

Energy Generation Operations Program Fact Sheet

DEGREE: Associate of Applied Science

LENGTH OF PROGRAM: 18 months

PROGRAM LOCATION: Milford and online classes

STARTING QUARTERS: January/July (Classes begin Jan. 2011)

PROGRAM DESCRIPTION: Plant operators must understand and oversee all aspects of an energy-generating facility. Generally, a plant operator oversees the operation of a power or liquid fuel plant, monitoring key parameters, troubleshooting and solving problems while working with skilled trades to keep the plants running at optimum efficiency. Students will study a variety of related topics that are necessary to gain a broad understanding of the many systems in a typical electrical or liquid fuel generating facility. The first five quarters consist of general education and common core courses that are required to work in most types of energy-generating facilities. In the final sixth quarter, a focus quarter, students will only take classes relevant to their choice of fuel source, i.e. biofuels, nuclear, coal, wind, etc. This program will be certified by various oversight organizations so that graduates can take their degree anywhere in the nation where jobs are available in their chosen focus area.

ADDITIONAL FACTS

GENERAL ENERGY INFORMATION: The U.S. Department of Energy predicts that U.S. electricity needs will increase 28 percent by 2035. In order to fulfill those needs, many new generating facilities will need to be built and operated in the coming decades. Currently, most of our electrical needs are supplied by coal and nuclear power.

Most of our transportation fuel comes from oil. As we move toward a more sustainable energy environment, more electricity is likely to be needed to run our growing hybrid and plug-in electric mobile fleet, as well as more liquid fuels to replace our dependence on traditional energy sources. Power plants and liquid fuel plants will be called upon to increase capacity to meet our growing demand. In addition, the aging workforce will need to be replaced in this area of expertise. Many of these jobs can never be outsourced offshore because the workers must be located on-site, and the power-generating plants must be located near the demand for the energy they produce.

The increasing need for energy and the changes in demographics combine to create an increased demand for qualified plant operators. The average national income for all occupations, as reported by the Department of Labor, is about \$43,460 per year. Average Nebraska income is \$36,970 per year.

Biofuels: Nebraska ranks second nationally in the production of ethanol, with more than 1.8 billion gallons per year. This important resource reduces our dependence on foreign oil while reducing greenhouse-gas emissions by 12-19 percent. Ethanol plants are operating at their maximum capacity. As demand increases for this renewable liquid fuel, new plants and, therefore, more jobs, will be created to support the growing biofuels infrastructure. With average compensation for Ethanol Plant Operators at more than \$67,500 per year, this operator position pays well over the average national income of \$43,460 per year.

Fossil Fuels: Most of the nation's electricity is generated by coal-fired power plants. In addition, many domestic electrical generating plants utilize natural gas and other fossil fuels. According to Nebraska Public Power District, more than 80 of its plant operators will be eligible for retirement by 2016. Graduates from this program with a focus in fossil fuels will be qualified to work as operators in any fossil-fueled power plant. Fossil-fueled electricity generation is not going to go away any time soon. The industry will continue to need operators in these plants for the foreseeable future. Average compensation for operators in these plants in Nebraska is almost \$63,000 per year.

Nuclear: Graduates from this program who choose the Nuclear Focus will be qualified to work in any nuclear power plant as an entry-level non-licensed plant operator. Nuclear energy is the only electricity source that can generate electricity 24/7 reliably, efficiently and with no greenhouse-gas emissions. Nationwide there are 104 nuclear plants operating, with more being built starting in 2010. Each nuclear power plant requires a large staff of qualified operators, in addition to many other trades. Nuclear Plant Operators earn average compensation of nearly \$71,000 per year.

Wind: The Wind Technology Focus prepares graduates for entry-level positions as Wind Turbine Technicians in a commercial wind turbine farm or installation and maintenance of small wind turbines for residences and small businesses. The large-scale wind turbine business in Nebraska is set to expand rapidly due to recently-passed legislation, opening the doors for private developers to build in Nebraska, the fourth-highest wind potential state in the nation. Nebraska ranks 22nd in the nation in terms of installed wind developments. Nebraska has enormous potential for growth in this industry. Average compensation for Wind Turbine Technicians nationally is about \$47,800 per year.