

Texas' Efforts to Increase the Nuclear Technology Workforce -11407

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ABSTRACT

The number of nuclear-related programs of higher learning has decreased in the last decade or so, with many programs either closing or being reassigned. This means fewer people going through these programs, which means fewer people in the workforce with these skills. The need for highly-skilled people is increasing and will continue to do so, creating a gap in the supply and demand. There are several Texas colleges that have formed a consortium with nuclear energy partners to bring students into the nuclear profession. This nationwide program has resulted in about 40 such partnerships between industry and the local schools across the country [1]. The Nuclear Power Institute (NPI), located at Texas A&M University, has received a grant from the Texas Workforce Commission, and Brazosport College has received a grant from the U.S. Department of Labor for these and other schools to expand and improve their programs dealing with nuclear technologies. The latter has distributed the funds among five schools. These grants were for equipment, updating courses, and preparing new curricula that conforms to the standardized curriculum that was developed by the Institute for Nuclear Power Operations (INPO). Texas State Technical College (TSTC) Waco has five departments participating in the grant. With the combined efforts of all the departments and all the schools, Texas hopes to be able to provide the skilled technicians that the industry needs in the future.

INTRODUCTION

It is well known that the number of nuclear workers in the next three to five years, as of now, will be less than the required need [2]. Between the retirement of current employees, the need for new workers at yet to be built stations, and workers needed to construct these power stations, it has been estimated that about 50,000 new nuclear power plant workers across the U.S. will be needed by 2020 that is if only half of the new plants projected are built [3]. This does not include the personnel needed for other nuclear technology applications, such as medical, industrial, regulatory, national laboratories, and research. These other applications will add the need for many thousands of nuclear-related skilled personnel as well. There are eight possible new power plants planned for Texas in the next ten years; four are docketed by the Nuclear Regulatory Commission (NRC), and there needs to be people to build, maintain, and operate them. Of the four docketed plants, two are requested by South Texas Plant Nuclear Operating Company and two by Luminant Generating Company LLC [4]. The other four plants that are planned will be for Exelon and Amarillo Power.

GRANTS

Texas State Technical College, along with Brazosport College, Victoria College, and Wharton Junior College are participating in U.S. Department of Labor Community-Based Job Training

grant. In addition, a Texas Workforce Commission grant to update and standardize curriculums of these college programs in nuclear technologies has been awarded to the Nuclear Power Institute (NPI) at Texas A&M University. These curricula updates are being done in order for the graduates from these colleges to have the necessary skills required by the nuclear industry. This cooperative effort was started in 2008 by NPI, which is led by the Texas Engineering Experiment Station (TEES), which is based at Texas A&M University. NPI is bringing together two and four year schools, the nuclear power industry, and state agencies to provide training for those who wish to enter the nuclear power workforce. NPI not only participates at the college level but has an extensive high school outreach and recruiting effort in order to get students interested in the nuclear field early. In the last year they have made about 27 trips to high school science classes, college nights, career days, and Conference for the Advancement of Science Teaching (CAST)[5], involving hundreds of students and teachers. Whereas most two year colleges participating in this nuclear resurrection have one or two departments involved, TSTC has five programs that are included in the nuclear update, including; Instrumentation/Computerized Controls & Robotics (ICR), Electrical Power & Control Technology (EPC), Industrial Systems & Engineering Technology (ISE), Environmental Health & Safety/Radiation Protection Technology (EHS/RP), and Welding Technology (WLT). ICR and EPC are focused on the transition from analog to digital instrumentation in new nuclear plants. ISE are having people work on the maintenance of the systems that are used in the nuclear plant. EHS/RP is focused on preparing the radiation protection technicians for work at a power plant, whereas the WLT department is training their students to be welding inspectors for nuclear applications.

FUTURE

Students desiring to work in the nuclear power industry will be given an opportunity to take courses which prepare them to meet Institute of Nuclear Power Operations (INPO) academic standards for associate degrees. This academic standard, Guide for Uniform Curriculum for Nuclear Power Plant Technician, Maintenance, and Nonlicensed Operations Personnel Associate Degree programs, was put together by several power plants, colleges, and the Nuclear Energy Institute (NEI) [6]. Along with classes, these students will be participating in internships or cooperative trainings (Co-Ops) at one of the local nuclear power stations, giving them practical working experience. Even if the student wants to enter another nuclear related field the improved programs at these schools will give the student the knowledge and skills necessary for them to excel in their chosen area. In addition, several of these departments are considering offering a special certificate option for a one-year program through a Texas Workforce Commission initiative. In these programs people that have some experience in the field can come in and within one year be prepared to go to work in the nuclear power industry as specialist in their chosen area. Future opportunities with Texas A&M University, NPI, and the local power stations are being investigated for expanding their cooperative efforts. With new scholarships available for two or four year colleges, updated curriculums, and cooperation's between academic and industry, TSTC and several other institutions in Texas are doing their part in securing the future nuclear workforce.

REFERENCES

1. NEI Press release May 1, 2009
2. NEI *Nuclear Energy Insight*, October 2007
3. Marvin Fertel, in an address to the Committee on Energy and Natural Resources- U.S. Senate, March, 2009
4. From NRC website www.nrc.gov/reactors/new-reactors.col.html
5. Personal Correspondence with NPI, Nov. 2009
6. “Guide for Uniform Curriculum for Nuclear Power Plant Technicians, and Nonlicensed Operations Personnel Associates Degree Programs”, Institute for Nuclear Power Operations, 2008