

Safety & Health News

AIChE

AMERICAN INSTITUTE OF
CHEMICAL ENGINEERS

SAFETY AND HEALTH
DIVISION
www.shdiv.aiche.org



A Supplement to *Process Safety Progress*

Summer 2004

FINAL PRINT EDITION

On April 27, at the AIChE Spring Meeting in New Orleans, the Safety and Health Division Executive Committee had a lengthy discussion about the future of the Newsletter and about Division finances. Currently, *Safety & Health News* is printed in hard copy quarterly and is mailed to all members of the Division as an insert with *Process Safety Progress*. Because of the financial situation at AIChE, a number of significant changes have taken place for 2004. Wiley InterScience now publishes and distributes *Process Safety Progress* (and also *Environmental Progress* and *AIChE Journal*). Wiley InterScience did agree to continue inserting the Newsletter with *PSP* and distribute it at no cost which must be considered as a significant contribution on the part of that organization. However, Wiley InterScience is increasing the press runs for promotional and other purposes and therefore requires more copies of the Newsletter than just needed for the Division membership. In a sense, this could be considered as a promotional effort for the Division as well. But the Division must now absorb the full costs of printing the Newsletter and distributing it in bulk to Wiley InterScience. Previously, some of the printing cost overhead was absorbed in the publication of *PSP*.

Following a thorough discussion of the issues, it was agreed that one more print copy of *Safety & Health News* will be distributed to the Division members with an explanation of the future publication actions. A quarterly publication schedule will be continued. The Newsletter will continue to have the same general format and content. Beginning in the third quarter of 2004, all future issues of *Safety & Health News* will be posted on the Division web site only and thus will be available electronically. Print copies will no longer be distributed. (Copies have been posted on the web site following hard copy distribution for the past several years.) A reminder of the availability of the Newsletter and the web address will be included in each *PSP*. This will follow, in general, the procedure of most of the Divisions that now issue only an electronic version of their Newsletters, although usually only two or three times each year, not quarterly.

The good news is there will be no Division dues increase for 2005!

Pertinent Time Line

1979	Safety and Health Division chartered by AIChE Council.
1982	Publication of <i>Plant/Operations Progress</i> initiated by AIChE.
approx. 1987	Safety and Health Division agreed to include <i>Plant/Operations Progress</i> subscriptions in an increased dues structure, thus making all individual AIChE member subscribers members of the Division.
1993	<i>Plant/Operations Progress</i> renamed <i>Process Safety Progress</i> .
1993	8-page Division Newsletter, named <i>Safety & Health News</i> , initiated with Russ Hill appointed as editor; CCPS provided some initial support such that the CCPS logo appeared with the Division logo on the first page; Newsletter was distributed to Division members with <i>PSP</i> .
late 1995	Russ Hill retired as editor of the Newsletter.
early 1996	Sam West appointed as editor of the Newsletter.
1998	Newsletter increased from 8 to 12 pages via approval of the Division Executive Committee.
Summer 1999	Initiated posting the Newsletter on the Division web site following distribution of the print copies.
2004	Printing and distribution of <i>PSP</i> transferred to Wiley InterScience.
Summer 2004	Last print version of Newsletter distributed to Division members. Future Newsletters will be available on the Division web site only. ■

Safety & Health News is published quarterly by the Safety and Health Division of the American Institute of Chemical Engineers (AIChE). Publication is funded by the Safety and Health Division and by the Center for Chemical Process Safety (CCPS) of AIChE. It is distributed by Wiley InterScience to members of the Division as a supplement to *Process Safety Progress*.

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SAFETY AND HEALTH DIVISION UPDATE SCOTT OSTROWSKI, CHAIR

For those of you who could not attend the 38th Annual Loss Prevention Symposium held April 25-29 in New Orleans, you missed a truly rewarding experience. All sessions were well attended by a broad spectrum of industry and academic representatives. There was a wide range of interesting, relevant, and thought-provoking papers presented. I want to take this opportunity to thank Bob Johnson, this year's Symposium Chair, and his entire committee for a job well done.

For those of you who missed the opportunity to attend this year, I strongly urge you to attend the 2005 AIChE Spring Meeting in Atlanta in April. For the first time, there will be three major symposiums on process safety, loss prevention, and related topics at one meeting. You will note in this Newsletter a Call-for-Papers for each of the symposiums - the 39th Annual Loss Prevention Symposium, the 7th Biennial Process Plant Safety Symposium, and the 20th Annual CCPS International Conference. This will be an historic occasion, bringing together a large number of recognized experts from around the world. It will be a meeting you cannot afford to miss!

Here is a reminder that the 49th Annual Safety in Ammonia Plants and Related Facilities, organized by Program Area 11c, is scheduled for **September 20-23, 2004**, at the Hyatt Regency Denver Hotel, Denver, CO. These annual well-attended symposiums are dedicated to safety in plants that manufacture ammonia and related chemicals such as urea, nitric acid, ammonium nitrate, and methanol. Subjects include hazardous incidents, safety developments, design issues, technological advancements, and maintenance improvements.

The Safety and Health Division Executive Committee met in New Orleans on April 27. Not unlike the cost cutting challenges we are facing in our professional lives, the Division is facing some tough economic decisions. As you know, the AIChE has been going through some difficult times. The organization has carefully scrutinized expenses and has transferred some costs where appropriate to the Division. *Process Safety Progress* is now published and distributed by Wiley InterScience. This organization has agreed to distribute the Newsletter with *PSP* at no charge, but additional copies are required to meet their distribution procedures. As a result of these actions coupled with increases in printing costs, the expenses of the Safety and Health Division

have risen in 2004. Unfortunately, we have some difficult choices to make. We can choose to cut expenses, we can increase revenues (typically this means a dues increase and potentially a loss in membership), or we can do some combination of the two. .

Each member of the Division in North America pays \$39 annually (members outside North America pay higher fees because of mailing costs). Of this \$39, approximately \$36 goes to the publication of *Process Safety Progress* leaving just \$3 for Division expenses. *PSP* is an excellent resource for our profession, and changes are planned which will increase its value to the chemical engineering community.

The cost of printing and distributing the quarterly Newsletter is now reaching the equivalent of approximately \$1 per member per issue. To help minimize costs while maintaining service, your Safety and Health Division Executive Committee has endorsed a decision to move to electronic delivery of the quarterly Newsletter, and to discontinue mailing print copies directly to the members. After the release of this Summer 2004 issue, all future editions of *Safety & Health News* will be posted on the Division web site and will be available for reading or printing out at that site. A notice about the availability of each Newsletter will be included in future issues of *PSP*.

Currently the Division has sufficient reserves to offset any short-term potential deficits, and there are no plans to increase the Division dues above the current level. The most desirable way to increase both our revenue and our value is to increase our membership. I encourage each and every one of you to solicit colleagues who are not members of the Division and encourage them to join.

Finally, I would like to thank each of you for your patience, continued support, and participation in the Safety and Health Division. I encourage each one of you to visit the Division web site at www.shdiv.aiche.org to determine how you can increase your involvement in Division sponsored activities. Working together we can help to optimize the benefits of Division membership. If any of you have any suggestions or ideas on how the Division can become more cost effective or any thoughts on improvements in the Division activities, please feel free to contact me at: scott.w.ostrowski@exxonmobil.com.

Scott Ostrowski



FEBO WINS AWARD

The Norton H. Walton/Russell L. Miller Award, sponsored by the Safety and Health Division, recognizes an individual's outstanding chemical engineering contributions and achievements in the lost prevention, safety, and health fields.

Henry L. Febo, Jr. of FM Global is the 2004 recipient of this prestigious Award as announced at the Spring AIChE Meeting in New Orleans. His career includes four years with Exxon Research and Engineering as a process design engineer, and 32 years with FM Global as a loss prevention engineer.

He is recognized as a specialist in the areas of venting of reactive and non-reactive systems; LNG and LPG storage systems; storage and handling of organic peroxides and oxidizers; and vapor cloud explosion damage estimation and mitigation. He has written a number of technical papers and was a contributing author of the AIChE/CCPS book *Deflagration and Detonation Flame Arresters* and the NFPA *Fire Protection Handbook*.

Henry has improved the safety standards of chemical plants by means of his contributions on the NFPA Technical Committee on Hazardous Chemicals; the NFPA Technical Committee on Handling and Conveying of Dusts, Vapors, and Gases; the NFPA Technical Committee on Explosion Protection Systems; and the AIChE Design Institute for Emergency Relief Systems.

Activities in the Safety and Health Division include the Program Area 11a Loss Prevention Symposium Committee where he has just completed a term as Chair, and as a Director on the Executive Committee (2000-2002).

He holds a BS degree in Chemical Engineering from Drexel University and an ME degree, also in Chemical Engineering, from New York University. He is a licensed Professional Engineer.

Henry Febo joins a list of distinguished Walton/Miller Award winners:

- | | |
|------|---------------------|
| 1987 | Walter B. Howard |
| 1988 | Eugene S. DeHaven |
| 1990 | Stanley S. Grossel |
| 1991 | William J. Bradford |
| 1993 | Ted A. Ventrone |
| 1994 | Gui LeGendre |
| 1998 | Robert W. Ormsby |
| 1999 | Richard F. Schwab |
| 2000 | John A. Davenport |
| 2001 | Joseph F. Louvar |
| 2002 | Daniel A. Crowl |
| 2003 | Laurence G. Britton |
| 2004 | Henry L. Febo, Jr. |

■

PAPER AWARD TO ERDEM URAL

The William H. Doyle Award is presented by the Loss Prevention Committee to the author of the best paper given, considering both technical content and presentation effectiveness, at each Loss Prevention Symposium. At the 2004 New Orleans Meeting, the Award for the best paper at the 2003 Symposium was announced.

Dr. Erdem A. Ural of Loss Prevention Sciences & Technologies, Inc., was selected for the presentation entitled "Airplane Fuel Tank Explosions." The paper reviewed the saga of the aviation industry in the context of the explosion hazard, protection options, accident history, and the legal and regulatory environments. The lessons learned by the aviation industry and by the chemical industry were discussed.

Erdem has long been active in affairs of the Safety and Health Division, and is currently in his second year as a Director. ■

LOSS PREVENTION ON CD-ROM II

The Second Edition of the Loss Prevention Symposium CD-ROM is now available. This set of 2 CD-ROMs includes all of the papers presented at the Loss Prevention Symposiums from 1967 through 2003, and the CCPS Annual Conferences and Workshops from 1987 through 2003. The discs contain well over 1,000 papers and 20,000 pages of process safety information, including papers that were presented but not published at the time. It includes, of course, all of the papers that were in the First Edition. The CD-ROMs are fully indexed for ease in searching the literature.

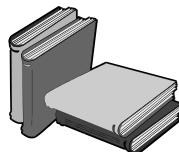
This is a joint project of CCPS and the Safety and Health Division so that sales benefit both organizations. The list price is \$199.00. Division members who own the First Edition (Publication G-49) should clip the \$20 coupon from inside of the CD case cover and use it for a discount on the Second Edition, which is Publication G-77 (ISBN 08169-0871-0).

DIVISION DUES FOR 2005

There will be no change in the Safety and Health Division annual dues for 2005, including subscription to *Process Safety Progress*. The print version of PSP is \$39.00*, the on-line version is \$39.00, both versions are \$69.00*. (*If outside North America, add \$50.00.)

THE CCPS PAGE

CENTER FOR CHEMICAL PROCESS SAFETY



THREE NEW CCPS BOOKS

***Guidelines for Safe Handling of Powders and Bulk Solids*, ISBN 0-8169-0951-2, 480 pp, Publ. G-**

95, AIChE/CCPS, New York (2004), \$119.00 (20% discount for members).

Powders and bulk solids, handled widely in the chemical, pharmaceutical, agriculture, smelting, and other industries, present unique fire, explosion, and toxicity hazards. Indeed, substances that are practically inert in consolidated form may become quite hazardous when converted to powders or granules. The U. S. Chemical Safety Board is currently investigating dust explosions that have occurred recently in three separate locations. From these investigations, recommendations are likely for companies that handle powders or whose operations produce dust to pay considerably more attention to understanding the hazards that may exist at their facilities. This new CCPS Guidelines book discusses the hazards that can occur in a wide range of process equipment and with a wide range of substances, and presents measures to address these hazards.

***Guidelines for Maintenance and Mechanical Integrity*, ISBN 0-8169-0952-0, 320 pp, Publ. G-96, AIChE/CCPS, New York (2004), \$119.00 (20% discount for members).**

Process safety provides many benefits, not the least of which is avoiding accidents. A strong maintenance and mechanical integrity program is how process safety drives benefits to the top line - sales. Proper maintenance and mechanical integrity programs are also necessary to meet regulatory requirements. By stopping equipment failure as a cause of accidents, plants can also increase their on-stream efficiency, enabling increased production. This book helps companies develop comprehensive mechanical integrity programs and thus realize the sweetest benefit of process safety.

***Safe Use of Glassed Equipment*, ISBN 0-8169-0953-0, 80 pp, Publ. G-97, AIChE/CCPS, New York (2004), \$69.00 (20% discount for members).**

Glass-lined reactors, piping, heat exchangers, and other equipment, long the work horse of pharmaceuticals, fine chemicals, and agricultural

chemicals manufacture, are becoming increasingly common as these industries expand and as the biotechnology industry grows. While less likely to fail by corrosion or to contaminate critical products, the failure of glassed equipment can be quite serious due to the nature of the materials handled. There are several specific safety issues. This new concept book describes selection and appropriate care of glassed equipment to help maximize the usefulness and safety of this important family of process equipment. ■

CCPS NOTES

- Three new "Area of Interest" Committees (AICs) have been initiated. These AICs will enable CCPS to begin exploring potential paths forward in three important areas, specifically: (1) modeling the behavior of large scale LNG releases; (2) maintaining and enhancing process safety culture; and (3) updating guidance on inherently safer technologies.
- AIChE/CCPS has signed on to an Alliance with OSHA, EPA, and several other groups to help raise awareness of chemical reactivity hazards across industry. To support the participation of CCPS in the Alliance, the unaffiliated group Reactivity Management Roundtable has been authorized by the CCPS Managing Board to come under CCPS with the tentative name Reactivity Management Center.

19TH ANNUAL CCPS INTERNATIONAL CONFERENCE

The 2004 CCPS International Conference will bring together a who's who in emergency planning for the upcoming conference, "Emergency Planning: Preparedness, Prevention, and Response," scheduled for **June 29-July 1, 2004**, at the Caribe Royal Hotel, Orlando, FL.

Representatives from the Department of Homeland Security, US Coast Guard, US Chemical Safety Board, US EPA, and process industries, among others, will discuss new governmental plans and regulations, case histories, and lessons learned from the best-prepared companies.

For a complete agenda and registration information, see www.aiche.org/ccps/icw. ■



CALL-FOR-PAPERS
20TH ANNUAL CCPS INTERNATIONAL CONFERENCE
AND WORKSHOP
APRIL 12-14, 2005
HYATT REGENCY HOTEL, ATLANTA, GA
THEME - RISK MANAGEMENT: THE PATH FORWARD

Looking backward over the past three decades, much has transpired. Mergers, acquisitions, and globalization have transformed the industry. Security has become a watchword and a major government agency has been created to address the issues. Regulatory oversight has increased significantly. Process monitoring capability (i.e., data acquisition and storage) has increased exponentially. CCPS has become a vibrant organization with broad industry and government support.

From the perspective of April 2005, what has been accomplished? Have process safety incidents been reduced? Do regulations address the right issues and are they cost effective? Is security sufficient to prevent successful terrorist acts, and have the right scenarios been addressed? Has enhanced process monitoring led to superior process control? Are we better now, and can we prove it?

The Conference Theme involves looking forward and recognizing that resources, both financial and human, are limited. Therefore, there should be a specific focus for both government and industry.

Call-for-Papers

With this background, papers are solicited for the following proposed session titles and topics:

- Practical measurement of performance - what is the slope?
- Managing for better results with 21st Century tools and resources;
- Case histories and lessons learned (joint with the Loss Prevention Symposium and the Process Plant Safety Symposium);
- Issues on LNG transportation and modeling;
- Risk analysis - how risk is quantified considering estimates of consequences and frequencies;
- Risk assessment - the process by which the results of risk analysis are used to make decisions;
- Risk management - the systematic application of management practices to the task of controlling risk to protect employees, the public, the environment, and the company assets;
- Building process safety culture;
- Human factors;

- Inherently safer technology;
 - Process/equipment integrity; and
 - Enhanced process measurement and control.
- Note that for the first time, the Annual CCPS Conference is being held in conjunction with the AIChE Spring Meeting. Two other key process safety symposiums are also scheduled - the 39th Annual Loss Prevention Symposium, and the 7th Biennial Process Plant Safety Symposium (see pages 8 and 9 for the Calls-for-Papers). This should result in an historic gathering of process safety experts from around the world.

For more information about the CCPS Conference, call Karen Person at **212-591-7319** or e-mail karep@aiche.org.

Abstracts for the CCPS Conference must be received no later than **October 1, 2004**. To submit your abstract, e-mail ccpsicw@aiche.org. ■

**MACH II SOFTWARE
FOR DIERS**

Mach II CDC Software, new from Digital Solutions in 2004, is a web-based tool that facilitates documentation of relief valve design and enables quick execution of design calculations - up to 24 scenarios for the same relief valve simultaneously. Get all of the technical benefits of the AIChE Design Institute for Emergency Relief Systems (DIERS) two-phase relief valve sizing methodology in a convenient "pay-as-you-go" format. The free Mach II CDC reader allows you to view existing cases, and review the results from DIERS benchmarks.

The cost is \$500 per relief valve design. Unlimited use licenses are also available.

To order the Mach II CDC Reader, to register to use the Mach II CDC Design Engine, or for more information, call Karen Person at **212-591-7319** (AIChE/CCPS).

SAFETY NOTES

- OSHA signed a joint agreement with the American Petroleum Institute (API) and the National Fire Protection Association (NFPA) to promote safe and healthful working conditions for workers in the petroleum and petrochemical industries. Key elements of the Alliance are built around safe tank entry, cleaning, maintenance, and rescue operations and work within and around petroleum and petrochemical liquid storage tanks. OSHA, API, and NFPA will share information on lessons learned and mutually agreed upon best practices with others in the industry, and then publicize those results through individual training programs and materials. Additionally, the organizations will develop and disseminate information through print and electronic media, including electronic assistance tools.
- The American College of Occupational and Environmental Medicine (ACOEM) has issued a new guideline on "The Use of Contact Lenses in an Industrial Environment." The Guideline supports the position of OSHA that the use of contact lenses does not pose additional hazards to workers, and reiterates the OSHA regulations that require individuals that wear contact lenses in the workplace to combine them with appropriate industrial eye protection. The Guideline recommends that workers handling most hazardous chemicals be permitted to wear contact lenses provided safety guidelines are followed and the use of contact lenses is not banned by regulation or contraindicated by medical or industrial hygiene recommendations.
- NIOSH has launched eNews designed to be a direct communications link to the safety and health community. Subscribers will get a monthly update on "What's New" at NIOSH such as featured articles, just-released publications, current and upcoming projects, and future conferences. It will allow NIOSH to receive input on its performance including occupational injury and illness surveillance, research, intervention, and education. Subscribe at:
www.cdc.gov/niosh/enews/default.html.
- Occupational health and safety concerns are increasingly complex. In light of the continuing challenges facing employers, workers, and safety and health professionals, the OSHA web page "General Safety and Health References" has been expanded. It provides a quick path to a variety of resources for obtaining more information related to workplace safety and health. Available are links to other safety and health internet sites. The page has information on authoritative reference texts and journals. The newest link is to the product recall page of the Consumer Product Safety Commission. The site is available at www.osha.gov.
- Compliance assistance and enforcement components make of the foundation of a new initiative announced by OSHA to focus attention on safe chemical management programs in the workplace. The Hazard Communication Initiative was developed to improve the quality of hazard communications and to help employers and workers to comply with the OSHA Hazard Communication Standard. A new page on the OSHA web site contains details of the program and a review of the issues. Members of congress have been briefed on the initiative.
- During the past three decades, epidemiological studies have demonstrated inverse associations between blood lead concentrations and IQs of children at successively lower lead concentrations. Consequently, the Centers for Disease Control have repeatedly lowered the definition of an elevated blood level concentration, which now stands at 10 µg/dL. Still little is known about children's neurobehavioral functioning below this level. A new study reveals that blood lead concentrations, even those below 10 µg/dL, are inversely associated with IQ scores of children at 3 and 5 years of age. Thus, more children may be adversely affected by environmental lead than previously estimated.
- Free radicals have revolutionized chemistry.
- It takes alkynes to make up a world. ■



CALL FOR PAPERS
39TH ANNUAL LOSS PREVENTION SYMPOSIUM
APRIL 10-14, 2005
HYATT REGENCY, ATLANTA, GEORGIA

Here are the session topics for the 39th Annual Loss Prevention Symposium. Papers are solicited. Accepted papers will be published in the *Proceedings* and may be chosen for publication in *Process Safety Progress*.

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4. DUST EXPLOSIONS - Recent incidents in North Carolina, Indiana, and Kentucky illustrate how catastrophic dust explosions can be. Investigations by the U.S. Chemical Safety Board indicate that many organizations do not adequately understand the hazards of combustible dusts. This session invites papers discussing dust explosion hazards, methods to prevent them or mitigate their effects, and ways of enhancing awareness of dust explosion hazards in all potentially impacted facilities.

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1. PROCESS HAZARDS IN THE PHARMACEUTICAL INDUSTRY - Many processes for the manufacture of pharmaceuticals involve hazardous chemicals and hazardous processes. This session invites papers addressing design methods and operating procedures used in pharmaceutical manufacture such as safe handling of hazardous chemicals, safe procedures for various unit operations and unit processes, design of reaction systems, and methods of avoiding runaway reactions.

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5. CHEMICAL REACTIVITY HAZARDS - The analysis of chemical reactivity hazards and the prevention and mitigation of uncontrolled chemical reactions are centrally important to the loss prevention community. This session invites new research, tools, and methods that identify, characterize, or offer design and operational guidance related to chemical reactivity hazards. Related issues include controlling intended reactions that yield useful products, runaway reactions, instability, thermal sensitivity, material incompatibility, and uncontrolled reaction consequences.

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2. FIRES AND EXPLOSIONS - Fire and explosion hazard identification, analysis, prevention, and mitigation are important issues in loss prevention. This session invites papers that offer new data, methodologies, technologies, and cost effective solutions that address these hazards.

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6. CASE HISTORIES AND LESSONS LEARNED - Reviews of process safety incidents and near misses provide valuable learning opportunities. Papers dealing with incidents, near misses, and the lessons learned are solicited.

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3. INERTING OF REACTORS AND PROCESS EQUIPMENT - This session addresses the design and installation of inerting systems for equipment and processes containing flammables, combustible dusts, monomers requiring the presence of oxygen to activate an inhibitor, and other applications where an inert atmosphere is needed for process safety.

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TO PROPOSE A PAPER, please contact the appropriate session chair and submit a typed abstract of 150-200 words by **July 8, 2004**. Electronic submissions by e-mail are encouraged. Session chairs will select the papers to be presented and contact the authors by **August 1, 2004**. Authors of selected papers will need to complete a Proposal-to-Present (PTP) on the AIChE web site by **September 30, 2004**. Manuscripts for publication in the *Proceedings* are due to the chairs by **December 10, 2004**. ■

CALL-FOR-PAPERS
7TH BIENNIAL PROCESS PLANT SAFETY SYMPOSIUM
APRIL 10-14, 2005
HYATT REGENCY, ATLANTA, GEORGIA



The South Texas Section of AIChE and Program Area 11b of the AIChE Safety and Health Division will sponsor the 7th Biennial Process Plant Safety Symposium (PPSS) at the AIChE Spring National Meeting in Atlanta, April 10-14, 2005 in conjunction with the Loss Prevention Symposium. The objectives of the PPSS include providing new technical information on the identification, prevention, and mitigation of process hazards, the prevention or mitigation of damage to and resultant loss of production facilities, and protection of public health and welfare due to the hazard potential of chemicals and processes.

The PPSS was originally established and organized locally by the South Texas Section of AIChE but is now organized as Program Area 11b under the Safety and Health Division. The first PPSS was held in the Spring of 1992.

Persons interested in presenting a paper should contact either Chair Kathy Pearson, Co-Chair Jim Thompson, or the Chair for the specific session listed below. A typed abstract of 150-200 words must be submitted by **July 8, 2004**. Please include all contact information with the abstract. Session chairs will select papers to be presented and will contact authors by August 1, 2004. Final manuscripts for publication in the Symposium Proceedings are due to the session chairs by **December 10, 2004**.

Symposium Chair
Katherine Pearson
Rohm and Haas Company
6519 State Highway 225
Deer Park TX 77536
281-228-8236
FAX: 281-228-8675
KatherinePearson@
rohmhaas.com

Symposium Co-Chair
James R. Thompson
INVISTA
P. O. Box 2626
Victoria, TX 77902
361-572-2032
FAX: 361-572-1552
james.r.thompson@invista.com

techniques such as HAZOP, Layer of Protection Analysis (LOPA), and QRA.

<u>Chair</u> Phil Myers Advantage Risk Solutions Inc	<u>Co-Chair</u> Michael Livingston WS Atkins 281-496-1073 FAX: 281-496-1225 pmyers@arisksolution.com
740-965-6304 FAX: 740-965-9159	Michael.Livingston@ AtkinsAmericas.com

1. HUMAN FACTORS ENGINEERING AND ERGONOMIC ENGINEERING - Human factors and poor ergonomics are often identified as incident root causes. This session invites papers demonstrating the application of human factors or ergonomic engineering methods to minimize operator, maintenance, or management error. Included are innovative solutions to ergonomic problems, the design of man-machine interfaces, and methods to reduce fatigue.

Chair
Don Lorenzo
Process Safety Institute Div.
ABS Consulting
865-671-5842
FAX: 865-966-5287
dlorenzo@absconsulting.com

Co-Chair
Lawrence Schulze
University of Houston
713-743-4196
FAX: 713-743-4190
ljhs@uh.edu

4. INCIDENT INVESTIGATIONS AND METHODS OF INTERPRETING EVIDENCE - Accurate interpretation of physical evidence is critical to effective accident investigations. This session will include papers demonstrating how to protect, preserve, collect, store, interpret, and document physical and electronic information.

<u>Chair</u> Lisa M. Morrison PPG Industries Inc. 412-492-5395 FAX: 412-492-5377 lmorrison@ppg.com	<u>Co-Chair</u> Don Connolley Akzo Nobel Chemicals 914-674-5569 don.connolley@ akzonobel-chemicals.com
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2. INHERENTLY SAFER PROCESS DESIGN AND OPERATIONS - This session invites papers demonstrating the use of inherently safer process design methods to reduce the risk of process operations. Included are lower pressure/lower temperature processing, less hazardous chemical use, and equipment made to withstand process extremes.

Chair
Jack Chosnek
KnowledgeOne
281-538-0220
JC@knowledge1.net

Co-Chair
Vic Edwards
Aker Kvaerner
713-270-2817
vic.edwards@akerkvaerner.com

5. CASE HISTORIES AND LESSONS LEARNED - (joint session with the Loss Prevention Symposium - see page 8)

6. IMPROVING SAFETY CULTURE - Papers are invited demonstrating approaches to reducing incidents through management processes such as operational discipline, behavior sampling, operator training, operating procedures, and interactive task management systems.

<u>Chair</u> Dr. M. Sam Mannan Mary Kay O'Connor Process Safety Center 979-862-3985 FAX: 979-845-6446 mannan@tamu.edu	<u>Co-Chair</u> Dr. William J. Rogers Mary Kay O'Connor Process Safety Center 979-845-3330 FAX: 979-845-6446 wjrogers@tamu.edu
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3. RISK ASSESSMENT - Risk assessment is key to evaluating and improving the safety and business risk of process systems. Papers are invited demonstrating the application of both qualitative and quantitative risk assessment



Second Vice-Chair Bob Benedetti (NFPA) presents the 2004 Walton-Miller Award to Henry Febo (FM Global).



Ellen Kullman, Group Vice President, DuPont Safety and Protection, addresses the Annual Safety and Health Division Dinner.



2004 Bill Doyle Award winner Erdem Ural (Loss Prevention Sciences & Technologies) with 2003 Loss Prevention Symposium Chair John Murphy (US Chemical Safety Board).

SCENES FROM THE 2004 NEW ORLEANS MEETING APRIL 25-28

Photos courtesy of Dennis Hendershot,
Rohm and Haas Company.



Art Dowell, Cheryl Teich, and Safety and Health Division Director/2005 Process Plant Safety Symposium Chair Kathy Pearson, all from Rohm and Haas.



Dan Crowl (Michigan Tech. University), Co-Editor of *Process Safety Progress*, and 2004 Loss Prevention Symposium Chair Bob Johnson (Unwin Company).



Safety and Health Division First Vice-Chair Walt Silowka (Air Products & Chemicals Inc.) introduces the speaker at the Annual Dinner.



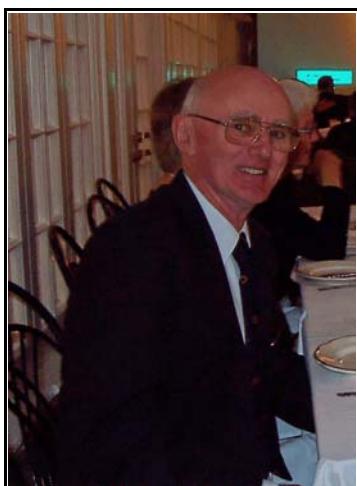
Program Area 11a member Brian Dunbobbin (Air Products & Chemicals Inc.), Safety and Health Division Director Pete Lodal (Eastman Chemicals), and Vince Van Brundt (University of South Carolina).



CCPS staff member Karen Person, CCPS Director Scott Berger, and Safety and Health Division Chair Scott Ostrowski (ExxonMobil Chemicals).



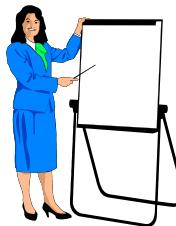
Bill Doyle Award winner Erdem Ural (Loss Prevention Sciences & Technologies) with long time Program Area 11a member and 1999 Walton-Miller Award winner Dick Schwab.



People from around the world attended the 2004 Loss Prevention Symposium including Mark Tweeddale who came all the way from Australia.



1990 Walton-Miller Award winner Stan Grossel (Process Safety & Design Inc.).



PAPERS PAPERS PAPERS

"Predicting the Self-Accelerating Decomposition Temperature (SADT) of Organic Peroxides Based on Non-Isothermal Decomposition Behavior," D.Yang, H.Koseki, and K.Hasegawa, *J.Loss Prev.Process Ind.* **16**, No.5, 411-416 (September 2003).

By combining a recently proposed elaborately simulated decomposition kinetic model for organic peroxides with the Semenov model of thermal explosion, the SADTs of organic peroxides were predicted. The non-isothermal decomposition of eight organic peroxides were measured using a heat flux calorimeter. By using the experimental results and the developed method, the no-return temperatures and the SADTs of these substances were predicted and were in agreement with literature values.

"Dynamic Disadvantages of Intensification in Inherently Safer Process Design," W.L.Luyben and D.C.Hendershot, *Ind. Eng. Chem. Res.* **43**, 384-396 (2004).

The objective of this paper is to demonstrate that intensification can sometimes adversely affect the dynamics of a process and result in larger disturbances from normal operation because of changes in the process feed rates or conditions, process utility disturbances, or other external environmental factors. Because a "robust" process, one that can tolerate significant changes from its external environment, is also a strategy for inherently safer design, this represents an interesting conflict in designing inherently safer processes. Four examples are presented to illustrate the effects.

"Nano Unknown," M.J.Felton, *Today's Chemist at Work*, **13**, No.3, 19-21 (March 2004).

When constructed on nanoscales, ordinary compounds or elements display properties not seen in bulk samples of the same material. Researchers are now examining the impact of inhaling nanoscale forms of materials that would not necessarily be a health concern in bulk form. For example, when mice were exposed to carbon nanotubes, many died immediately. The mice that survived, however, showed no signs of lingering problems. Probably, aggregation took place which caused some of the mice to suffocate.

"Intervention Effectiveness Research: Understanding and Optimizing Industrial Safety Programs Using Leading Indicators," S.I. Parameshwaran, J.M.Haight, E.D.Castillo, B.W.Tink, and P.W.Hawkins, *Chem.Health & Safety* **11**, No.2, 9-18 (March/April 2004).

Optimizing safety and health intervention strategies to decrease rates of injury and property damage with less costly safety programs can contribute to improved productivity and economic vitality in all activities that involve such risks. Results of research show that improved safety practices and improved profitability in industry is possible when one understands the mathematical cause and effect relationship between incidents (trailing indicators) and program interventions (inspections, training, safety meetings, and the like) designed to prevent them (leading indicators).

"Evaluation on Thermal Hazard of Methyl Ethyl Ketone Peroxide by Using Adiabatic Method," Z-M Fu, et al, *J.Loss Prev.Process Ind.* **16**, No.5, 389-393 (September 2003).

Ketone peroxides are capable of spontaneous decomposition, and violent decomposition occurs in contact with mineral acids. In this paper, an adiabatic method is used to investigate the thermal hazard of methyl ethyl ketone peroxide (MEKPO), and mixtures of MEKPO with sulfuric acid in order to understand the effect of the presence of sulfuric acid on the thermal stability of MEKPO.

"Exothermic Reactors: The Stable, The Unstable, The Uncontrollable," *Chem.Eng.* **111**, No.3, 54-59 (March 2004).

There is a fundamental distinction between operating reactors that are unstable and those that are uncontrollable. For a plant situation of a reactor that is unstable but controllable, guidelines are provided to maximize the ability of the control system to regulate the reactor temperature. Sound process control principles need to be applied.

"Green Engineering: Defining the Principles - Results from the Sandestin Conference," M.A.Abraham and N.Nguyen, *Environmental Progress* **22**, No.4, 233-236(December 2003).

During a conference at the Sandestin Resort in Florida, a set of nine principles was established to implement green engineering solutions. ■