Agenda Item 2d

Program Proposal
Associate in Industrial Technology
Major in Radiation Protection Technology
Spartanburg Community College

Summary

Spartanburg Community College requests approval to offer an Associate in Industrial Technology degree with a major in Radiation Protection Technology, to be implemented in Fall 2008. The Associate of Occupational Technology (AOT) with a Major in General Technology, Concentration in Radiation Protection Technology, which the College presently offers, will be simultaneously terminated with the implementation of the proposed program.

The proposal was approved by the State Board for Technical and Comprehensive Education on March 11, 2008. It was received by the Commission on Higher Education on February 15, 2008. The proposal was reviewed without substantive comment and approved unanimously at the meeting of the Advisory Committee on Academic Programs on March 20, 2008.

According to the proposal, the purpose of the program is two-fold: 1) to meet the growing demand for Radiation Protection Technicians in the College's service area and 2) to prepare students to pass the Institute of Nuclear Power Operations (INPO) certification examination and Nuclear Regulatory Commission (RNC) regulated preparatory courses, as well as the on-site task performance evaluations that follow on-the-job training internships.

Because every nuclear power facility in the country by law must operate with a full complement of Radiation Protection Technicians, it is imperative that a program be available so students can access it in South Carolina. Seven licensed commercial light water pressurized reactors exist in South Carolina.

According to the proposal, in the near future the industry is facing a critical shortage of workers. In the next five years, 27% of all personnel in the industry will be eligible for retirement. By the year 2015, 70% of the current Radiation Protection Technology employees in the nuclear industry will be eligible to retire. Because of the anticipated position openings in this occupational sector, the institution reports that opportunities for employment in the field will be excellent to meet what Duke Energy has described as a "desperate" situation in the industry. Over the next three years, the College's regional needs survey showed that employers estimate a need for 86 full-time Radiation Protection positions for Radiation Protection Technology graduates and for 110

part-time positions in the College's service area. Duke Energy has issued an unsolicited statement specifying that graduates of this program will receive preference in hiring for all Radiation Protection Technician positions in the College's region.

Spartanburg Community College is the first of the technical colleges to seek approval to offer this type of program in South Carolina. The program is considered to have unique value as a terminal degree designed solely to meet the needs of the nuclear power industry. For both these reasons, the institution has not sought, and will not seek, any articulation agreement with a four-year public in-state institution for the Associate in Industrial Technology in Radiation Protection Technology.

The curriculum for the proposed program in Radiation Protection Technology will consist of a total of 72 credit hours. The program is designed to be completed over a five semester period. The first academic year of the program will be devoted to general education coursework solely. The remaining three semesters of the program will be devoted entirely to nuclear-industrial didactic coursework and internships.

This program has been developed to meet the needs of Duke Energy, because it operates nuclear facilities in North and South Carolina serving the Spartanburg region. A Memorandum of Understanding concerning the respective responsibilities of the two parties has been signed by the College and Duke Energy and is currently in effect as a matter of best practices. The proposal itself makes clear that the institution retains final oversight on all coursework germane to the program of study.

The program will require a total of four (3.75 FTE) faculty members in each of the first three years of the program's implementation. All of these faculty members will be full-time Duke Energy employees who will teach in the program as adjuncts. Total costs for these faculty to be paid by Duke Energy have been estimated by the institution at $538,820 for each of the first three years of the program's implementation.

The proposal states that the college anticipates the program will enroll 20 new students (22.9 F.T.E) in the first year, rising to 24 (28 F.T.E.) in both the second and third years of the program's implementation. At the conclusion of the second year of implementation, 20 students are anticipated to graduate per year. If the student enrollment and graduation rates are realized, the program will meet the Commission's program productivity requirements. Admission to the program will be academically selective. Students will be required to have higher levels of the COMPASS/ASSET scores and to have completed certain mathematics courses with at least a 2.5 average.

A large working area on the Central Campus of the Spartanburg Community College has been re-fitted for the program so that a radiation-free power facility loop is available to simulate an operational area with radiation at a Duke Energy facility. The cost of this refitting is $900,000, which has been borne by Duke Energy. Financial

resources listed in the proposal for this program include none of the additional revenues to be provided by Duke Energy in support of the program. However, a memorandum from the institution on March 25, 2008, outlines all these additional revenues associated with the program and is discussed below.

Each student must complete two on-the-job internships of 240 clock hours each in the second year of the program of study. These on-the-job internships will be offered in Duke Energy facilities and the cost of them will be borne by Duke Energy. The institutional memorandum of March 25, 2008, has stated that the total cost for the internships is estimated at $231,646 per year and will be paid for by Duke Energy.

The proposal states that library and learning resource services are available to students of the program. These resources are often in the form of online periodical databases containing thousands of articles or portions of reference books in full text are available to students. Many of these online databases are available solely through PASCAL with its specialized, cutting edge collections of online scientific journals. In addition, the fact that the second year students in the program will be potentially stationed for internships in two other technical colleges' service territories makes the availability of reciprocal borrowing privileges through PASCAL and "PASCAL Delivers" (i.e., the PASCAL service of all lendable library materials in the state within 48 hours to any public or private college student) very important to the students' academic success.

The proposal identifies a three-tiered process of accreditation as a requirement for the program. The cost for this accreditation process will be borne by Duke Energy and has been figured as a part of a total estimated cost for administration and supplies for the program, as discussed below.

As shown in the program proposal's table of costs, total costs for the operation of the program for the first three years are estimated at $51,900. These costs are found in the following categories: supplies/materials ($26,000); library resources ($7,500); equipment ($10,000); travel ($6,000).

Also, according to the memorandum of March 24, 2008, Duke Energy will provide a total of $1,120,000 per year for the first three years of the program's operations. During each of the first three years of the program's implementation, these additional revenues will cover costs of $538,820 for all programmatic faculty salaries, $231,646 for all student internship costs; and the remainder ($349,534) for costs for campus-based equipment (e.g., the energy loop), accreditation processes, IT computer set-ups, and software purchases.

Shown below are the estimated projections of new costs to the institution which are associated with implementation of the proposed program for its first three years as

compared with the estimated revenues projected under the Mission Resource Requirement and the Resource Allocation Plan. These figures exclude all costs to be covered by Duke Energy directly, as explained above.

Year	Estimated MRR Cost for Proposed Program	Extraordinary (Non-MRR) Costs for Proposed Program	Total Costs	State Appropriation	Tuition	Total Revenue
Year 1	$434,013		**$34,013**	N/A	$90,289	**$90,289**
Year 2	$529,000		**$529,000**	$173,796	$110,470	**$284,267**
Year 3	$529,000		**$529,000**	$212,359	$110,470	**$322,830**

These data demonstrate that if Spartanburg Community College can meet the projected student enrollments and contain costs as they are shown in the proposal, the program will not be able to cover new costs with revenues it generates through the MRR and tuition by the third year of its implementation. However, when the additional annual revenues of $1,120,000 from Duke Energy for the program are factored into the funding equation, the program proposal appears to be able to be implemented with quality in a fiscally sound manner.

In summary, the proposed new program proposal is critically needed and will be a unique offering among all institutions in South Carolina. Because the program is conceived as a terminal program exclusively, the institution will seek no articulation agreement with any institution in the state for this program. The costs of the program will be borne as a public/private partnership with Duke Energy as the private partner. The institution and Duke Energy have in effect a signed Memorandum of Understanding which provides a framework for the parties to supply the necessary resources and to establish areas of responsibility for implementation of the program with quality and effectiveness.

Recommendation

The staff recommends that the Committee on Academic Affairs and Licensing commend favorably to the Commission the program leading to the Associate in Industrial Technology degree with a Major in Radiation Protection Technology at Spartanburg Community College, to be implemented in Fall 2008, provided that no "unique cost" or special state funding be required or requested, and provided that the Associate in Occupational Technology degree with a Major in General Technology, Concentration in Radiation Protection Technology be simultaneously terminated with the implementation of the A.I.T. in Radiation Protection Technology.