Background

According to the 1997-2002 Kentucky Plan for Equal Opportunities in Postsecondary Education, Maysville Community and Technical College is eligible for a quantitative waiver. Approval of this program would be contingent upon Board approval of the waiver by the KCTCS Board of Regents at the March 23, 2007, meeting.

An executive summary of the proposal is attached. A copy of the full proposal has been forwarded to each member of the KCTCS Board of Regents Academic Affairs and Curriculum Committee.

Rationale

- The proposed AAS degree is consistent with the missions and goals of KCTCS and Maysville Community and Technical College.
- Advisory committee minutes, local surveys of industry, and letters of support from local business and industry representatives reveal strong support for the proposed associate in applied science degree.
- The 66-71 credit hour Energy Systems program with Power Plant Operations Option prepares graduates for employment across the entire range of energy technologies. The initial Power Plant Operations Option will prepare students for employment as operators in fossil-fueled electricity generating power plants.
- Energy production requires highly trained individuals for safe, efficient operation within strict operational and environmental parameters. This is a highly skilled workforce receiving excellent wages. The Department of Labor (2004) reported 34,000 current operators with a median salary of $25.25 hourly and $52,520 annual wages. Just within the Maysville area, East Kentucky Power (EKP) and Dayton Power and Light (DP&L) plan to hire as many as 100 employees over the next five to ten years and require that these new employees be properly trained. The Energy Systems program satisfies that need and has the capacity to meet future needs in the entire energy generation industry.
- Maysville Community and Technical College is currently approved to offer, as a pilot, the Power Plant Operators Certificate. Therefore, adequate faculty, classrooms, equipment, and library resources are presently in place to support the implementation of this program. Additional support from regular tuition, grants, and local industry is available to provide funding to purchase additional equipment and hire faculty as needed.

Recommendation

That the KCTCS Board of Regents approve an Associate in Applied Science (AAS) in Energy Systems with an option in Power Plant Operations and a Certificate in Power Plant Operator for Maysville Community and Technical College, contingent upon Board approval of a quantitative waiver, to be implemented in fall 2007.
EXECUTIVE SUMMARY

Associate in Applied Science in Energy Systems

Maysville Community and Technical College

A Proposal for Initiation of a New Degree Program

Mission, Influence, Organization

The proposed Associate in Applied Science in Energy Systems is consistent with the missions of KCTCS and Maysville Community and Technical College. The missions and goals of the Kentucky Community and Technical College System (KCTCS) and Maysville Community and Technical College articulate the need for an associate degree to provide a more educated and highly skilled workforce, which the proposed AAS in Energy Systems, Power Plant Operations Option, and Certificate in Power Plant Operator will do.

Program Description

The Energy Systems degree is designed to prepare its graduates for entry-level positions across the entire range of energy technologies. The initial option will prepare students to work safely and effectively as operators in fossil-fueled electricity generating power plants. The curriculum will also provide a background in other types of energy production and distribution, including solar, wind, geothermal, petroleum-based, and emerging technologies, such as ethanol, biodiesel, and clean coal technologies. Graduates will have an understanding of the financial, societal, and environmental impacts of the various energy production technologies and will be able to operate and troubleshoot the machinery and systems used in energy production.

Supportive Data

The demand for electrical power generation in the United States has reached an all time high. Robust energy demand and a strong U.S. economy have placed a significant demand for baseload electrical generation, resulting in a strain on the aging electrical generation infrastructure. In response, the U.S. electric utility industry expects the construction of 50 large coal-fired projects totaling 30,000 megawatts (MW) being built through 2014. Locally, East Kentucky Power recently completed the construction of Gilbert Station in Maysville, began construction on a fourth unit at Spurlock Station, and has permitted a new coal-fired power plant near Winchester, Kentucky. Older facilities, such as Dayton Power and Light (DP&L) Stuart Station in Manchester, Ohio, are revamping their facilities to meet increasing demand and stricter environmental regulations. Nationally, generation and transmission co-ops plan to spend $27.8 billion for new construction, transmission lines, and environmental controls, resulting in planned construction of about 120 smaller (300 megawatt) coal-fired plants and 30 liquefied natural gas plants. Within Kentucky, Ohio, and Indiana there are currently 73 coal-fired plants in operation.
Many of the existing power plants in the Maysville area were built between 1970-1980, and a majority of the workforce was hired during initial start up of these facilities. East Kentucky Power is experiencing a huge turnover in personnel and expects to retire 40-60 percent of their workforce over the next five to ten years. DP&L Stuart Station is experiencing even greater turnover, with approximately 75 percent of the 400 employees eligible for retirement within the next ten years. Similar need can be found across the country as increasing demand for energy and trained operators is coupled with an aging workforce. Replacements will need to possess strong technical skills to fill these positions. In addition, stricter regulations and increasing demand require that current employees continuously train on the newest technologies to meet demand and environmental regulations. Now is the time to provide technical training that meets the needs of these populations, especially locally and regionally.

Energy production requires highly trained individuals for safe, efficient operation within strict operational and environmental parameters. This is a highly skilled workforce receiving excellent wages. The Department of Labor (2004) reported 34,000 current operators with a median salary of $25.25 hourly and $52,520 annual wages. Just within the Maysville area, East Kentucky Power and DP&L plan to hire as many as 100 employees over the next five to ten years and require that these new employees be properly trained. The proposed Energy Systems program satisfies that need and has the capacity to meet future needs in the entire energy generation industry.

Local industry and potential employers strongly support this program approval.

**Resources**

Maysville Community and Technical College is currently approved to offer a pilot certificate in Power Plant Operations. Faculty, facilities, and equipment are present to implement the program. No additional funding is required for implementation.

**Conclusion**

This proposed program is consistent with the missions and goals of KCTCS and Maysville Community and Technical College. There is an approved curriculum for the program. Local and state needs support the establishment of this program. Current resources are available to implement the Energy Systems program and the Power Plant Operations option. The approval of this program will assist Maysville Community and Technical College in meeting needs locally and nationally.