



The South Texan

VOLUME 103 NUMBER 3

NOVEMBER, 2002

MONTHLY MEETING • NOVEMBER 7, 2002

**Speaker: Ms. J. P. Riorden, Special Agent,
Weapons of Mass Destruction (WMD)
Coordinator,
Federal Bureau of Investigation**

Subject: "Terrorism and the Chemical Industry"

Agent Riordan will present the Federal Bureau of Investigation's current efforts to fight against terrorism and how it has affected the chemical and petroleum industry. An overview will also be presented on the varying aspects of the WMD program and the available response assets.

Agent Riordan is a graduate of Texas A&M and has been employed by the Federal Bureau of Investigation for almost 13 years. She began her career in the White Collar Program assigned to investigate failed financial institutions. From there she worked bank fraud matters until being moved to the Violent Crime Program. There Agent Riordan was assigned to the bank robbery task force which also included investigative duties in the area of extortion and kidnapping.

Agent Riordan was then assigned to the national initiative "Innocent Images," which was the FBI's undercover program designed to address issues on Internet child predators. In January, 2001 she transferred to the Domestic Terrorism squad where she became the WMD Coordinator.

How to Stay in Touch with South Texas Section

Website:

<http://www.sts-aiche.org>

Newsletter Access:

- 1) Snail Mail to all registered STS members - one week before meeting +/- one week.
- 2) Website at [sts-aiche.org](http://www.sts-aiche.org) - click on Newsletter or Newsletter Archives - accessible mid-month, before meeting.
- 3) E-Mail - enroll at the Topica prompt at the bottom of the STS home page - includes URL to current Newsletter, accessible mid-month before meeting.

Workshops and Dinner Meeting Topics, Speakers, Synopses, and Bios:

About a week after meeting, speakers and topics appear on the website home page for the next month's meeting. Navigation keys home on detailed synopses and bios for each workshop or dinner meeting presentations.

Workshop Announcements

Refer to pages 3 and 4 for detailed workshop topic and speaker information. Check the room assignments in the Hotel Lobby to join the group that interests you.

Process Engineering / Plant Operations

Topic: 3 "Six Sigma Quality"

Speaker: Ms. Nancy White,
Commercial Master Black Belt
GEBetz

Joint Process Safety Management / Environmental 2

Topic: "Process Safety During
Precommissioning/Commissioning
and Startup"

Speaker: Mr. Julio Peguero

CAST {

Topic: "Relief Vent Sizing for Two-Phase
Flow"

Speaker: Dr. Ron Darby
Professor (Emeritus) of
Chemical Engineering
Texas A & M University

Government Interaction Committee

Topic: 4 Texas P.E. Sunset Issues

Discussion

Leader: Dennis Griffith
Granherne Inc.

Meeting Location

RADISSON HOTEL ASTRODOME

(Kirby at South Loop)

WORKSHOPS (NO FEES - NO RSVP) 5:30-6:30 p.m.
EXECUTIVE COMMITTEE 4:30-5:30 p.m.
SOCIAL PERIOD 6:00-7:00 p.m.
DINNER 7:00-7:45 p.m.
PRICE .. \$ 22.00 with reservation • 24.00 without reservation
..... Students and Unemployed 1/2 price
MEETING / SPEAKER 7:30-8:30 p.m.
AUTO - R.S.V.P. By 4:00 p.m., Tuesday, November 5, 2002
Call (713) 295 -4847
Make reservation using the STS web site: www.sts-aiche.org

2002 South Texas Section Officers

CHAIRMAN

AZIZ A. SIDDIQI, Ph.D.

Resochem Corporation
16630 Imperial Valley Drive Ste 156
Houston, Texas 77060
Ph: (281) 999-6111
Cell: (281) 723-4252
Fax: (281) 999-6181
resochem@flash.net

CHAIRMAN-ELECT

DAVID MITCHELL, P.E.

GDS Engineers
9009 West Loop South, Suite 800
Houston, Texas 77096-1719
Ph: (713) 295-4681
Fax: (713) 667-9241
E-mail: dave.mitchell@gdseng.com

SECRETARY

PAUL TEMME

Valero Refining-Texas, L.P.
P.O. Box 5038
Houston, Texas 77262-5038
Ph: (713) 923-3440
Fax: (713) 923-3561
paul.temme@valero.com

TREASURER

MATTHEW KOLODNEY, P.E.

TCEQ
5425 Polk Avenue, Suite H
Houston, Texas 77023-1486
Ph: (713) 767-3752
Fax: (713) 767-3761
mkolodne@tceq.state.tx.us

PAST CHAIR

ANDREW WILSON

2110 ELMEN ST. #1
Houston, Texas 77019-6802
Ph: (713) 521-3141
awilson77@aol.com

EXECUTIVE COMMITTEE

POSITION 1, EDUCATION

ERNIE ALTHAUS

GDS Engineers
9009 West Loop South, Suite 800
Houston, Texas 77096
Ph: (713) 667-9162
ernie.althaus@bigfoot.com

POSITION 2, OUTREACH

RICHARD WILLSON, Ph.D.

Department of Chemical Engineering
University of Houston
S222D Engineering Building 1
Houston, TX 77204-4004
Ph: (713) 743-4308
Fax: (713) 743-4323
rcwww@yahoo.com
willson@UH.EDU

POSITION 3, COMMUNICATIONS

KIM DIXON, P.E.

Mustang Engineering, Inc.
16001 Park Ten Place
Houston, TX 77084
Ph: (713) 215-8611(w)
Ph: (713) 977-9755(h)
Fax: (713) 977-9756
kim.dixon@mustangeng.com

POSITION 4, HUMAN RESOURCES

TIM MCMINN, Ph.D.

ExxonMobil Chemicals
4500 Bayway Dr.
Baytown, TX 77522
Ph: (281) 834-2633
tim402@hotmail.com

MEMBERSHIP CHAIR

JERRY GRESHAM

Gresham & Gresham
P. O. Box 820888
Houston, Texas 77282
(713) 780-1000
Fax: (713) 781-3300
gresham@pdq.net

PRINTING & MAILING

HOLLY PRO GRAPHICS

3108 Houston Ave.
Houston, TX 77009
(713) 644-3700
Fax: (713) 644-8725
typeforu@aol.com

NEWSLETTER EDITORS

GARY CONGRAM

SparTEC
J. Ray McDermott, Inc.
757 N. Eldridge Pkwy. #1104
Houston, TX 77079-4411
(281) 870-5313
Fax: (281) 870-5220
gecongram@mcdermott.com

JIM MORRIS

(281) 358-7986
ejmorriss@vonl.com

CHEMICAL / ENGINEERING OPPORTUNITIES

Kellogg Brown & Root, Inc.

10200 Bellaire Blvd.
Houston, Texas 77072
Ph: (281) 575-4348
Fax: (281) 575-5258

From the Chairman

Aziz Siddiqi



This time of the year we elect officers for STS to run the affairs of our section in the coming year. The ballot will be mailed shortly for 2003 elections. We need your active participation in the voting process. Please select the candidates of your choice and mail in your ballot promptly. You will also receive another ballot from the National AIChE this month for changes in the Constitution. Please vote on these proposed changes and mail the ballot back to National.

The Golf Tournament organized by Richard Chu was a great success and exceeded his expectations. The event was sponsored by KBR and BASF. There were 48 participants who thoroughly enjoyed the tournament. We may decide to continue this event in the future and use this as a vehicle for revenue generating for our section activities.

Due to some operational problems the STS Annual Technical Meeting has been moved to Spring. Charlie Waligura is still looking for volunteers for different assignments for this event. Please contact Charlie if you want to help in this activity.

We look forward to seeing you on November 7.

From the Editor

Thomas Jefferson was given the credit for a quotation by J. P. Curran in his speech of 10 July 1790 on the right of election of the Mayor of Dublin. "The condition upon which God hath given liberty to man is eternal vigilance....". The speech continues, giving servitude as the consequence of man's crime and punishment of his guilt. Our dinner meeting speaker, another J. P. (Riordan) and special agent of the FBI on weapons of mass destruction (WMD), will discuss terrorism and the chemical industry.

Hollywood has been asked by our national government to develop scenarios for turning everyday commercial vehicles, plants, pipelines, and infrastructure into WMD. Chemical engineers, working daily with hazardous materials and having perfected methodologies that employ scenario risk analysis and probability rating, are far better equipped to postulate such scenarios in a more cost effective manner than Hollywood. Join us for a timely and interesting evening with Ms. Riordan on 7 November 2002.

Jim Morris

The South Texan is published monthly, except June, July and August, by the American Institute of Chemical Engineers, South Texas Section. Opinions expressed are those of the authors and not of AIChE.

ADDRESS CORRECTIONS

To expedite your request, all inquiries should be made through New York:
xpress@aiche.org
1-800-AICHEM
1-800-242-4363
AIChExpress Service Center
345 East 47th Street, NY 10017

The Purpose of the Section, a nonprofit scientific, educational and charitable organization, is the furtherance of the aims and purposes of the American Institute of Chemical Engineers, and the advancement of the science of chemical engineering and of related sciences through (i) the education of members and non-members in the sciences (ii) career guidance and financial assistance to students of the sciences and (iii) encouragement of research in the sciences.

Workshops Announcements – detailed information

Process Engineering / Plant Operations

Topic:

“Six Sigma Quality”

Speaker: Ms. Nancy White,
Commercial Master Black
Belt, GEBetz

Six Sigma is a GE wide initiative focused on providing value through improved products, processes and services. Six Sigma projects consist of five basic activities: Define, Measure, Analyze, Improve and Control. The goal of the first four activities is to minimize variation and reduce defects so that the quality of products and processes approaches the Six Sigma standard deviation of 3.4 defects in one million opportunities. The fifth activity, Control, provides mechanisms to assure that Six Sigma improvements are maintained. This talk will broadly introduce the Six Sigma concept; what is it, how it's been utilized by GE and how it can be applied in the manufacturing environment.

Nancy White is currently a Commercial Master Black Belt for GEBetz. She offices in GEBetz' global technology and laboratory center in The Woodlands, Texas. Born and raised in South Texas, Nancy holds a BS in both Animal Science and Bio-medical Science from Texas

A&M University. She has been employed by GEBetz since 1987, spending time as a field representative focused on the Petrochemical/Refining market in Southern California and a manager in GEBetz' corporate offices in Trevoze, Pennsylvania. She returned to the Houston area in 1998 to concentrate on the burgeoning merchant power industry. Nancy currently leads GEBetz' “At the Customer – For the Customer” Six Sigma effort globally.

Contacts: Jim Morris

281-358-7986

ejmorriss@vonl.com

Steve Haynie

713-336-5221

Steve.Haynie@Equistarchem.com

David Karesh

832-351-6944

david.karesh@jacobs.com

Joint Process Safety Management / Environmental

Topic:

“Process Safety During
Precommissioning/
Commissioning and Startup”

Speaker:

Mr. Julio Peguero

Commissioning and start-up of a plant represent special challenges in process safety. These include the transition from a construction environment to an operations one, the content, documentation, and timing of implementation of safety rules, and the hidden risks in a facility not yet completed and starting to be operational. The implementation of effective hybrid and combined safety protocols within systems, areas and entire units undergoing transition will be discussed. Management of the different safety focuses for both grass roots and expansion projects will be addressed with real life examples.

Julio Peguero has 29 years of experience domestically and internationally in Operations Management, Process Design and Engineering. He has had meaningful roles in the design, start-up and/or operations of over 10 facilities

comprising 13 major technologies. These added up to \$2 billion of projects and included six grass roots start-ups. He has a B.S. in Chemical Engineering from the University of Puerto Rico and an MBA from Xavier University (Cincinnati), as well as a teaching certificate from the University of St. Thomas in Houston. He is a registered P.E. in Iowa and Puerto Rico.

Contact:

Jack Chosnek

(281) 538-0220

E-Mail: JC@knowledge1.net

Matt Kolodney

(713) 767-3752

E-Mail: mkolodne@tceq.state.tx.us

Workshops continue on page 4

Engineering Shortcuts Chris Tagoe

The contribution this month comes to us from William W. Wheeler. William is retired and previously worked for Rohm & Haas in Deer Park. The contribution is an excerpt from an article he published. (Jan. 20, 1964 – Chemical Engineering).

“Remembering one (easy) dimensional constant (a 4-in schedule 40 pipe delivers 40 gpm at 1 ft/sec) and the (easy) squares of small numbers, will make pipe velocity problems a matter of mental arithmetic”.

For example, what is the average liquid velocity in a 3 in pipe delivering 340 gpm?

1 ft/sec in a 4 in pipe is 40 gpm.

1 ft/sec in a 3 in pipe is $40 \times (3/4)^2 = 22.5$ gpm.

Velocity in a 3 in pipe delivering 340 gpm is $340/22.5 = 15$ ft/sec.

Don't forget to send me your suggestions for publication. Believe it or not, I get few submissions and your chances of getting published are virtually guaranteed. Simply send it to me via email to Chris.Tagoe@Equistarchem.com. You will be recognized in the column.

Workshops Announcements – detailed information

CAST Workshop

Topic:
“Relief Vent Sizing for
Two-Phase Flow”

Speaker:
Dr. Ron Darby
Professor (Emeritus) of
Chemical Engineering,
Texas A & M University

There are many causes of two-phase flow through the relief vent, either a relief valve or a rupture disk. These include a flashing volatile liquid at elevated temperature caused by fire, reaction, and external heat source, a system containing both liquid and gas, e.g., storage with inert gas padding, etc. Proper sizing of the relief vent is critical. Undersizing results in a partially protected system, and oversizing results in unstable operation with probable valve and/or piping damage or undersized discharge piping. The vent size is calculated by using a model for the two-phase mass flux in a nozzle, with the manufacturer's vent discharge coefficient to correct for characteristics not considered in the model. There are several methods or “models” that are used, and each has advantages and disadvantages. The fundamental principles, assumptions and limitations of the most popular methods will be summarized, and the predicted mass flux for several cases involving ethylene near the critical point will be compared. The method involving the least number of restrictions will be recommended.

Dr. Darby obtained his undergraduate and doctorate at Rice University. He did post-doctorate work at Cambridge University in England. He has been a visiting professor at

Ruhr University, Bochum, Germany; University of Melbourne, Australia; and Technical University of Denmark. He has published more than 60 papers in technical journals and book chapters and two books with Marcel Dekker - “Viscoelastic Fluids”, 1976 and “Fluid Mechanics for Chemical Engineers” 2nd Edition 2001. Research interests include rheology and flow behavior of non-Newtonian and viscoelastic fluids, turbulent drag reduction, slurries and suspensions, gas-liquid two-phase flow, chemical process safety, and applied electrochemistry and corrosion.

Dr. Darby is Past Chair of STS and Program Chair for the 2003 AIChE National Meeting in New Orleans. In addition to all of this, he spent three years on active duty and many years in the reserves of the US Navy, where he retired with the rank of CAPTAIN, USNR. He also worked for three years in fuel cell research at Ling-Tempo-Vaught (LTV) Research in Dallas, Texas.

Contacts:
Shane Tierling
713-753-3692
shane.tierling@halliburton.com

John Cheng
281-604-3294
john.cheng@basell.com

Government Interaction Committee

Topic:
Texas P.E. Sunset Issues

Discussion Leader:
Dennis Griffith,
Granherne Inc.

At November's GIC meeting, we will continue to work on developing the STS-AIChE positions regarding the Texas Engineering Practice Act sunset review by the Texas Legislature in 2003. The issues that concern the STS-AIChE include: firm registration and fees, mandatory continuing education, use of the title “engineer,” the engineering faculty exemption, the industrial exemption, the expert witness exemption, specialty certification, peer review, engineering services sales tax, and the \$200 engineering license surtax.

For a list of assignments for these issues, please go to the GIC's Texas P.E. sunset legislation Web page at:

<http://www.sts-aiche.org/Texas-PE-Sunset.htm>
Once the positions have been developed and

adopted by the STS-AIChE Executive Committee, they will also be posted on this Web page.

If you want to volunteer for any of the unassigned issues or have an issues that you think should also be addressed, please contact Dennis Griffith at either the phone or e-mail address below.

Please check the room assignments in the hotel lobby and feel free to drop and join us.

Contact: Dennis Griffith,
Granherne Inc.
Phone 281-575-4582
Fax 713-465-6914
E-Mail: dennisgriffith@pdq.net

JOIN AIChE
SOUTH TEXAS SECTION TODAY!

Dear Dr. Siddiqi:

The tournament on Saturday was a huge success - it really exceeded our expectation. I forecast 20-40 golfers for this first timer, and 48 showed up! KBR and BASF sponsored and participated the event. Other corporation teams or groups included Lyondell Chemicals, Bayer, NASA, Dow, etc. It is fitting that BASF team of 4 won the first place and KBR team won the last place consolation trophies. Many establishments including Chemstations donated 50+ trophies and prizes. I received full-time support from Jim Fries, Danny Bell, and Pat McPartland - all from Advanced Companies. There were two amateur golfer veterans from Puerto Rico: Cesar Rivera, USGA Committee Member and Butch James, 9 times PR Amateur Champion. These 5 gentlemen are instrumental in the running and success of the tournament. Our own David Silarski provided valuable help in the registration and entry fee collections. Jim Morris also provided big help in putting announcements in the STS newsletter and on the STS website.

We have had 16 trophies/awards and 40+ prizes including an iron set and a custom made putter on top of a grab bags, beer, and supper for everyone. Those golfers who did not make the event have really missed something.

Several things came out of the tournament:

1. Jim Fries and Danny Bell, will come to the STS November dinner

meeting to present the surplus check for the STS scholarship fund.

2. I would recommend we continue the event next year, so a decision needs to be made before the end of the year or earlier. We can better promote the event to big corporations, before their charity funds run out at mid year.

This is a lesson learned through promotion this year. Many corporations told us that they'd love to sponsor the tournament but ran short on this year's charity budget.

3. If STS decides to go next year, I would recommend changing the fund drive from college scholarship to engineers' education for the use of the Monthly Seminars.

Richard R. Chu, Ph.D., P.E.

AIChE Member Engineering Specialist

Lockheed Martin Corporation

281-333-6833 Office

P.S.: My Chu family team of 4, including my wife Eva, sons Kevin and Michael, won the third place, after losing by one stroke to the first place BASF team and edged by the 2nd place Bell team by a 5th tie-breaker. And then adding insult to the injuries, we received no trophies by my own design - I did not order third place trophies. This is another lesson learned this year.....

CALENDAR OF EVENTS

DINNER MEETINGS

December 5, 2002

AIChE President's Address

Speaker: **Mr. Sid Sapakie**
National AIChE President

WORKSHOPS

December 5, 2002

Process Engineering/Plant Operations (PEPO)
"ASME VIII Code Pressure Vessel Design"

Speaker: **Don Bredbeck, P.E.** in
Mechanical Engineering, Mustang
Engineers and Constructors

SPECIAL EVENTS

Spring 2003

ANNUAL TECHNICAL MEETING

Location: To be announced

Contact: **Charles Waligura**, Meeting Chair

Tel.: 713-339-1550x136

E-mail: cwaligura@gemengr.com

MEMBERSHIP FORM

AIChE's South Texas Section

What have you done today as a professional chemical engineer to aid your fellow citizen or yourself? Join us and you'll be working with topflight, dedicated people with an unprecedented opportunity to exchange ideas and information in one of the fastest-growing fields of engineering.

Can you afford not to participate?

Fill out the form below and mail to:

Jerry Gresham • Gresham & Gresham
P. O. Box 820888 • Houston, Texas 77282
Ph.(713) 780-1000

I wish to join the South Texas Section of AIChE.

☐ My \$12.00 is enclosed.

Name: _____

Address: _____

City: _____

State: _____ Zip: _____

Phone: _____

National Member of AIChE? YES ☐ NO ☐



GDS Engineers

Petrochemical • Refining • Industrial

GDS is a 500 person engineering and construction management firm, with offices in Houston, Baytown, and Texas City. We perform front end and detailed design on projects up to \$100 MM TIC for refineries, petrochemical, polymers, and gas processing units.

The Process engineering department consists of 50 engineers, with an average of 20 years experience with E&C and operating companies. Process engineering activities include:

- Heat and material balance
- PFD generation
- Major equipment specification
- Process simulation, including SimSci Provision, Hysys, and Aspen.
- Unit debottlenecking and optimization studies
- Tower and vessel design
- Heat exchanger design
- Process troubleshooting
- Flare/relief system analysis, including DIERS sizing
- System hydraulics
- Environmental consulting, including NOx reduction.
- Process hazards analysis (HAZOP, etc.)

For information, please contact

Mike Najarian, P.E., process engineering manager

ph: 713-667-9162 • fax: 713-667-9241

email: mike.najarian@gdseng.com.

The GDS website is: www.gdseng.com

Searching for the best heat exchanger design software?

You found it.



HTRI **Xchanger Suite**®—an integrated, easy-to-use suite of tools that delivers accurate designs of

- shell-and-tube heat exchangers
- air coolers
- tube layouts
- plate-and-frame heat exchangers
- economizers

Contact HTRI for a demo or more information on other products and services.

Heat Transfer Research, Inc.
150 Venture Drive
College Station, Texas 77845
USA



+1-979-690-5050 voice
+1-979-690-3250 fax
Marketing@HTRI.net

A Few of the Services Provided Are:

- Gamma Scanning
- Radioactive Tracing
- Neutron Backscatter
- Helium Leak Testing
- FCC & Reactor Diagnostics
- Cat-Scans
- Laser Coke Drum Scans
- Global Piping & Vessel Inspections (EMAT)
- Infrared Thermography
- Steam Air Decoke Monitor & Control
- Partial Discharge Testing of Motors and Generators
- Mechanical Integrity Inspection and Analysis



Process Diagnostics



Magna-Tec



Infrared Surveys



IRIS Power Engineering



GFS/NDE

Achieve Optimum Productivity with
Tru-Tec Services, Inc.
On-line Analysis



Tru-Tec Services, Inc.
11005 W Fairmont Pkwy
La Porte Tx 77571
800-288-8970 www.tru-tec.com

ADVERTISING SPACE AVAILABLE

Contact: Jim Morris

Address: 3010 W. Lake Crescent Dr. • Kingwood Texas 77339

281-358-7986 • e-mail: ejmorris@vonl.com

Non-Profit
U.S. Postage
PAID
Houston TX
Permit No.
5172

AMERICAN INSTITUTE OF
CHEMICAL ENGINEERS
SOUTH TEXAS SECTION
c/o Holly Pro Graphics, Inc.
3108 Houston Ave
Houston Texas 77009

