



Center of Excellence for Process and Control Technology



Process Tech-Ed News



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A new Western States process careers consortium is in the works, expanding efforts to include a more "western states" focus, reaching out to additional industries outside of oil and gas to food and beverage processing, pulp/paper, water treatment and others who will need to replace their aging workforces, and the inclusion of additional disciplines in the effort regarding maintenance as well as operations.

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Bellingham Technical College's
Center of Excellence for Process and Control Technology
One of 12 Washington State Board of Community and Technical College



PILOT PLANT CONSTRUCTION SCHEDULED FOR JUNE 2008

Eve Magyar, Capital Project Coordinator

The Center of Excellence and Bellingham Technical College are entering the preliminary design phase for the new pilot plant being built in partnership with the four local refineries: BP, Shell/Mobil, Conoco-Phillips, and Tesoro. The plant is designed to process a 50/50 mixture of antifreeze and water, which, once processed will be separated and used again. In order to control the process and achieve the required separation of two liquids the pilot plant will consist of a number of instruments valves, pumps and control equipment.

The plant will have a small control room to house the computerized controls used to teach students how the flow, level, temperature and pressure at various points are controlled by use of automated instruments and signals from the various equipment and pipes. This allows students to train in a real life setting without the safety and security issues related to training in a working refinery. The facility may be used by processors to train existing employees, and will be available for other colleges to use for training purposes.



Pilot plant at Brazosport Community College in Texas, similar to plant being designed for BTC

To be located near the Northwest Center for Process Manufacturing, the project will be submitted for permitting in March of 2008 with construction scheduled to begin in June. The process systems are being designed by Anvil Corporation, and the site and facility will be designed by HKP Architects.



From BTC President Tom Eckert

We are extremely proud that Bellingham Technical College (BTC) is home to the Center of Excellence for Process and Control Technology for the state of Washington, and we take that responsibility very seriously. All indications point to an ever-increasing shortage of skilled workers as the baby-boom generation retires, and those who use technical professionals in process and control technology are experiencing this reality right now.

The Center stands ready to address this issue with high quality training through BTC and by working with other technical and community college programs throughout the state.

The training at BTC is exceptional for the quality of its faculty and the state-of-the-art training equipment. An example is the plan to build a pilot plant on campus starting next spring. This outdoor lab, the first facility of its kind on the west coast, will provide students with realistic, hands-on training in the process operation, instrumentation, and electronics skills used in process manufacturing.

The Center of Excellence is exactly that. It is excellent training provided by excellent instructors teaching with the best training technology and equipment available. If you haven't had the opportunity to come and visit our Center and meet our director, Kate Clark, plan to do so in the near future.

IICTA and Center of Excellence Create a Regional Network

Tony Kuphaldt, Kate Clark, Johnny Payne (www.iicta.org)



Satpal Sidhu talking about the possibilities

On November 15 and 16, the Center of Excellence and BTC hosted representatives from the IICTA (the Industrial Instrumentation and Controls Technology Alliance) as they held their fall quarter steering committee meeting in Bellingham. This is the first time the national organization has convened in Bellingham, and the first time representatives have reviewed the instrumentation program and toured the Northwest Center for Process Manufacturing at Bellingham Technical College. A great many ideas were shared between educators in attendance, including teaching techniques and process simulator plans.

The mission of the IICTA is to ensure industries are adequately supplied with highly qualified instrument and control technicians. One way to achieve this goal is to set educational standards for Instrumentation programs in colleges nationwide, including standardized (minimum) curricula and skills standards for a skilled workforce for processing industries.

In addition to IICTA steering committee business, the meeting was a forum for discussing the possible formation of a west-coast regional network of industry and education to help meet the growing demand for instrument technicians. In attendance were process industry representatives, state board personnel, educational partners and industry vendors, including members of the Northwest Process Technology Alliance, the Alaska Process Industries Careers Consortium, the California Chemical and Process Technology Alliance, and the Rockies Alliance for Process Technology from Colorado. Seven students from BTC's Instrumentation and Control Technology program also actively participated in the meeting, and they not only found the experience enlightening, they also made some great connections with potential employers as well.

At the closure of the meeting, it had been agreed that a sub-committee will meet in January to discuss elements of the network, including partnership with the IICTA. They will discuss the inclusion of additional disciplines in the effort regarding maintenance as well as operations, as well as expanding the current efforts in the Northwest to include a more "western states" focus, reaching out to additional industries outside of oil and gas to food and beverage processing, pulp/paper, power generation, and wastewater treatment, all of which will need to replace aging workforces.

Center of Excellence Director, Kate Clark, will take the lead on coordinating the next session in January. This session will bring together selected individuals from the alliances represented, as well as the Center of Excellence for Energy at Centralia CC, and representatives from Lower Columbia CC, and from Perry Institute to guide the creation of a Western State Process Careers Network. The group will develop solutions to meet the critical and growing workforce needs of the western states region's process manufacturers.



BTC Instructor Tony Kuphaldt along with several instrumentation students having dinner with IICTA members at Anthony's



Second year instrumentation student, Ken Brown, shown here in the BTC lab, participated in the November meeting

FACT: Instrumentation technicians with a 2 year AAS degree are in extremely high demand and can command a salary close to \$30/ hr. upon graduation.

Instrumentation technologists, technicians and mechanics specialize in troubleshooting and repairing instruments and instrumentation systems. Installation, on the other hand, is normally performed by industrial electricians. The trade is so intertwined with electricians, pipefitters, power engineers, and engineering companies, that one can find him/herself in extremely diverse working situations.

- Wikipedia: Instrumentation Technologists and Mechanics

Biodiesel Education

Tom Carleson, BTC Instructor, Process Technology



Making biodiesel in the laboratory
(August, 2006 workshop)



Small biodiesel generation unit with methanol
stripper and wash tanks

It all started with a 2005 Bio 49 Project grant from the EPA and Washington Technology Center which was awarded to Bellingham Technical College and British Columbia Institute of Technology. This grant and matching funds obtained were used to purchase two small 30 gallon biodiesel units for each of the schools.

The biodiesel unit provides heating of the vegetable oil (*we use canola and spent fryer grease to make biodiesel.*), mixing and injection of sodium hydroxide and methanol, settling, high temperature stripping of methanol from the produced biodiesel, and water washing of the biodiesel. Several hundred gallons of biodiesel, meeting ASTM specifications, were prepared using this unit.

As a provision of the grant, BTC students used the small biodiesel unit to make biodiesel which was blended with regular diesel for use in Puget Sound Energy trucks. The Bio 49 Project and operation of the small biodiesel unit stirred up enough interest for BTC to conduct three biodiesel workshops in 2006 and 2007.

Two of these were open to the general public and one was held in conjunction with the BTC 2007 Summer Institute for high school teachers. The workshops covered the history of biodiesel, its uses in diesel engines, making biodiesel, and the analysis of biodiesel. People from Oregon, Idaho and Washington attended the workshops. Participants produced real biodiesel in the laboratory and in the biodiesel units. Two more workshops are planned for 2008. For information, contact Tom Carleson at 360-752-8391 or tcarleson@btc.ctc.edu.

Currently the highest wage jobs for process manufacturing technical professionals are in the refineries; however, the technical skills learned in the programs are applicable to a wide variety of processing and energy industries, including those involving alternative energy.

Washington Senator Maria Cantwell
kicking off the Bio 49 Project



For some interesting perspectives on the use of alternative energy, check these links:

Energy crisis cannot be solved by renewables, oil chiefs say

http://business.timesonline.co.uk/tol/business/industry_sectors/natural_resources/article1980407.ece

A Different Era for the Alternative Energy Business

<http://energybulletin.net/395.html>

Berkeley-BP Clean Energy Deal is Officially On

http://blog.seattletimes.nwsourc.com/techtracks/archives/2007/11/bpberkeley_clean_energy_deal_is_officially_on.html

Ancient plant has potential as modern source of biofuel

<http://www.bellinghamherald.com/102/story/90180.html>

Center of Excellence, Director's Notes

I am pleased with the outcome of the November IICTA meeting, which involved not just IICTA members but many others who want to be involved in a Western States regional process careers effort. This group will bring together educators, industry, labor, vendors and government to expand industry involvement beyond refineries to food processors, power generation, pulp and paper, and water treatment facilities. The Network will also develop and share uniform skill standards for curriculum for all relevant programs to meet the needs of these industries throughout the region.

One of the Center goals this year is to develop marketing strategies that more effectively reach potential student populations—from high school students to older workers, as well as displaced workers and non-English speaking minorities. With the number of current jobs (and the even greater need in the next few years) in the process manufacturing industries, the Center is here to support workforce development for processors in our state. These jobs pay extremely well, and often require just a two year AAS degree.

The Pilot Plant continues to take shape, and our goal is that by the end of 2008 it is built and functioning to provide an outstanding training tool for the BTC students, processing industries, and related educators across the state. The plant would not be possible without the support of the four area refineries: BP Cherry Point, Tesoro, Shell, and Conoco-Phillips.

If you are a process manufacturer in need of a local training program for your workforce, if you are an educator or administrator and wish to develop process technology curriculum, or if you or someone you know would like to learn more about the job opportunities in the process manufacturing industries, contact the Center at 360-752-8495 or email me at kclark@btc.ctc.edu.

Upcoming Events

NW Process Technology Alliance "Train the Trainer" Conference: BTC, April 30-May 3, 2008

Don't miss this opportunity to build your personal network with other technical trainers, attend sessions to learn about training issues affecting you and your company, and preview the newest products and services from industry suppliers. www.nwpta.org

Process Manufacturing & Energy Careers Workshop for High School Teachers & Counselors: BTC, May 6, 2008

Teachers and counselors are invited to learn more about process and control technology high-wage careers, meet the instructors, and participate in hands-on activities in the labs at the new Technical Center for Process Manufacturing. Contact kclark@btc.ctc.edu.

Critical Issues and Best Practices: Mark your calendars—the Center for the Advancement of Process Technology will host its annual conference next October 15, 16, and 17 in Houston. www.captech.org

Industry Notes



After 37 years of oil industry experience, nearly all of it spent working at BP's Cherry Point Refinery, Jeff McSorley is calling it a day...sort of. Starting in 1971, as an Operating Technician, McSorley worked up to Shift Foreman followed by promotion to supervisor, and for the last 16 years has been BP Cherry Point's Training Supervisor. Besides acting as Chair for numerous petroleum industry committees, including 6 years as Chairman of the American Petroleum Institute's (API) National Training & Development Advisory Committee, and chairing many other training related advisory committees, McSorley taught classes as an adjunct instructor at Bellingham Technical College. He has been the driving force leading the creation of the Process Technology programs at the College, and received the Governor's Award for his efforts. He has earned his retirement! However, McSorley has no intention of sitting still. He is planning on starting his own consulting firm, and we anticipate and hope he will continue to be involved in the process manufacturing careers and training activities in our area.

LITTLE KNOWN FACT: Jeff attended Cornish School of Allied Arts in the 1960s, majoring in Music Education!

Contact Jeff McSorley at Precision Performance Consulting, 360-778-1552, or jeff@precisionperformanceconsulting.com for assistance with operator training, process troubleshooting, team building for operating crews, boiler operations, simulator "train-the-trainer" and training development and leadership development.

Parting Shot ...

BTC Dean Satpal Sidhu, Chuck Beck of Colorado's Red Rock Community College, and BTC Process Technology Instructor Tom Carleson, having entirely too much fun at a "working dinner", during the Center for the Advancement of Process Technology (CAPT) convention in Houston this October.

