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*Richland ♦ Kennewick ♦ Pasco ♦ West Richland ♦ Franklin County ♦ Benton County ♦ Port of Benton*

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***Background*** - For more than 40 years, plutonium for the nation's defense was produced at the U.S. Department of Energy's Hanford Site in southeastern Washington State near Richland. The weapons program generated a significant amount of radioactive and hazardous waste. Today the primary focus at the 586-square-mile Hanford Site is to safely store, treat and dispose of Hanford's legacy wastes and to leave the Site in a safe condition that preserves options for future uses. In 1999 the Secretary of Energy established the Office of River Protection at Hanford to specifically focus on storage, retrieval, treatment, immobilization and disposal of 53 million gallons of hazardous chemical and radioactive wastes now held in 177 underground waste tanks.

**Richland, WA:** Today the U.S. Department of Energy (USDOE) and Bechtel workers are designing and constructing the largest and most complex waste treatment plant in the nation. The Vitrification Plant or "Vit Plant" as its known will turn the hazardous wastes held in underground tanks into glass. When it becomes operational in 2019 the Vit Plant will provide 800-1000 long-term, high-paying jobs. That means students as young as fifth graders today may be part of the plant's future workforce. But there is growing concern that qualified workers will be hard to find.

Our world has grown more technologically complex over the last 20 years while fewer and fewer students are choosing careers in math, science, engineering or technology. Near the Vit Plant at Hanford's tank farms, workers are developing cutting edge technologies and innovative methods to retrieve and treat the tank wastes. People with math and science skills are needed today and in the future but the job forecast indicates decreasing numbers of individuals with training in these skills.

As the workforce at Hanford ages and retires there are growing shortages of engineers, welders, electricians and many other skilled professions. Government agencies and businesses in the region and across Washington State are also challenged to fill open positions requiring technical training and degrees. And as world economies develop and grow, there is increasingly stiff competition with many other nations to fill technical jobs.

Government, industry and education leaders recently gathered in Richland to discuss the growing shortage of qualified workers and the need to inform students from elementary school to college about how they can start preparing themselves for satisfying and high-paying careers in the future right here at home.

Shirley Olinger, Manager of the USDOE Office of River Protection, said, "We have an aging workforce at a time when there is high demand for employees with technical degrees. There are not enough students entering math and science programs in the U.S. and global statistics indicate that we are falling behind other nations."

Olinger concluded, "We are going to have to find ways to inform students of future exciting job opportunities and encourage them to enter these academic programs now."

Bechtel employs 40,000 people in 50 countries. Suzanne Heaston, Bechtel's Vit Plant Public Affairs Manager says, "With the growing disparity between the demand for our services and the dwindling supply of skilled workers, there is a sense of urgency to train our future workforce. To help do that Bechtel and DOE partner with the community and schools in a variety of workshops and community events such as Washington State University's 'Imagine Tomorrow' competition, science fairs and Columbia Basin College's Engineering Day. We also work with CBC on their Industry Skills Panel to determine what skills will be needed in the future."

Suzanne Dahl, a hydrogeologist with the Washington State Department of Ecology, defined the core skills needed by Ecology as math, science and the ability to communicate clearly very complex technical and legal issues. "People need math and science," says Dahl, "just to excel in today's life." She also had a message for parents. "If you have a child who struggles in math and science and you excel, you can help him or her. If not, don't pass on your phobias to your children ... just look for people in your community who can help them."

"There's nothing cool about welding," says Mike Martinez, Welding Engineering for Bechtel's Vit Plant. "Welding is a hot job! The physical welding itself is truly art and the procedural codes and materials side is the science. The combination makes for an exciting and well-paying career at any level and the opportunities are endless." Martinez said, "As you prepare for a career as a welder or welding engineer, math and science are priceless ... without math and science and the ability to learn, you're not going to get very far."

Dennis Williamson is Training Coordinator at the Electrical Training Center in Kennewick for the Electrician's Apprenticeship and Training Program. The parent organizations are the International Brotherhood of Electrical Workers and the National Electrical Contractors Association. Williamson says, "As a journeyman electrician, career opportunities are endless and well paying ... electrical workers are in the top 10% wage earners for college graduates. With your certificate and license, you can take your skills anywhere and practice your trade. But Williamson stresses that the decision to become an electrician shouldn't be just an alternative but a choice by someone who wants to be more than just average. "Competition is high." Williamson says, "Math skills were *important* to electrical workers a generation ago ... today they're *critical!*"

Richland School Board President, Rick Jansons, says "What I want school districts to do is to present opportunities to kids to show them all the different things that are available to them and have people come in and tell them how fun, how interesting different careers are. When kids hear the word 'engineer' they may have an idea that it's boring, that you do the same things all the time and wear a pocket protector. That's not true ... engineering is a science and an art; you start with a solid science and math background and you do really cool things." Jansons added, "Another thing I'd like to get across to kids is that not every job requires a four-year degree." He stressed that trades offer very satisfying, high-paying jobs, and military service offers opportunities for great careers as well.

Jean Lane, Superintendent of Richland Schools, is excited about the wealth of opportunities available now to help students master core subjects ... math, science, communication and an understanding of basic technology. She says, "Math is not just for the few elite. Today we have everything from beginning

math classes to support classes that will help you get where you're going. When you know you are going to have to struggle to master the class, don't give up," she urges. "The tenacity that you develop really empowers you to own that knowledge so you can take on any career you want ... these are life skills you're gaining!"

Mary Kaye Hergert, a career counselor for the Richland School District, hopes that kids take full advantage of the Career Centers at Richland and Hanford High Schools where they can talk one-on-one with people in a variety of careers, take tests to help them identify their interests and passions, talk with recruiters from colleges and technical schools and visit with industry and unions about job shadowing, internships and apprenticeships. She says, "In the Richland schools we believe that career planning should be an integrated part of course work. If students understand the **purpose** of reading, writing, math and science, they can connect that with their next step in life after high school."

Hergert says her worst moment is when she sometimes meets with parents and their senior student to talk about that student's future where opportunities have been lost. "It's sad," she said, "when doors for a four-year college are temporarily closed and the student does not meet the requirements for an apprenticeship program. Then when the student takes and fails the placement test for community college, parents find themselves looking at paying tuition for their student to retake high school. The biggest mistake is choosing classes perceived as easy." "Don't squander your core education," she urges, "take care of your science, math, reading and technical skills."

Scott Hudson, WSU-Tri-Cities Academic Director for Electrical Engineering, says, "Students who are interested in technology and math have a chance to solve very important issues that people in our world

care about ... such as enough food, enough fuel." Hudson says that "job opportunities abound – different career paths are available in engineering such as managing your own company and government programs to assist third world countries. You can match your personality to the work. And if you think that engineering is all about sitting around and doing math, think again," he says. Even during your training engineering is all about applying your knowledge building real systems to solve real problems."

Derek Brandes, Dean of Career and Technical Education for Columbia Basin College, estimates that 40% of CBC's arriving students are undecided about a career and another 40% change their minds as they go forward. "That's why," he says, "our counseling staff are certified career coaches who can help students get a clear vision of the career path they want and how to get there because people with a clear vision stay in college."

Brandes points out that students can get an associates welding certification at CBC and then go on to apprenticeship with a higher status and rate of pay than if they go into the apprenticeship out of high school. "Also, he says, "starting in 2009 students in a two-year technical program can add two more years of academic classes and get their four-year Applied Business Degree at CBC." Brandes stresses that all CBC technical programs have advisory boards from industry and government who participate in making sure that students are employable and needs are being met for required skills in the workforce.

There is one piece of advice to students that industry leaders and educators agree on. Do the math and your career choices will be unlimited.

***To find out how you can become more involved in this important regional issue or to have a Hanford Communities speaker talk to your organization, contact the Hanford Communities at (509) 942-7348.***