

# **New Program Proposal Board of Trustees Meeting Tuesday, January 23, 2007**

## **Program Description & Information**

### **Program Objectives**

The Natural Gas Transmission and Distribution Certificate/Degree program will provide training to develop a highly skilled, competent workforce to meet the demands of the natural gas industry.

This certificate/degree will provide students with basic knowledge of the gas and pipeline industry and prepare them to perform identified job tasks in order to comply with state and federal regulations and industry standards.

### **Relationship to Institution's Mission**

*The mission of Barton County Community College is to deliver educational opportunities that improve the lives of students, meet the workforce needs of the region and strengthen its communities.*

The Natural Gas Transmission and Distribution Certificate/Degree meets the institution's mission to improve the lives of students by providing training and education to obtain employment, increase earning ability, and qualify for promotion.

It meets the workforce needs of the region by responding directly to an industry request to develop a well trained, qualified and committed employee pool to address a projected 50% retirement rate; and to provide for year round training that will meet state and federal mandates for the natural gas industry.

This certificate and degree program strengthens communities through its service to the natural gas industry and the impact of this industries' continued ability to provide for the safe and efficient transmission and distribution of natural gas to the thousands of individuals, businesses, agencies and organizations who depend upon this resource.

### **Program Description and Admission & Graduation Requirements**

The 16-credit Natural Gas Transmission and Distribution certificate will prepare students for entry level jobs in the natural gas industry.

Students obtaining a 33-credit certificate will be prepared for more specialized, higher level employment within the natural gas industry.

The two-year (64 Credit) Natural Gas Transmission and Distribution Degree will allow students to earn an Associate's Degree in Applied Science, enhancing their earning potential and opportunity for promotion within the industry. Graduates may choose to work for utility companies, transmission and distribution companies, municipalities and other related agencies.

A fulltime student who has graduated from high school and requires no remedial coursework can complete the Associate Degree Program in four semesters, which is normally two years. The certificates require two semesters, which can be completed in one year, plus any remedial courses, if needed.

## Coursework (Pre-requisites, Required and Elective)

### 16 Credit Certificate

Properties of Natural Gas	1
*Introduction to Natural Gas Techniques/Technologies	3
Basic Electricity	3
Operations & Maintenance In the Natural Gas Industry	3
*DOT Regulations	3
*Technical Math	3

### 33 Credit Certificate (Classes above Plus the following)

*Intermediate Natural Gas Techniques/Technologies	3
Trenching and Excavation	3
*OSHA General Industry Regulations	3
*OSHA Construction	3
*Technical Communication	3
Introduction to Mapping/Surveying Applications	2

### 64 Credit Degree Plan

33 Credit Certificate Program Plus:

\*11 Additional General Education Credits

17 General education credits are required to complete this degree. Six of the 17 credits are completed in the certificate programs. Required general education requirements are Environmental Science with Lab (5 credits), Computer Concepts (3 credits), and Interpersonal Communication (3 credits).

### Major Electives (20 Credits)

*First Aid and Emergency Care	3
*Welding I	3
*Welding II	3
*Command Spanish	2
*Basic Corrosion Field Technician I	4
*Intermediate Corrosion Field Tech Level II	4
*Supervision and Personnel Administration	3
*Intro to Water/Wastewater	3
*Brownfields	3
*Renewable Energy Sources	3
*Basic Corrosion (NACE seminar)	1
*Any Hazmat Course	various

\* = Course listed on Master Course lists

**(Courses with Prerequisites)**

PETR 1501 Intermediate Natural Gas Distribution and Transmission Prerequisite: PETR 1500 Introduction to Natural Gas Distribution and Transmission OR recommendation of employer or instructor.

MATH 1806 Technical Math: Prerequisite MATH 1809 Basic Applied Mathematics with a grade of C or better, or MATH 1811 Preparatory Mathematics with a grade of C or better, or ASSET Numerical Skills Score of at least 40, or ACT Math Score of at least 17, or SAT Mathematics score of at least 400, or ACCUPLACER Arithmetic Skills Score of at least 70.

PETR 1461 Intermediate Field Technician Level II: Prerequisite PETR 1460 Basic Field Technician Level I

**Program Specialties**

In addition to the required certificate and degree program training, industry specific training for identified Operator Qualified Skills as defined by federal mandate will be provided and may count towards elective credit coursework. This includes: Corrosion, Cathodic Protection, Rectifier Training, Measurement and Odorization, Line Location, Coatings, Leak Survey, Short locating, Cased Crossing. Additional training will be developed and offered to meet industry demands. Students may focus on specialized areas of training to qualify for company specific 'Pay for Skill' requirements as outlined by their employer (e.g. Corrosion Technician, Operator/Maintenance or Field Technician)

**Degree Plan**

Refer to previous Coursework Section.

**Competency Profile**

Competency Profiles for this certificate/degree program are in process. They will be completed in order to meet the KBOR requirements for new programs.

**Curriculum Integration Plan**

Six area high schools have indicated an interest in the certificate and degree programs. They are Chase, Ellinwood, Ellsworth, Otis, Pawnee Heights and Victoria. Meetings are being held this spring to identify the student potential for concurrent credit and GAP programming.

**Specialized Accreditation**

There is not an accrediting agency for this training. The Kansas Corporation Commission Office of Pipeline Safety is on the steering committee and assists in establishing curriculum to meet industry, state and federal regulations.

Students MAY choose to obtain certification from the National Association of Corrosion Engineers (NACE) or other Operator Qualified verifying agencies such as Veriforce.

**Faculty Requirements****Qualifications and/or Certifications**

Faculty members teaching the program's core curriculum are required to have industry specific experience and/or certification. In addition, faculty may also have Master's and/or Bachelor degree coursework specific to their teaching discipline. Faculty teaching General Education and elective course work must meet the requirements of the Higher Learning Commission.

## **Required Third-Party Credentialing**

Faculty with appropriate NACE and/or Operator Qualified credentials may be considered for instruction of the core curriculum.

## **Program Demand**

### **Employer Demand/Anticipated Openings/ Labor Market Needs/Future Employment Projections**

The energy industry has identified an existing skilled labor shortage that threatens to interfere with the safe and efficient transmission and distribution of natural gas. In addition to a looming lack of skilled employees, newly implemented state and federal regulations and advances in technology require retraining of the incumbent workforce.

Kansas' natural gas pipeline includes more than 2600 miles of transmission lines and 21,000 miles of main distribution lines for 120 natural gas companies that provide service to approximately 932,000 gas customers. The current workforce, charged with maintaining the integrity of these lines, includes approximately 2486 workers, of which approximately 50% are expected to retire in the next five years.

In addition to Kansas need, the companies represented in the steering committee for the Midwest Utility and Pipeline Training Center at Barton County Community College represents 11 states. These companies agree that unless a skilled workforce is recruited and trained to meet the deficit caused by retirement, the safe and efficient transmission and distribution of natural gas in this country is at risk. One steering committee company alone has indicated the need to replace 750 positions in the next 5 years. Three transmission companies have indicated the need to replace 75 employees within the next three years.

### **Student Demand**

Currently the largest audience for this training is from the incumbent workforce. State and federal regulations require continuous training in Operator Qualified Skill areas in order to maintain compliance and employment. These students, from the workforce are taking this training in order to maintain compliance and to increase wages as most companies have implemented 'pay for skills' programs. These employees also complete training to qualify for advancement in their companies, increase safety and decrease losses in productivity.

Local high schools are interested this training for students who wish to enter the workforce upon graduation. This is a high wage, high demand, high skill industry, with jobs available in the state and region. It is attractive to students who are interested in technology but do not wish to be desk bound.

The local workforce center will assist in alerting their clients (displaced workers, job seekers, WIA clients) to this career option. Stipulations for assistance to pay tuition and fees state that clients must obtain a certificate or degree. With the options to earn a 16-credit certificate, clients may begin employment in a relatively short period of time and continue their training while earning a good wage in a career with potential for advancement.

### **Target Audience**

There are two primary target audiences for this training; the incumbent workforce, required to obtain operator qualified skills training to maintain employment and qualify for advancement; and the emergent workforce, developed to provide a pool of qualified employees to meet industry demands.

This audience will be recruited from area high schools, workforce centers, adult education centers, employment agencies and other agencies with related services (SER, Job Core).

### **Local Demand and Support**

Barton has 22 years of experience in providing training for the natural gas industry. The industry's projected 50% retirement rate, federally mandated Operator Qualified requirements, and advancements in technology resulted in an urgent need for training. A group of industry representatives who were familiar with Barton contacted the college to request that we provide year round, industry driven, college level training.

To date, our industry partners have contributed over \$75,000 cash and more than \$55,000 in-kind services to develop this training.

### **Business/Industry Partnerships**

A list of industry partners represented on the Midwest Utility and Pipeline Training Center is attached.

In addition to these partnerships, the Great Bend Workforce Center and Local Area 1 Workforce Board and the Department of Commerce are supportive of this training for their clients.

### **Duplication of Existing Programs**

This program has no duplication in the state of Kansas. A program for Gas Compression (production side) training exists at Seward County Community College. Pratt has a training program for the oil industry. None of these programs provide training for the transmission or distribution of natural gas.

### **Cost and Funding of the Proposed Program**

#### **Adequate Resources (staff requirements, advising, physical facilities, equipment, instructional materials, and contractual services, clinical Placements, apprenticeships, etc.**

This training program will be managed through Community Education, with assistance from the Career and Technical Division with regards to advising. The physical facilities for this training include the Midwest Utility and Pipeline Training Center that provides dedicated space for hands-on training, including an installed, underground cathodic protection field and a SMART classroom. The hands-on training portion of the building was funded by industry donations and grants. The college demonstrated its support of this project by funding the dedicated classroom. Specialized equipment for this training was purchased through grants and donations. Both natural gas transmission and distribution companies have agreed to provide apprenticeship or internship placements for participants of the program.

### **Impact Analysis**

The impact of this training will be measured by numbers of students trained and number of students employed. In addition to number of credit hours generated, this program will track certificates and degrees awarded. Where possible, employment statistics, including new hires and promotions will be recorded.

Community impact, in terms of economic growth and ancillary benefits to the community will be measured in cooperation with the Local Workforce Investment Board, Economic Development, and City Administrators.

**Resources for Funding**

In addition to income from tuition and fees, funding for the advancement of this program will be sought from the Kansas Department of Commerce, the Department of Labor and similar granting agencies.

**Business/Industry Support for Clinical and/or “Job-Site” Work Experience**

While not required for this program, both transmission and distribution companies have indicated an interest in providing internship or apprenticeship opportunities for participants of this program.

**Program Review and Assessment****Program Review & Evaluation**

This program will be evaluated using Barton’s standard program evaluation standards.

**Assessment Plan**

Students in these courses are required to meet Barton’s standard assessment levels prior to placement in all courses requiring assessments.

**New Program Curriculum Committee/Program Advisory Committee**

Assistance for the development of this program curriculum has been provided by the steering committee for the Midwest Utility and Pipeline Training Center (see attachment 2) and in consultation with LaVonne Gerritzen, Stephanie Goerl, Brian Howe, Jane Howard and Elaine Simmons.

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