO

Monty Alger
AIChE President

Deborah L. Grubbe
AIChE President-Elect

Kim Ogden
AIChE Past President

Ana Davis
AIChE Director

Pete Lodal
AIChE Director

Lorie McDowell
AIChE Director

Joseph Smith
AIChE Secretary

Rose Wesson
AIChE Treasurer

Sincere gratitude to the outgoing 2019 Managing Board members

Billy Bardin
AIChE Director

Christine Seymour
AIChE Past President

ADVISORY BOARD

Shakeel Kadri
CCPS (Chair)

Khaled Alalayani
SABIC

Bob Bahr
ExxonMobil

Garry Bryan
Bayer

Yong Sai Chung
Petronas

Al Cusson, IV
Air Liquide

Ana Davis
Syngenta Corporation

Rob DiValerio
BP

Derek A. Fairclough
BASF

Abdullah A. Ghamdi
Saudi Aramco

Dave Greganti
DOW

Cheryl Kennedy
DuPont Company

Karen Koster
Honeywell

Perry Logan
3M

Yoshizumi Masahiro
Mitsubishi Corporation

Anne O'Neal
Chevron

Cari Parker
Eastman Chemical

Keith Silverman
Ashland

Mike Snyder
DEKRA Insight

Prasad Tipnis
Reliance Industries, Ltd.

June Wispelwey
AIChE

John Wnek
Evonik Corporation

Kristine Williams
Ecolab

**Sincere gratitude to the
outgoing 2019 Advisory
Board Members**

Khaled Saleh S. Al-Kharboush
SABIC

Sulo Belawan
Petronas

Delia Contreras
Ecolab

David A. Lewis
*Occidental Chemical
Corporation*

Debra Small
Bayer

PROJECT PLANNING & OPERATING COMMITTEE

Fred Henselwood
NOVA Chemicals (Chair)

Chris Aiken
Cargill (1st Vice Chair)

Jerry Forest
Celanese Chemicals (2nd Vice Chair)

Abdul Aldeep
Siemens

Steve Arendt
ABS Consulting Group

Vivek Bichave
Reliance Industries, Ltd.

Todd Aukerman
LanXess Corporation

Gustavo Jose Correa
YPF

Eric Freiburger
Linde plc

Cheryl Grounds
Emeritus

Greg Horton
SABIC

Shakeel Kadri
CCPS

Gregg Kiihne
BASF

Pete Lodal
Emeritus

Jack McCavit
Emeritus

Louisa A. Nara
CCPS

Cathy Pincus
ExxonMobil

Karen Tancredi
Chevron Corporation

Jatin Shah
BakerRisk

Scott Wallace
Olin Corporation

John Wincek
Dekra Insight



Projects and Volunteers

PROJECT 244: PROCESS SAFETY - VISION 20/20

Anne O'Neal, Chair
Chevron Corporation

Ken Tague
CCPS Staff Consultant

Chris Aiken
Cargill

Todd Aukerman
LanXess Corporation

Jeffrey L. Fox
Emeritus

Cheryl Grounds
Emeritus

Gregg Kiihne
BASF

Peter N. Lodal
Emeritus

Jack McCavit
Emeritus

Louisa A. Nara
CCPS

Ellen Ross
Chevron Corporation

Samantha Scruggs
BP Corp

PROJECT 248: GUIDE TO MAKING ACUTE RISK DECISIONS

Fred Henselwood, Co-Chair
NOVA Chemicals

Jeffrey C. Stawicki, Co-Chair
The Lubrizol Corporation

Dave Belonger
CCPS Staff Consultant

Christopher S. Buehler
Exponent, Inc.

Sorin Dan
NOVA Chemicals

Seshu Dharmavaram
Corteva Agriscience

Elizabeth Lutostansky
Air Products & Chemicals, Inc.

Albert Ness
Emeritus

Derek Miller
Air Products & Chemicals, Inc.

Robin M Pitblado
DNV GL, Retired

Martin Timm
Linde plc

John H. Traynor
Evonik Corporation

Florine Vincik
BASF

PROJECT 255: EVERGREEN LOPA/IPL DATABASE

John F. Murphy
CCPS Staff Consultant

J. Wayne Chastain
Eastman Chemical Company

Jing Chen
CCPS

Kimberly Mullins
Occidental Chemical Corporation

PROJECT 270: PROCESS SAFETY IN UPSTREAM: OIL AND GAS

Jean Bruney, Chair
Chevron Corporation

Eric Freiburger, Co-Chair
Linde plc

Cheryl Grounds
CCPS Staff Consultant

Steve Arendt
ABS Consulting Group

Michael Broadribb
BakerRisk

Christopher S. Buehler
Exponent, Inc.

Rajender Dahiya
AIG

Anil Gokhale
CCPS

Kevin He
Shell Downstream Manufacturing

David R. Mohler
Delek

Carolina Morales
Ecopetrol

Jason W. Nicholls
XTO Energy

Tony Poulasichidis
Anadarko

Ha Chi Quan
Binh Son Refining and Petrochemicals Co., Ltd.

Kevin D. Watson
Chevron Corporation

Robert J. Weber
PSRG, Inc.

Tracy Whipple
BP Corp

PROJECT 270 MEMBERS FROM THE SPE

Charlie Williams, Co-Chair
Center for Offshore Safety

John Crump
Consultant

John Gidley
Atwood Oceanics, Retired

James F. Langer
PetroSkills

Hisham Saadawi
Ringstone Petroleum Consultants

Brad Smolen
BP Corp

Terrance Sookdeo
Baker Hughes, Inc.

PROJECT 275: PROCESS SAFETY DURING TRANSIENT OPERATIONS (START-UP/SHUT-DOWN)

Theresa Broussard, Chair
Chevron Corporation

Daniel Sliva
CCPS Staff Consultant

Katherine Anderson
Vertellus Specialties, Inc.

Susan Bayley
Linde plc

Donald Connolley
AcuTech

Eddie Dalton
BASF

Reyyan Koc Karabocek
ExxonMobil

Mikelle C. Moore
Buckman North America

Masaki Nakagawa
Mitsubishi Chemical Corporation

Pamela Nelson
Solvay USA, Inc.

Jitesh Patel
New Jersey DEP

Sara Saxena
BP Corp

Scott Schiller
BakerRisk

Mario Sumida
Braskem

Robert J. Weber
PSRG, Inc.

Elliot Wolf
The Chemours Company

PROJECT 276: GUIDELINES/ ESSENTIALS OF SAFE WORK PRACTICES

David Lewis, Chair
Occidental Chemical Corporation

Dave Belonger
CCPS Staff Consultant

Katherine M. Anderson
ioMosaic Corporation

Vivek Bichave
Reliance Industries, Ltd.

Simon Jones
Sphera

Dan Miller
Emeritus

Jitesh Patel
New Jersey DEP

PROJECT 277: GUIDELINES FOR INHERENTLY SAFER CHEMICAL PROCESSES: A LIFE CYCLE APPROACH, 3RD ED.

John Wincek, Chair
Dekra Insight

Daniel Sliva
CCPS Staff Consultant

Steve Arendt
ABS Consulting Group

Susan Bayley
Linde plc

Prashanti Bhupathi
Reliance Industries, Ltd.

Wayne Chastain
Eastman Chemical Company

Oliva Cheng
Chevron Corporation

Robert Coover
Linde plc

Carolina Del Din
PSRG, Inc.

Jonas Duarte
LanXess Corporation

Emmanuelle Hagey
NOVA Chemicals

Scott Haney
Marathon Petroleum Company

Dennis Hendershot
AIChE Fellow

Nicole Loontjens
Americas Styrenics

Dan Miller
Emeritus

Dave Moore
AcuTech

Jitesh Patel
New Jersey DEP

Katherine Prem
Arkema, Inc.

Sabrina Putruele
Pluspetrol

Morgan Reed
Exponent, Inc.

Sonny Sachdeva
PSRG, Inc.

Randy Sawyer
Contra Costa Health Services

Scott Wallace
Olin Corporation

PROJECT 279: MORE INCIDENTS THAT DEFINE PROCESS SAFETY

Cheryl Grounds
CCPS Staff Consultant

Albert Ness
CCPS Staff Consultant

Rajender Dahiya
AIG

Sean Dee
Exponent, Inc.

Tony Downes
Honeywell

Jerry Forest
Celanese Chemicals

Melissa Holliday
The Dow Chemical Company

Derek Miller
Air Products & Chemicals, Inc.

Rhian Drath Morgan
BP Corp

David Prior
Honeywell

Bhaves P. Shukla
Michelman, Inc.

Karen Tancredi
Chevron Corporation

Tracy Whipple
BP Corp

PROJECT 281: HUMAN PERFORMANCE FOR PROCESS SAFETY PROFESSIONALS

Chris Aiken, Chair
Cargill

Eric Freiburger, Vice Chair
Linde plc

Sandra Adkins
BP Corp

Charles Cowley
CCPS Staff Consultant

Mayara Carbono
Ecolab

Carlos Carvalho
Petrobras

Erin Collins
Jensen Hughes

Ruskin Damani
Reliance Industries, Ltd.

Gretel D'Amico
Pluspetrol

Joseph Deeb
ExxonMobil

Tony Downes
Honeywell

Monica Lavoyer Escudeiro
ANAC (Brazil Aviation Regulator)

SP Garg
GAIL

Alexandre Glitz
Emeritus

Cheryl Grounds
Emeritus

Anil Gokhale
CCPS

Jeff Hazle
Marathon Petroleum Company

Gregg Kiihne
BASF

Sahika Kormaz
Chevron Corporation

Caroline Morais
ANP (Brazil Petroleum Regulator)

Andrew Moulder
Inter Pipeline

Louisa A. Nara
CCPS

Christa Pennino
CCPS

Meg Reese
Occidental Chemical Corporation

Scott Wallace
Olin Corporation

PROJECT 281 MEMBERS FROM THE ENERGY INSTITUTE

Stuart King, Co-Chair
Energy Institute

Lee Allford
Energy Institute

Rob Saunders
Shell

PROJECT 282: GUIDELINES FOR INVESTIGATING CHEMICAL PROCESS INCIDENTS, 3RD ED.

Jerry Forest, Chair
Celanese Chemicals

Daniel Sliva
CCPS Staff Consultant

Michael Broadribb
BakerRisk

Laurie Brown
Eastman Chemical Company

Chonai Cheung
Contra Costa Health Services

Eddie Dalton
BASF

Carolina Del Din
PSRG, Inc.

Scott Guinn
Chevron Corporation

Christopher Headen
Cargill

Lee Vanden Heuvel
ABS Consulting Group

Kathleen Kas
The Dow Chemical Company

Mark Paradies
System Improvements, Inc.

Nestor Paralicci
Marathon Petroleum Company

Muddassir Penkar
Evonik Corporation

Morgan Reed
Exponent, Inc.

Meg Reese
Occidental Chemical Corporation

Marc Rothschild
DuPont

Joy Shah
Reliance Industries, Ltd.

Robert Stankovich
Eli Lilly & Company

Rohan Vardekar
Reliance Industries, Ltd.

Terry Waldrop
AIG

Scott Wallace
Olin Corporation

Della Wong
Canadian Natural Resources Ltd.

PROJECT 283: GUIDELINES FOR THE REVALIDATION OF PHAS, 2ND ED

Laura Turci, Chair
Ashland

Warren Greenfield
CCPS Staff Consultant

Mohammed Baig
Bayer Corporation

Cecil Clements
The Chemours Company

Michael Hazzan
AcuTech

Manuel Herce
DuPont

Alok Khandelwal
Shell

Wajih Naeem
Husky Energy

Lisa Parker
Braskem

Jordi Costa Sala
Celanese Chemicals

Martin Timm
Linde plc

PROJECT 285: PROCESS SAFETY: LEADERSHIP FROM THE BOARDROOM TO THE FRONTLINES

John Wincek, Chair
Dekra Insight

Bernard Groce, Co-Chair
Calumet Specialty Products Partners L.P.

Daniel Sliva
CCPS Staff Consultant

Don Abrahamson
Emeritus

Steve Arendt
ABS Consulting Group

Theresa Broussard
Chevron Corporation

David Cummings
DuPont

Edward Dyke
Merck & Co., Inc.

Marc Guindon
Suncor Energy

Kevin He
Shell Downstream Manufacturing

Fred Henselwood
NOVA Chemicals

Dave Hurban
American Electric Power

Reyyan Koc Karabocek
ExxonMobil

Hope Luebeck
The Chemours Company

Georges Melham
ioMosaic Corporation

Dan Miller
Emeritus

Louisa A. Nara
CCPS

Mike Neill
Petrotechnics

Annie Nguyen
PSRG, Inc.

Matt Pfeifer
Ashland

Katherine Prem
Arkema, Inc.

David Prior
Honeywell

Adrian Sepeda
Emeritus

Jatin Shah
BakerRisk

Karen Tancredi
Chevron Corporation

Tran Nguyen Hoai Thu
Binh Son Refining & Petrochemical Co., Ltd.

Michael Toraason
BakerRisk

Herve Vaudrey
DEKRA Insight

Erik Vettergren
Agrium

Dan Willcznski
Marathon Petroleum Company

PROJECT 289: GOLDEN RULES OF PROCESS SAFETY FOR SPECIFIC TECHNOLOGIES

Chris Devlin, Chair
Celanese Chemicals

Warren Greenfield
CCPS Staff Consultant

Denise Albrecht
3M

Eric Atkins
Olin Corporation

Walt Frank
Emeritus

Paul Gathright
Ascend Performance Materials

Amy Gay
Occidental Chemical Corporation

Leonard Gomes
Cheniere Energy, Inc.

David Greganti
The Dow Chemical Company

Mark Hazzan
AcuTech

Ng Ern Huay
Petronas

Gregg Kiihne
BASF

Louisa A. Nara
CCPS

Cathy Pincus
ExxonMobil

Jatin Shah
BakerRisk

Scott Wallace
Olin Corporation

PROJECT 291: GUIDELINES FOR ABNORMAL SITUATION MANAGEMENT

Tony Downes, Chair
Honeywell

Brian Farrell
CCPS Staff Consultant

Todd Aukerman
LanXess Corporation

Susan Behr
Braskem

Michelle Brown
FMC

Seshu Dharmavaram
Corteva Agriscience

Amy Gay
Occidental Chemical Corporation

Felix Azenwi Fru
National Grid

SP Garg
GAIL

Paul Gathright
Ascend Performance Materials

Stephen Greco
Kuraray

Anil Gokhale
CCPS

Nirupama Gopalaswami
Honeywell

Alan Kobar
The Dow Chemical Company

Marcus Miller
TapRoot

Louisa A. Nara
CCPS

Assem Saleh
Petro Rabigh

Matt Walters
Exponent, Inc.

Stephanie Wardle
Husky Energy

PROJECT 292: LESSONS LEARNED YEARS LATER

Daniel Sliva
CCPS Staff Consultant

Steve Arendt
ABS Consulting Group

Pedro Bonilla
Buckman North America

Christopher Bowtell
Cheniere Energy, Inc.

San Burnett
BHP Billiton

Donald Conolley
AcuTech

Elena Donya
Repsol

Robert Fisher
Starr Technical Risks Agency, Inc.

Larry Floyd
BASF Corporation

Fred Henselwood
NOVA Chemicals

Matt Korfist
Chevron Corporation

Allison Knight
3M

Denise Chastain-Knight
Exida

Jeffrey Lu
Wanhua Chemical Group

Reid McPhail
CNRL

Gene Meyer
Kraton Corporation

Dan Miller
Emeritus

Pamela Nelson
Solvay USA, Inc.

Annie Nguyen
PSRG, Inc.

Sufan Nor
Petronas

Richard Pawulski
Air Liquide

Janet Persechino
EPM Inc.

Katherine Prem
Covestro LLC

Gill Sigmon
AdvanSix

Ken Tague
Emeritus

Elliot Wolf
The Chemours Company

**PROJECT 293:
GUIDELINES FOR
PROCESS KNOWLEDGE
MANAGEMENT**

Daniel Sliva
CCPS Staff Consultant

Hafiz Zeeshan Ahmad
Tronox

Denise Albrecht
3M

Abdul Aldeeb
Siemens Energy, Inc.

Mohammed Baig
Bayer Corporation

Jennifer Brittain
AdvanSix

Michelle Brown
FMC Corporation

Cho Nai Cheung
Contra Costa Health Services

Russ Davis
Mistras Group, Inc.

Carolina Del Din
PSRG, Inc.

SP Garg
GAIL

Wayne Garland
Eastman Chemical Company

Amy Gay
Occidental Chemical Corporation

Andrew Goddard
Arkema, Inc.

Stephen Greco
Kuraray

Mark R. Hall
Mallinckrodt Pharmaceuticals

Dan Hannewald
BASF

Rainer Hoff
Gateway Consulting Group, Inc.

Abhinav Jain
Bayer Corporation

Allison Knight
3M

Tekin Kunt
PSRG, Inc.

Benjamin K. Lee
DuPont

Rebecca Lipp
Marathon Petroleum Company

Steve Murphy
Syngenta

Annie Nguyen
PSRG, Inc.

Ravi Ramasamy
Nghi Son Refinery & Petrochemical LLC

Miguel E. Rizo
Contra Costa Health Services

Denver Roopchand
Cheniere Energy, Inc.

Jatin Shah
BakerRisk

Jeffery E. Todd
Marathon Petroleum Company

Van Lommen Yvan
3M



Programs and Volunteers

The following programs are ongoing. Instead of a predetermined end target, they are set up to produce valuable Process Safety tools, guidelines etc., on a periodic basis.

PROJECT 152: PROCESS SAFETY BEACON

Georges Melhem - Sponsor
ioMosaic Corporation

Mike Snyder - Sponsor
DEKRA Insight

John Herber, Co-Chair
Emeritus

Rüdiger Lenz, Co-Chair
Celanese Corporation

Dennis Hendershot
CCPS Staff Consultant

Albert Ness
CCPS Staff Consultant

Jing Chen
CCPS Project Manager

Don Abrahamson
Emeritus

Katherine M. Anderson
ioMosaic Corporation

Christopher Devlin
Celanese Corporation

Seshu Dharmavaram
DuPont

Tony Downes
Honeywell

Jeffrey L. Fox
Emeritus

Thomas Guest
Nexen, Inc.

Kathleen Kas
The Dow Chemical Company

Dave Krabacher
BASF, Retired

Antonio Lauzana
Petrobras, Retired

Larry LeMesurier
Syn crude Canada

Marc Levin
Washington State University

Jack McCavit
Emeritus

Louisa A. Nara
CCPS

William M. Olsen
Merck & Company, Inc.

Yasser A. Rahim
Gulf Petrochemicals Industries Company

Roy Sanders
PPG, Retired

Nicholas P. Sands
DuPont

Jatin Shah
BakerRisk

Tom Spicer
University of Arkansas

John C. Stoney
BP

Anthony A. Thomson
Bayer Corporation, Retired

John C. Wincek
DEKRA Insight

Jan Windhorst
Emeritus

PROJECT 251: PROCESS SAFETY IN PILOT PLANTS AND LABORATORIES

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*ioMosaic Corporation,
Co-Chair*

Jerry Jones
CCPS Staff Consultant

Bruce Bullough
Pfizer Inc.

Jeffrey Foisel
Dow Corning

Jeff Grant
Abemarle Corporation

Randy Keller
The Dow Chemical Company

Andrew Minister
*DOE - Pacific Northwest
National Laboratory, Retired*

Richard Palluzi
ExxonMobil, Retired

PROJECT 257: TRANSLATION OF CCPS BOOKS/TOOLS INTO CHINESE

Byron Sun
CCPS Staff Consultant

Jing Chen
CCPS

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*Shanghai Johnson & Johnson
Pharmaceutical Co., Ltd*

Su Hu
*Sinopec Yangzi Petrochemical
Company Ltd*

Yifei Meng
*China University of Petroleum
(East China)*

Jing Li
*Arlanxeo High Performance
Elastomers (Changzhou Co.,
Ltd)*

Ning Li
*China National Chemical
Corporation Zhenghe Group
Co., Ltd*

Ning Liu
*Shanghai Aviation Industrial
(Group) Co., Ltd*

Yi Liu
*China University of Petroleum
(East China)*

Penghui Lu
The Dow Chemical Company

Souwei Wang
*Shandong Huatai Interox
Chemical Co., Ltd*

Yangli Zhang
*Fujian Fuhaichuang
Petrochemical Co., Ltd*

Yichen Zhang
*Fuyuan Industrial &
Commerical Development Co.,
Ltd (Gulei Branch)*

Xiaoming Zeng
DEKRA Insight (Shanghai)

PROJECT 260: TRANSLATION OF CCPS BOOKS INTO SPANISH

Laura Turci, Co-Chair
Ashland

**Gustavo Jose Correa,
Co-Chair**
YPF

Nestor Spósito
CCPS Staff Consultant

Nehuen Sebastian Angileri
YPF

Christian Prieto Barragan
Pluspetrol

**Juan Manuel Fernandez
Becerra**
YPF

Trina Carrillo
Técnicas Reunidas

Ricardo Ceskiavikus
YPF

Gretel D'Amico
Pluspetrol

Ronald Ivan Tello David
Pluspetrol

Federico Hosenen
Cargill

Rodolfo Edgardo Kramer
YPF

Luis Andres Landa
YPF

Andrés Leguizamon
Pluspetrol

Juan Manuel Martinez
YPF

Matias Massello
*Process Improvement Institute,
Inc.*

Paul Enzon Rodriguez Paucar
Pluspetrol

Martín Jose Rebollo
YPF

Carlos Facundo Rodriguez
Pluspetrol

Federico Rybner
Pluspetrol

Jordi Costa Sala
Celanese Chemicals

Heber Varela
Pluspetrol

Sergio Leandro Vilches
Pluspetrol

Josefina Yañez
Técnicas Reunidas

PROJECT 261: TRANSLATION OF CCPS BOOKS INTO PORTUGUESE

**Americo Diniz Carvalho Neto,
Chair**
Emeritus

Nestor Spósito
CCPS Staff Consultant

Mayara Carbono
Ecolab

Deyse Cassais
RSE

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Braskem

Paula Onishi
BASF

Gustavo Peron
Cargill

Sergio Silva
Petrobras

Mario Enji Yamaguchi Sumida
BASF

PROJECT 280: DOW RISK ANALYSIS SCREENING TOOL (RAST)

Albert Ness
CCPS Staff Consultant

Ken First
CCPS Staff Consultant

Umesh Dhake
CCPS

Jesse Diaz
Arkema, Inc.

Dave Hazan
DuPont

Pier-Jan Hettema
DSM/EPSC

Michell LaFond
The Dow Chemical Company

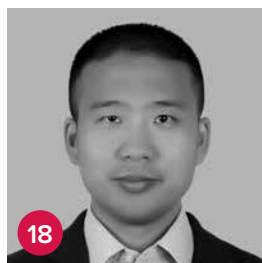
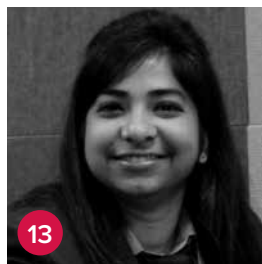
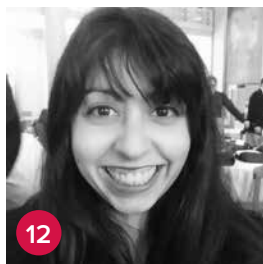
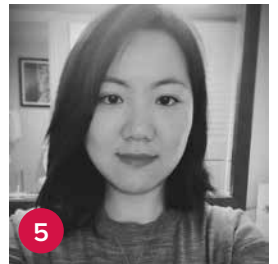
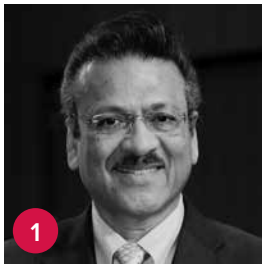
Duncan Rose
The Dow Chemical Company

Kenan Stevick
Emeritus

Bruce Vaughn
CCPS

Scott Wallace
Olin Corporation

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Executive Director & CEO
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Lead Process Safety Engineer
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Asia Pacific Project Manager
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14. **Marvin Szoychen**
Latin America Regional Manager
15. **Bruce Vaughen**
Lead Process Safety Subject Matter Expert
16. **Professor DongFeng Zhao**
Director, CCPS China Section
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Assistant Director, CCPS China Section
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Assistant Director, CCPS China Section

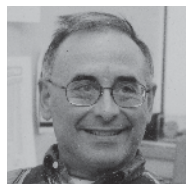
CCPS Consultants and Instructors



Don Abrahamson



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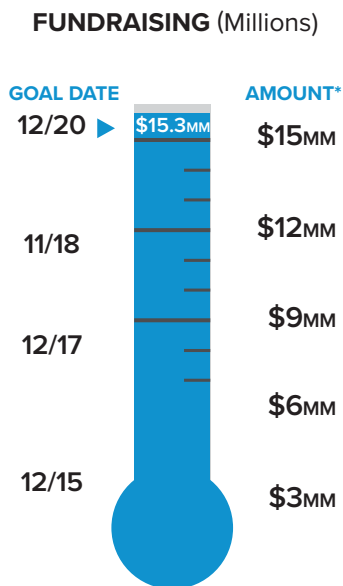
Ken Tague



Jenny Wang

Updates and Impact

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*As of December 2019

429

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Center for Chemical Process Safety – An AIChE Technology Alliance
 New York (home office), Frankfurt, Houston, Mumbai, and Qingdao
Tel: (+1) 646.495.1371 • aiche.org/ccps • **Email:** ccps@aiche.org