

MOTION:

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The UAF Faculty Senate moves to approve a Certificate in Power Generation.

EFFECTIVE: Fall 2007 and/or
Upon Board of Regents approval.

RATIONALE: See course proposals #126-129 and full program proposal #130
from the Fall 2006 review cycle on file in the Governance Office, 312 Signers'
Hall.

Program is composed of general certificate requirements and 29 credits in PGEN,
PRT and WMT courses for a total of 38 credits.

Statement of Proposed Program:

The power generation program will help students develop entry-level skills needed in industrial and commercial electrical power generation and maintenance. Courses combine the technical know-how and hands-on experience necessary to develop entry level workers in a variety of power generation and industrial fields. In the classroom students will become familiar with the operation and maintenance of the standard equipment encountered in the power generation industry.

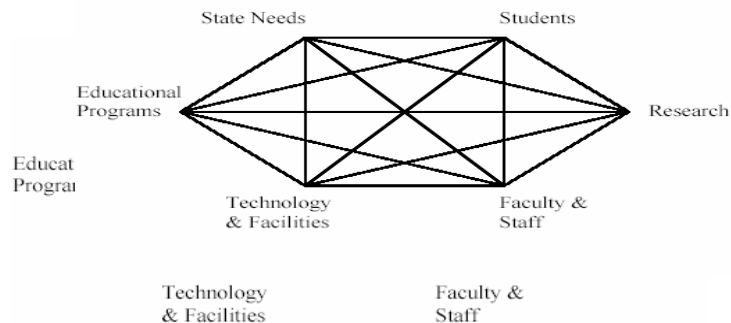
Proposed General Catalog Layout

Certificate Program Power Generation

1. Complete the general university degree requirements (page 80)
2. Complete the certificate requirements (page 82)
3. Complete the following program requirements:
 - PGEN 101 – Intro to Power Generation, Distribution & Alternative Energy ...3
 - PGEN 102- Basic Electricity for Power Generation Operators 4
 - PGEN 103 – Introduction to Power Generation: Maintenance.....4
 - PGEN 104 – Gas & Steam Turbines; Co-Generation and Combined Cycle
Technologies.....4
 - PRT 110 – Introduction to Occupational Safety,
Health and Environmental Awareness.....3
 - PRT 120 – Water Quality Management for Process Industries.4
 - PRT 140 – Industrial Process Instrumentation I.3
 - WMT 101 – Introduction to Welding4
4. Minimum credits required 38

**University of Alaska Board of Regents
Program Approval Summary Form**

MAU: UAF – TVC/CRA
Title: Power Generation
Target admission date: Fall 2007



How does the program relate to the
Education mission of the University of Alaska and the MAU?

TVC has long had a concentration in power generation under the former Maintenance Technology degree. In addressing emerging needs in Fairbanks and Interior Alaska, TVC's Process Technology advisory committee and academic leadership identified the need to expand this to a certificate program meeting high-growth, high-demand job requirements. The advisory committee is comprised of representatives from the various industries and businesses within the Interior who work closely with the Process Technology program to identify the needs for this program. In surveying these members, it became clear that the practice for filling vacant power generation positions within Alaska was to hire from Outside. By offering this program locally, in conjunction with a current articulation agreement with the Operators Local Union #302, industry partners will no longer need to go outside the State of Alaska to fill these positions and we will be meeting our mission of training Alaskans for Alaska's jobs.

The proposed 38-credit Certificate in Power Generation will enable the University to fulfill its mission through advancing and disseminating knowledge of commercial and industrial type power generation practices by creative teaching to diverse people. Specifically, courses will be coordinated across multiple MAUs and offered through a variety of instructional methods consistent with current accredited teaching and delivery methodologies, practices and standards. The content of the courses is relevant to the power generation field and consistent with current national standards as reviewed by the Center for the Advancement of Process Technology (CAPT) and Alaska Process Industry Careers Consortium, with core content building towards the Operating Engineers Journeyman rating.

Currently, there will be no impact on existing programs and units across MAU and system, including GERs.

What State Needs met by this program.

It is important for Alaska business and industry to provide safe automated working environments for all workers in Alaska. This provision creates less injury in the workplace which in turn equates to quality life experiences, as it reduces insurance costs and costs in remedial education retraining and costly social services later in life. The quality and existence of the safe automated working environment is directly linked to the education of the skilled technician as the individual responsible for calibration and set-up of highly technical, sensitive monitoring and control equipment. More automated systems are implemented daily throughout the state of Alaska and these automated industries and systems require highly trained and skilled individuals. Research has shown that education of power generation technicians reduces the level of equipment damage and injury as well as reducing the number accidents that occur in the workplace.

It is in the best fiscal interests of the state to have high quality programs and training in power generation, maintenance, calibration and set-up of fully automated industrial power generation systems.

There is currently a shortage of qualified power generation operators and maintenance technicians and managers in the state of Alaska. Industry growth and natural resource development in the state increases the number of working environments which will in turn increase demand and employment opportunities, for qualified power generation operators and power generation maintenance technicians.

What are the **Student** opportunities and outcomes? **Enrollment** projections?

The UAF certificate in power generation was requested by the industries in the interior region. The initial promotion of the program was proposed by the Golden Valley Electric Association (GVEA) and the Operating Engineers Local 302. Many of the current students of the proposed certificate want greater knowledge in this field, and in many cases it is required for their jobs. Since there is no relevant degree or certificate/training program available here, they go to Valdez or out of state, seek a less satisfying degree or training or change careers completely, or leave the university with unfulfilled career aspirations unprepared for the more challenging positions in the power generation profession.

Based on current needs, industry growth and projections Alaska will continue to suffer shortages in the workforce in all sectors including power generation technicians and related positions.

National surveys provided by CAPT indicate shortages in power generation operators and power generation maintenance professionals in all industries on a national scale. Operating Engineers Local 302 has also indicated that training individuals in conjunction with UAF to enter their ranks as a means of meeting the needs of industry, by addressing both attrition and industry expansion.

Alaska has high potential for workforce expansion. According to the Alaska State Department of Labor, there are nearly 10,000 new jobs in industry settings being developed with known projected projects in the state. All of these industries will require power generation maintenance technicians to monitor, regulate, and calibrate and automated systems for Alaska's power generation industries.

With the trends in the profession for the last 30 years, the new automation systems within industry identified by industry and the Department of Labor indicate a well established need now, and for the foreseeable future, for trained power generation operators and power generation maintenance technicians. With the aging workforce and projected industry growth and development the need for additional trained power generation operators has never been more urgent.

Describe **Research** opportunities:

N/A

Describe Fiscal Plan for development and implementation:

Three year funding for the project is coming from the USDOL Project Northern Wave Grant (Fast Track Training). By developing this program over the 3 year grant period we will be building capacity. We anticipate the program to be self-sustaining through student tuition, industry partner support and general fund money through the Process Technology Program, which shares courses and adjuncts with the Power Generation Program.

Resource Commitment to the Proposed Degree Program

Resources	Existing		New		Total
	College/School	College/School	Others (USDOL Project Northern Wave Grant)		
Regular Faculty (FTE's & dollars)	0		FTE .50 \$30,000 Includes benefits	\$30,000	
Adjunct Faculty (FTE's & dollars)	0		FTE .75 (adjuncts will teach about 18 credits) \$21,780 Includes 10% adjunct benefit	\$21,780	
Teaching Assistants (Headcount)	0				
Instructional Facilities (in dollars and/or sq. footage)	520 sq ft				
Office Space (Sq. footage)	310 sq ft				
Lab Space (Sq. Footage)	1820 sq ft				
Computer & Networking (in dollars)	0	\$15,000 *		\$15,000	
Research/instructional/office Equipment (in dollars)	\$3,000		\$10,500 control panels & synchronization switch gear	\$13,500	
Support Staff (FTE's & dollars)	\$15,000			\$15,000	
Supplies (in dollars)	\$5,000		\$4,000	\$9,000	
Travel (in dollars)	0				

* TVC will identify funds to support this one-time expenditure.