SOCIETY OF PIPING ENGINEERS AND DESIGNERS

SPECIAL POINTS OF INTEREST:

- **SPED 2009 Annual General Business Meeting and Corporate Member Showcase, November 17th, Omni Westside, Houston, TX**
- **AVEVA Open House December 16, 4-7pm, Houston, TX**

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SPED Update November 2009

VOLUME 2, ISSUE 11 NOVEMBER 2009

Pace of Piping News Quickens at Annual Meeting

Suddenly it seems that the SPED Annual General Business Meeting and Corporate Member Showcase has attracted a lot of attention:

An outstanding panel has been assembled to assess the market for pipers.
Contributed door prizes have reach $5,500 in value and may go higher.
All four Academic Institution Members will exhibit.
Multiple Corporate Members signed on to sponsor and exhibit.
Several Charter Members of the new PPD 100% Club will be announced.

What's going on here?

I think that things are starting to break loose.

Item: The UK has announced the location of 10 nuclear reactors it plans to build.
Item: India and China continue to spend their dollars on buying oil and other natural resources
Item: Despite setbacks at other firms, KBR increased their backlog and along with other EPSs, their profits.
Item: Industry insiders admit that if only one or two petrochemical projects are released the current glut of pipers would disappear.

We should hear more on this from our panel of industry experts:

Durga Agrawal, PT&P, Inc.
Deborah Jones, SWDS L.L.C.
Paul Spring, AVEVA
Israel (Izzy) Perez, Amerapex Corp.

Durga Agrawal, a long time SPED supporter, is famous for lifting PT&P from a small pipe support producer to a full range expansion control manufacturing and engineering powerhouse. In all markets, PT&P seems to expand. I can't wait to see who is buying now and in the future.

Debby Jones, has placed thousands of piping designers in permanent and contract positions. I've asked her to tell us who is hiring and in what industries. She knows what the hiring managers are looking for and she talking to them every day.

Paul Spring is a vendor of high end software focusing on big capital projects. AVEVA makes money when companies create, expand and upgrade their plant and piping data. I hope Paul will tell us what software will ask of pipers and in which industries.

Finally, **Izzy Perez** is a widely know EPC sales executive known for his knowledge of services and technology sells and what doesn't. I asked Izzy to tell us about recent sales in the Houston area Petrochemical Market and what's coming. It should help us chart a path through this confusing economy.

These speakers will clarify what is happening and is about to happen to the piping design market.

Continued on page 13

SPED ANNUAL GENERAL BUSINESS MEETING

Hear our Panel of Piping Software, Fabrication, Placement and EPC Experts talk about the future of the Piping Profession and how it will affect you.

Durga D. Agrawal of Houston is President and Chief Executive Officer of Piping Technology and Products Inc. Mr. Agrawal is a member of the University of Houston Industrial Engineering Advisory Board and Alumni Board, and the University of Houston Cullen College of Engineering Leadership Board. He is also a member of the Board of Advisors and past President of the Indo-American Chamber of Commerce of Greater Houston, Board Member of Friedman Industries Inc, a member of the India Cultural Community and Industry Trade Advisory Committee, and past President of India House Inc. Agrawal received a Bachelor's degree from the University of Delhi in India, Delhi College of Engineering and a Master's and Doctorate degree in Industrial Engineering from the University of Houston.

Deborah Jones of Houston is the Owner of Southwest Design Services, L.L.C. (SWDS). Ms. Jones started a career working in the engineering business in 1973 and worked for four job shops before starting her own, SWDS in 1995. SWDS is a locally owned and operated staffing agency serving the petrochem/refinery onshore/offshore industries specializing in placing engineers, designers & CAD personnel. Ms. Jones attended both South Texas Junior College and University of Houston, and holds an Associate Arts degree.

Paul Spring is Vice President of Technical Services and Product Strategy and has 19 years of experience with AVEVA's products and technology. He is one of the founding members of the PDMS applicationware team, developing the user interface for much of the design and draft functionality of PDMS. Today, he successfully leads a team of more than 30 software and engineering experts to provide technical services to all aspects of AVEVA's operations in the Americas. Mr. Spring holds a Master's degree in Engineering from the University of Cambridge and started his career in the British civil service working in defense procurement, specializing in nuclear power engineering and reactor physics.

Israel "Izzy" Perez, Jr., is the Director of Business Development at Amerapex, a global provider of Engineering, Procurement, and Construction Management (EPCM) services. Izzy has over 30 years of sales and managerial experience in Fortune 500 companies, including EPC software and process design services. His experience spans process safety, compliance and design in both upstream and downstream applications. Izzy served as a SPED Director and is active in multiple ASME Pressure Vessel and Piping Codes and Standards Committees. He is now managing multiple Amerapex projects supporting process operations, maintenance and turnarounds.

Purchase tickets at www.spedweb.com

Go Forward With Support

IAI provides support, training and consulting services to enhance client staff skills and capacity. IAI services include process improvement through task analysis and training. IAI designed and hosts the SPED online training courses which prepare for Professional Piping Designer Certification. IAI has provided contract personnel for systems/database administration, project management, pipe stress analysis, and piping design.

Piping Training

- Host of SPED Online Training
- Customized Piping Design Training
- Online Piping Design Training
- Staff Assessment

User Support Services

- Design Office Setup & Support
- Backup and Client Data Protection
- Infrastructure Monitoring
- Unix/Linux/Windows Integration

Online Training

- Local Training Server Setup
- Learning Management System (LMS)
- Course Media Management & Failover

IT Support Services

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CORPORATE MEMBER SHOWCASE

2009 Sponsors

AVEVA software supports the world's marine, oil & gas, power and process industries with comprehensive solutions for the design, construction and lifetime support of all types of facilities. Proved on many of the world's most complex projects, AVEVA's best-in-class solutions let you create, control and exploit engineering data to reduce costs, accelerate timescales and maximize through-life performance. **Silver Sponsor.**

COADE, Inc. is a provider of software for plant design and engineering. COADE's aims are that design and engineering should seamlessly share relevant information, thereby improving accuracy and efficiency. COADE's product line conforms to those goals and includes: CAESAR II, the world's most widely used pipe stress analysis software; PV Elite for pressure vessel and heat exchanger design and analysis; CADWorx Plant Design Suite for intelligent plant design modeling, process schematics and automatic production of plant design deliverables; and TANK for the design and analysis of oil storage tanks. www.coade.com **Silver Sponsor.**

ECAD, Inc. is the #1 COADE dealer worldwide and has been the recognized Plant Design / Process & Power leader since 1995. We offer a combination of education, skill and industry experience available to all of Texas and Oklahoma as well as parts of Louisiana, Arkansas, Missouri, Kansas, New Mexico, Arizona, Mississippi, Alabama and Florida. We offer a complete line of COADE, Autodesk, and EdgeCAM software complemented by training, support and services. For the past 22 years, our mission has been to provide an integrated solution including hardware, software, and professional services at a fair price. Dream, Design, Deliver! **Silver Sponsor.**

Information Assets, Inc. provides support, training and consulting services to enhance client staff skills and capacity. IAI services include process improvement through task analysis and training. IAI designed and hosts the SPED online training courses which prepare for Professional Piping Designer Certification. IAI has provided contract personnel for systems/database administration, project management, pipe stress analysis, and piping design. **Platinum Sponsor.**

Intergraph is the leading global provider of engineering and geospatial software that enables customers to visualize complex data. Businesses and governments in more than 60 countries rely on Intergraph's industry-specific software to organize vast amounts of data into understandable visual representations and actionable intelligence. Intergraph's software and services empower customers to build and operate more efficient plants and ships, create intelligent maps, and protect critical infrastructure and millions of people around the world. **Silver Sponsor.**

Piping Technology & Products, Inc. and its wholly owned subsidiaries (U.S. Bellows, Inc., Sweco Fab, Inc., Pipe Shields, Inc., and Anchor Darling, Ent.) offer a wide range of engineered products and services for various industries and applications. From engineered pipe supports, expansion joints, pre-insulated pipe supports, and miscellaneous fabrication to various engineering and technical services, PT&P has decades of experience providing products and services for all your engineering and construction needs. **Gold Sponsor.**

SNC-LAVALIN Engineers and Constructors - Houston Business Unit

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- Continuing Services Relationships with Major Chemicals & Petroleum Owners
- Currently Executing Projects in Excess of $1 Billion

Silver Sponsor

Southwest Design Services, L.L.C. is a locally owned and operated contract staffing agency. We specialize in placing designers and engineers of all disciplines in the petrochemical/refinery onshore and offshore industries. We focus on providing qualified candidates for contract and permanent job needs. **Silver Sponsor.**

Exhibiting Academic Institution Members

HOUSTON COMMUNITY COLLEGE - Offering students in the Houston and surrounding areas professional education opportunities in all aspects of Drafting and Design. Students have a selection of Drafting and Design generalist to specialization degrees and can enroll in the Process Piping Design AAS degree, and two specialized certificates.

LEE COMMUNITY COLLEGE - Located in Baytown, Lee Community College offers a variety of Adult Continuing Education training for the Process Piping Professional. Students are encouraged to enroll in their AAS Process Piping Design degree program.

MACOMB COMMUNITY COLLEGE - Situated in the heart of the Warren, Michigan, students attending Macomb Community College are admitted to a special training program to repurpose Automotive Designers as Piping Designers.

UNIVERSIDAD de ZARAGOZA - With several locations in Spain, UZ offers students an online Masters in Process Piping Design following in SPED PPD Certification. Students interact with instructors online while able to continue their professional careers.

SPED acknowledges the following sponsors for their generous donations of door prizes.

AVEVA · COADE Inc. · Information Assets Inc. · Intergraph · PI Integrated Systems · PT&P

Piping Technology & Products, Inc.

U.S. Bellows, Inc. | Sweco Fab, Inc. | Pipe Shields, Inc. | Fronek Anchor/Darling Enterprises, Inc.

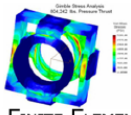
"We Are More Than Just Pipe Supports"

Wide Variety of High-Quality, Competitively Priced Engineered Products

"For All Your Engineering Needs"

Large Inventory

Product Testing



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Insulated Supports
(Hot & Cold Shoes)

Uninsulated Supports

Support Assembly Components

Slide Plates

Fabricated Pipe Supports,
Guides, and Anchors

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Industry News Snapshots

Source Contractors Unlimited: http://www.contractorsunlimited.co.uk/news-int1.shtml

Contractors:

Aker Solutions

AMEC

Fluor

Halliburton

KBR

ExxonMobil Extends Maintenance and Modification Contract with Aker Solutions
November 13, 2009 ExxonMobil has decided to extend the maintenance and modification contract with Aker Solutions, releasing a new option on an existing agreement. Work under the new option will last until December 2011. Contract parties are Aker Solutions' subsidiary Aker Offshore Partner AS and ExxonMobil Exploration and Production Norway AS.

KBR Receives Award for Woodside's Pluto Train 2 and Train 3 LNG Project
November 11, 2009 KBR Contract Award from Woodside for a Front End Engineering and Design (FEED) contract for Train 2 and Train 3 of Woodside's Pluto Liquefied Natural Gas (LNG) Project. Contract also includes an option for early engineering, procurement and construction management services.

Aker Solutions Secures Major Power Project for TransCanada in North America
November 10, 2009 Aker Solutions awarded notice to proceed by TransCanada Corporation for construction of a 900 megawatt (MW) natural gas-fired combined cycle power plant in Oakville, Ontario, Canada. Under a joint venture, Aker Construction Canada Ltd, a subsidiary of Aker Solutions ASA, and HDR Corporation will execute engineering, procurement and construction work on the project in cooperation with TransCanada.

Halliburton Awarded Integrated Turnkey Drilling Contract for South Ghawar
November 6, 2009 Halliburton awarded integrated turnkey drilling contract in South Ghawar. Located approximately 200 kilometers (124 miles) from the city of Dhahran, the Ghawar field is the world's largest oil field and the contract would involve work in Uthmaniyah, Haradh, Hawiyah and Shedgum.

KBR Awarded Contract by Saudi Kayan Petrochemical Company for Operator Training Simulator
November 5, 2009 KBR awarded contract by Saudi Kayan Petrochemical Company (SAUDI KAYAN) to develop and implement an Operator Training Simulator (OTS) for its grassroots phenol plant located in Saudi Arabia. KBR, who is also the technology licensor for the phenol plant, will develop a customized, high-fidelity simulator to be used for the initial training of SAUDI KAYAN phenol plant operators and for continual refresher training after plant startup.

Fluor Awarded Gas Storage Contract in The Netherlands
November 3, 2009 Fluor Corporation awarded contract by TAQA Energy B.V., a subsidiary of the Abu Dhabi National Energy Company PJSC, for engineering, procurement and construction management services for its Bergermeer Gas Storage project in the North Holland province of The Netherlands. Work related to the gas treatment facility project will be performed by about 200 professionals located in Fluor's Haarlem operations center.

KBR Awarded FEED Contract by Chevron for Big Foot Topsides Project
November 2, 2009 KBR awarded contract by Chevron USA Inc. for front-end engineering and design of topsides for the proposed Big Foot development facility. The Big Foot field is located in the Walker Ridge Block 29 of the Gulf of Mexico and is owned by Chevron USA Inc. (operator), Statoil Gulf of Mexico LLC and Marubeni Oil & Gas (USA) Inc.

MMC AMEC Wins Engineering Studies for Shell's Malikai Deepwater Project
October 28, 2009 AMEC announces that MMC AMEC, its joint venture with MMC Oil & Gas, selected to provide basic engineering studies for Sabah Shell Petroleum Company's Malikai deepwater project, offshore Malaysia

NEW! SPED Online Courses

Society of Piping Engineers and Designers is now offering the following online courses:

- **PPD Piper BootCamp**

Ends in Level I Exam: Testing and Textbook Included

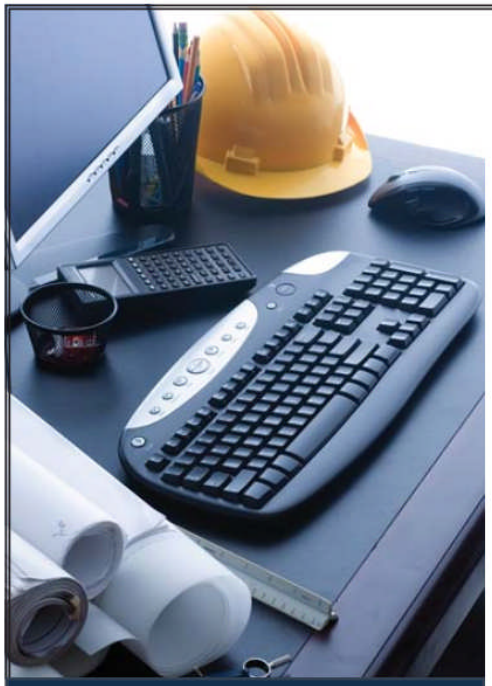
- **Process Plant Layout and Piping Design**

Ends in Level III Exam: Testing and Textbook Included

SESSION VIII 2009
December 21st - February 28th
Register early and get $100 off
Offer ends December 11, 2009

SESSION I 2010
January 18th - March 28th
Register early and get $100 off
Offer ends January 8, 2009

Register online at www.spedweb.com
Email spedadmin@spedweb.com or Call 832.286.3404



New project?
Staffing issues?

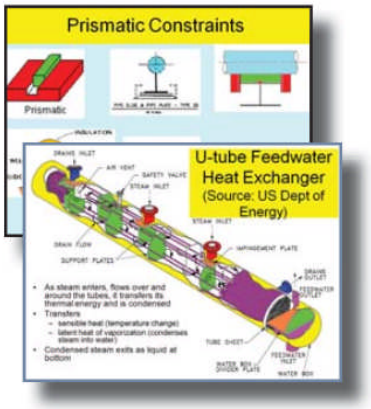
THE SPED PIPER VIDEO SERIES IS YOUR ANSWER.

"It's the Piper's resource for Information and Just-in-Time Training."

PIPER BOOTCAMP covers equipment and fittings necessary for routing pipeline from nozzle to rack to nozzle.

PROCESS PLANT LAYOUT covers knowledge and skills required for plant equipment and layout. Targets pipers already familiar with in-line pipe routing.

Version I contains original video recordings of live presentations by industry leaders.
Version II contains newly recorded videos with additional topics, and extended notes.



Designed for the new Piper and as a useful resource for experienced Pipers, the SPED Piper Video Series is considered the Industry Standard for piping training.

For more information, call 832.286.3404 or email videos@spedweb.com

Green Piping: Cutting Energy Costs at Design Time

Much of the cost savings is found in the design decisions of the piping designer and engineer.

SPED is considering a new thrust in the area of Green Piping. Green Piping is piping designed to be energy efficient and economical. SPED sees piping assessed at design time by designers acting as technicians under the supervision of engineers. With the cost of analysis small and supporting software widely available, most piping systems can be design with some assurance of energy cost-effectiveness. SPED's Green Piping Program could result in a body of knowledge and certificate similar to the Professional Piping Designer Certificate.

Energy Efficient and Economical Piping is usually best selected at design time. Most piping is not completely analyzed for energy and material economics during layout, except for an effort to place equipment and pipe racks to minimize expensive pipe. The US Department of Energy (DOE), however, has issued several guidance documents on process design to minimize energy costs of compressed air, motor-driven (pumps, compressors), process heating, and steam systems [See Figure 1]. Much of this cost savings is found in the design decisions of the piping designer and engineer. This program will address the contribution that can be made by piping designers.

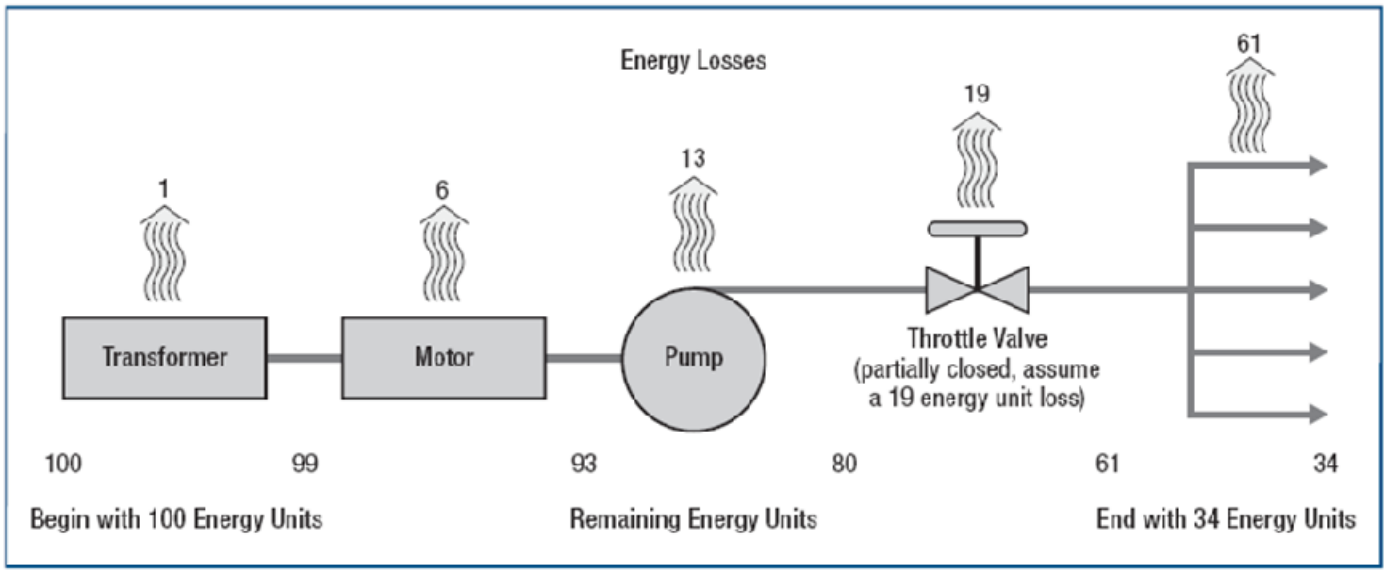


Figure 7. Energy losses in a pump system when a throttle valve controls flow

During design, many decisions are made as to the pipe, valves, fittings (PVF) to be used and the route of the pipe. Figure 2 illustrates the effect of choosing the pipe diameter on annual water pumping costs for a typical design.

http://www1.eere.energy.gov/industry/bestpractices/pdfs/motor.pdf, Accessed July 25, 2009.

Take the Pledge!

100% CLUB
SPED Professional Piping Designers

Join the SPED PPD 100% Club

SPED PPD 100% Club members pledge that 100% of their Piping Designers will become certified as Professional Piping Designers (PPD). Documenting staff credentials are simple:

- 100% of current Piping Designers get PPD Certified within one year of joining the program.
- New hires become PPD Certified within one year of employment.

Once you sign up and become a member of the PPD 100% Club, you can display the Club logo.

The PPD 100% is exclusively for SPED Corporate Members. SPED supports PPD 100% Club Members by providing the following:

- A copy of the PPD Review Video to help Piping Designers prepare for PPD exams.
- On-Call testing at the SPED office. (Fees apply.)
- Onsite testing review with 20 or more participants. (Fees apply.)
- Assistance to members in applying for State Funds to defray training and testing costs.

The PPD 100% Club Benefits EPC Employers, Clients and Piping Designers!

Contact us for more information.

SOCIETY OF PIPING ENGINEERS AND DESIGNERS
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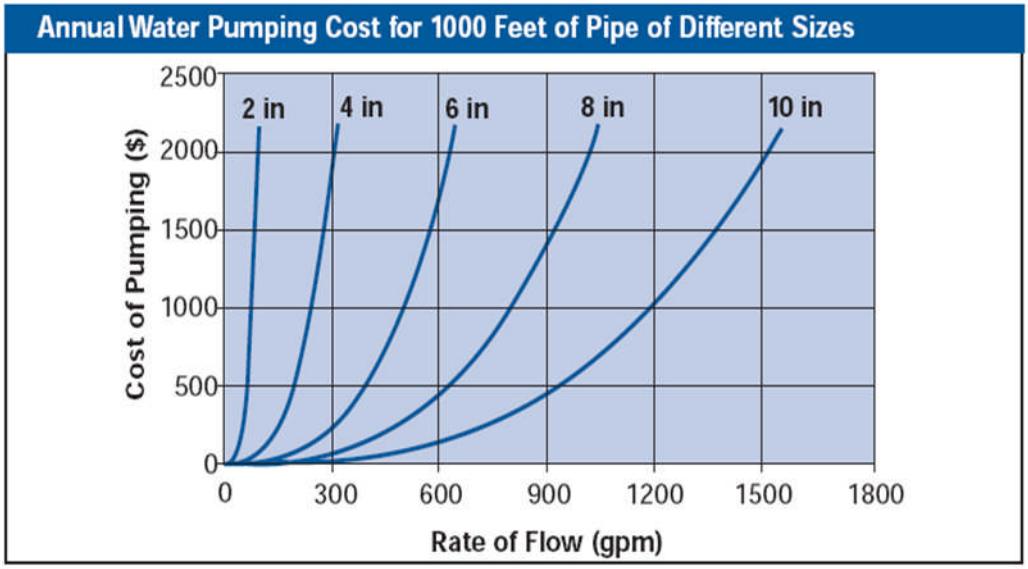
Green Piping: Cutting Energy Costs at Design Time *Part 1* Continued from Pg 8



Based on 1000 ft. for clean iron and steel pipes (schedule 40) for pumping 70°F water. Electricity rate—0.05 $/kWh and 8,760 operating hours annually. Combined pump and motor efficiency—70%.

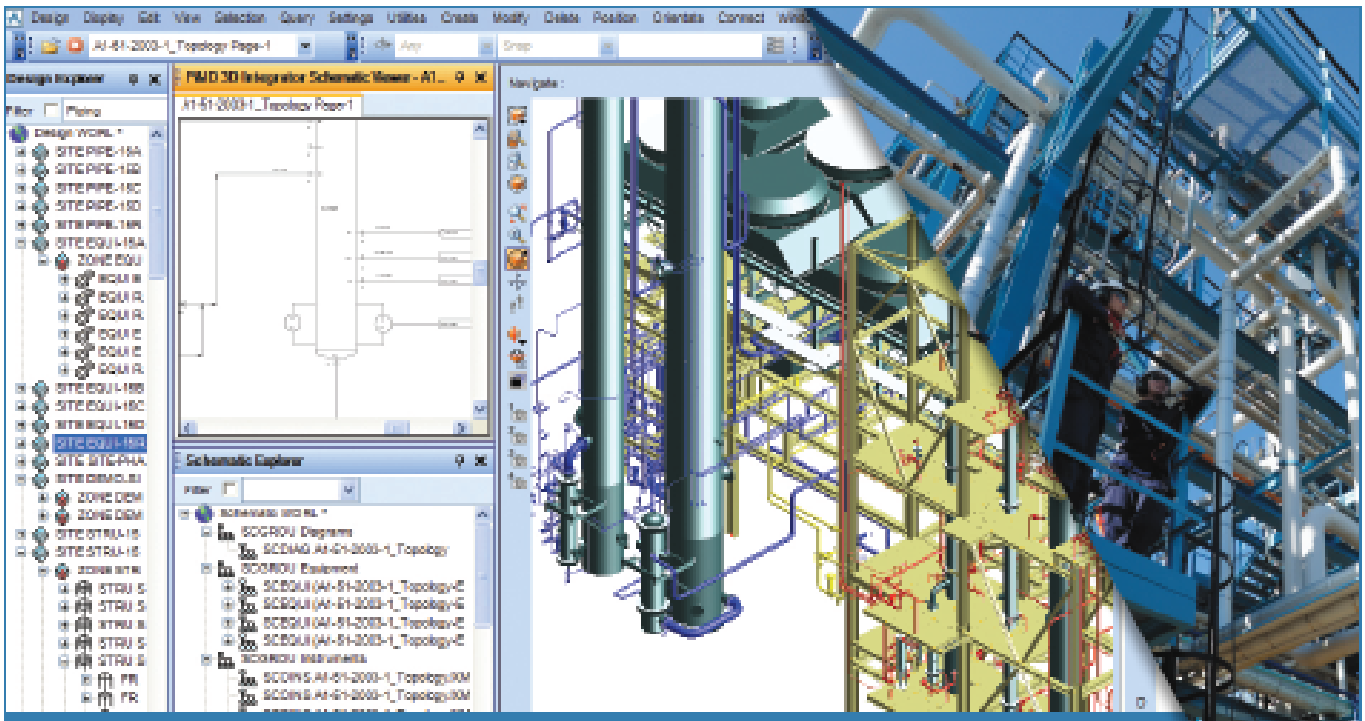
Figure 2 DOE comparison of annual pumping costs for selected pipe diameters.

Besides pipe diameter, pipe fittings and valves can affect energy consumption. Table 1 shows the pumping costs for a test application 4 inch pipe at 400 gpm (from Ray Hardee).

Table 1 Pumping Costs for Selected Fittings (Source: Ray Hardee)

Valve Type	Head Loss	Cost per 1,000 hrs of operation
Elbow LR	0.36	$4.32
Elbow SR	0.514	$6.17
Elbow RD 3	0.308	$3.70
Elbow RD 6	0.437	$5.24
Entrance rounded	0.063	$0.76
Entrance sharp edge	0.79	$9.48
Entrance inward	1.232	$14.78
Ball	.077	$0.92
Gate	.260	$2.47
Plug	.463	$5.56
Butterfly	1.157	$13.88
Globe	8.741	$104.89
Globe w/3in seat	29.93	$359.16

Ray Hardee *Piping System Fundamentals: The complete Guide to Gaining a Clear Picture of Your Piping System. Engineered Software, Inc. 4529 Intelco Loop SE, Lacey, Washington 98503, 2008, See:* http://www.eng-software.com/products/PSTraining/psfbook.aspx



AVEVA Plant

Integrated plant engineering and design technology

AVEVA PLANT

Engineering IT has come of age.

The days of inconsistent, disconnected 2D drawings, incompatible CAD formats and 'over the wall' project handover are being consigned to the history books.

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AVEVA

CONTINUAL PROGRESSION

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Green Piping: Cutting Energy Costs at Design Time

Continued from Page 10

Plug	.463	$5.56
Butterfly	1.157	$13.88
Globe	8.741	$104.89
Globe w/3in seat	29.93	$359.16

This should result in more energy efficient designs and make these designers more employable on projects.

What SPED is Planning

SPED is considering how to advance the issues related to Green Piping. This may included the gathering of a body of knowledge that piping designers can apply to their designs and a Certificate for Energy Efficient Piping Designs.

The body of knowledge would fall into four areas:

Basic Concepts of Energy, Consumption and Costs

Energy Cost Reduction in Manufacture & Fabrication

Energy Cost Reduction in Construction

Energy Cost Reduction in Operations and Maintenance

The conceptual area and typical topics are shown in Table 2.

Focus	Typical Topics
Basic Concepts of Energy, Consumption and Costs	Types of Energy. Consumption in Manufacture, Fabrication, Construction, Operations and Maintenance Calculation of Energy Costs
Energy Cost Reduction in Manufacture & Fabrication	Minimizing Welds; Avoiding Reheats, and Extra Heat Treatments; Alternative Materials and Joining; Full vs Localized Hydrotests; Multipurpose Nozzles
Energy Cost Reduction in Construction	Minimizing Field Welds; Assembly Sequencing and Lift Planning; Shut-Downs for Tie-Ins/Hot Taps; Hot work vs cold work
Energy Cost Reduction in Operations and Maintenance	Estimating energy use of existing equipment. Designing Instruments to detect improperly set valves and malfunctioning equipment. Pipe and Equipment layout to minimize energy costs of maintenance and strategies; Pipe layout to minimizing energy and material releases.

Green Piping: Cutting Energy Costs at Design Time

Continued From Page 12

SPED is close to a small contract which includes a few topics on Green Piping as part of a larger training program. We hope to develop this further over the coming months.

For more information, contact: William G. Beazley at spedexec@spedweb.com

Pace of Piping News Quickens at Annual Meeting

Continued From Page 1

And I expect the news to be good. I frequently read about all the dollars sitting on the sidelines waiting for the economy to get better and for the government to decide how to tax for their programs. Federal deficits are climbing and the dollar is dropping. Interest rates are essentially zero (is is free to borrow). Many (but not all) owner operators can finance from their balance sheets should they wish.

This much is clear: Anyone holding dollars would be smart to follow China and India and convert them to hard assets, like oil and gas reserves, plants and equipment. Those dollars on the sidelines should jump into plants, by buying them but also by building them. These forces are bigger than any single government.

And there is another trend taking shape, staff credentialing. We see increasing interest in the new PPD 100% Club. More and more, EPC piping managers tell me that clients are questioning them on their credentials to do certain kinds of work. Long leadership resumes help, along with broad based baseline skills shared by all pipers. We will be announcing the charter members of the 100% Club at the annual meeting.

SPED members catch up on the latest news on piping.

Add to that the Corporate and Academic Members who are exhibiting at the Corporate Member Showcase. They have come to talk one-on-one with YOU. You know that people will tell you things personally that they won't in print.
This is your chance to ask.

What does this mean for the piping professional? Luck is when opportunity meets preparation. You have to take a more active role in advancing your professional development if you want to stay in it. Piping is not a job: It is a profession.

I think that this is the best Annual General Business Meeting Ever and should not be missed. See you there!

Bill Beazley

SPED Calendar of Events, November 2009-March 2010

Dates & Time	Day(s)	Location	Cost	Membership
PDS I **Fall 2009 TBA**		TBA	$1195	SPED Members Only
PECOM 2009 **November 17-19, 2009** **http://www.oilonline.com/events/petroleum-exhibition-conference-of-mexico/**	T-TH	Parque Tabasco Villahermosa, Tabasco Mexico	$75	Attendee/Conference Delegate
2009 SPED Annual General Business Meeting and Corporate Member Showcase **November 17, 2009, 6-9 pm** **http://www.spedweb.com**	T	Omni Hotel Westside Houston, TX	$35 $25 $15 $10	Non-Member Member Corporate Member 10 or more Student w/ID
PPD Piper BootCamp Online **Starting November 23rd—January 29th** **Early Registration Discount**		Online	$1500 $1400	SPED Members Only Registration By November 13th
PPD Process Plant Layout Online **Starting November 23rd—January 29th** **Early Registration Discount**		Online	$1500 $1400	SPED Members Only Registration By November 13th
AVEVA Open House Event **December 16, 2009, 4-7pm** **http://www.aveva.com/products_services_events.php?id=228**	W	AVEVA Houston, TX	FREE	RSVP AVEVA Website
PPD Piper BootCamp Online **Starting December 21st—February 28th** **Early Registration Discount**		Online	$1500 $1400	SPED Members Only Registration By December 11th
PPD Process Plant Layout Online **Starting December 21st—February 28th** **Early Registration Discount**		Online	$1500 $1400	SPED Members Only Registration By December 11th
PPD Piper BootCamp Online **Starting January 18th—March 28th** **Early Registration Discount**		Online	$1500 $1400	SPED Members Only Registration By January 8th
PPD Process Plant Layout Online **Starting January 18th—March28th** **Early Registration Discount**		Online	$1500 $1400	SPED Members Only Registration By January 8th
SPAR 2010 **February 8-10, 2010** **http://www.sparllc.com/spar2010.php**	M-W	Woodlands Waterway Marriott Hotel Houston, TX	TBA	Registration via SPAR POINT Website
DIGITAL PLANT 2010 (daratechPLANT) **March 1-3, 2010** **http://www.daratechplant.com/**	M-W	Hilton Americas Houston, TX	TBA	Registration via Digital Plant Website
FIATECH Technology Conference and Showcase **March 29-31 2010** **http://fiatech.org/2010.html**		Austin, TX	TBA	Registration via FIATECH Website

SPED Training Calendar, November2009-January 2010

Dates & Time	Day(s)	Location	Cost	Membership
FIATECH Tech Tuesday Webinar Series Tuesdays, Weekly 11:00 ET http://fiatech.org/tech-connections/ techtuesday.html	T	Online	FREE	Register at info@fiatech.org
PDS I Fall 2009 TBA		TBA	$1195	SPED Members Only
AVEVA Webinar: AVEVA Net Solutions November 18, 11:30 CDT http://www.aveva.com/ products_services_events.php	W	Online	FREE	Registration Required via AVEVA PPD Certification PDU Acceptance
Piping Technologies & Products: Components for Pipe Support, Deflection and Restraint November 19, 9am & 2pm CST www.pipingtech.com	TH	Online	FREE	Registration Required via PT&P PPD Certification PDU Acceptance
PPD Piper BootCamp Online Starting November 23rd—January 29th Early Registration Discount		Online	$1500 $1400	SPED Members Only Registration By November 13th
PPD Process Plant Layout Online Starting November 23rd—January 29th Early Registration Discount		Online	$1500 $1400	SPED Members Only Registration By November 13th
AVEVA Webinar: AVEVA Instrumentation 12.0 December 9, 11:30 CDT http://www.aveva.com/ products_services_events.php	W	Online	FREE	Registration Required via AVEVA PPD Certification PDU Acceptance
PPD Piper BootCamp Online Starting December 21st—February 28th Early Registration Discount		Online	$1500 $1400	SPED Members Only Registration By December 11th
PPD Process Plant Layout Online Starting December 21st—February 28th Early Registration Discount		Online	$1500 $1400	SPED Members Only Registration By December 11th
PPD Piper BootCamp Online Starting January 18th—March 28th Early Registration Discount		Online	$1500 $1400	SPED Members Only Registration By January 8th
PPD Process Plant Layout Online Starting January 18th—March28th Early Registration Discount		Online	$1500 $1400	SPED Members Only Registration By January 8th