Program Planning Summary
State Board for Technical and Comprehensive Education

1. **College:** Aiken Technical College (ATC)

2. **Award:** Associate Degree in Industrial Technology

3. **Major:** Radiation Protection Technology

4. **Designation** (Check one)

   a. ____X____ New Program Proposal

   __68__ Number of credit hours

   b. _____ Program Modification

   _____ Number of credit hours

5. **Proposed Date of Implementation**: Fall 2009

6. **Justification of Need**:

   The Radiation Protection Technology, also known as Radiological Control (RADCON), degree provides the student with the opportunity to develop the skills necessary to evaluate a worksite requiring radiological controls. Students will be able to design a plan to minimize personnel exposure to radiation, perform required radiological surveys for radiation and radioactive contamination, manage a radiation protection program at a nuclear or Department of Energy (DOE) facility within the boundaries of radiological protection standards, and examine radiological survey data to detect and resolve errors in equipment operation.

   The shortage of RADCON technicians is national in scope and is documented by numerous sources including the Nuclear Energy Institute – NEI (Nuclear Energy Industry Initiatives Target Looming Shortage of Skilled Workers, 2007), the Health Physics Society (Human Capital Crisis Report, 2004), and the RADCON Working Group of the DOE Energy Facilities Contractors Group (DOE Facilities Survey, 2005). Studies estimate that more than half (57%) of the current nuclear workforce will retire over the next five to ten years. NEI surveys indicate that nearly half of nuclear industry employees are over 47 years old and less than 8% of the workforce is under age 32. More than 15,000 workers are approaching retirement eligibility – representing 27% of all nuclear sector jobs. Even more alarming is the fact that 1 in 3 employees of key contractors and suppliers to the industry will be eligible for retirement within the next two years. Demand for RADCON workers is already at 130% of supply. Without direct interventions to increase the RADCON workforce, demand will outpace supply by 160% in just 5 years and will double the supply within a decade. These studies also call for the diversification of the energy workforce to expand the recruitment of minorities to nuclear energy technology careers.

   At the regional level, ATC has taken the lead in defining technician needs in the college's service area. In partnership with the SC Council on Competitiveness and the Southern

Growth Policies Board, ATC hosted a statewide forum in 2007 to assess the needs of the State's energy cluster. Forum participants from the DOE and nuclear utility sector reiterated the potential for significantly higher earnings for technicians in the energy sector, including nuclear energy, and the higher than average job growth projections for this sector. Washington Savannah River Company (WSRC), the prime DOE contractor for the Savannah River Site (SRS), will need to hire 50 RADCON technicians over the next 5 years.

Apart from federal missions, there is significant growth anticipated in commercial nuclear power for electricity generation. Nationally, nuclear power is re-emerging as an economic and environmentally sound choice. This nuclear renaissance offers a strategic economic growth opportunity for South Carolina. South Carolina ranks 3rd among the 31 states with nuclear capacity and has the largest nuclear capacity in the southeastern US. More than half (52%) of the State's current electricity is produced through seven nuclear plants around the State. Four new utility reactors are in the planning stage in South Carolina – the highest number of any state. During the construction phase and upon commissioning of these reactors, there will be an increased need for RADCON workers.

7. **Anticipated Program Demand and Productivity**:

Savannah River Nuclear Solutions (SRNS) and the WSRC are the prime DOE contractors for the SRS and will need to hire 50 RADCON technicians over the next 5 years. In addition to these needs, other missions are currently under construction at DOE's SRS. For example, Shaw Areva and Parson, prime contractors at SRS, will have a combine demand for approximately 18 new RADCON technicians within three years. These positions do not include the various sub-contractor needs to support the various missions of the SRS. Additionally, two nuclear utilities within commuting distance of Aiken are actively in the process of gaining approval for reactors at their respective sites which will impact the availability of RADCON technicians in our area.

We anticipate offering the RADCON program to two cohorts of students; a day-time cohort and a part-time night offering. Based on the actual students enrolled in our certificate program, we anticipate 30 students to enter the associate degree program with 18 graduates. We anticipate a 60% retention rate within program.

8. **Assessment of Extent to Which Proposed Program Duplicates Existing Programs in the State**:

ATC is the second technical college to propose a Radiation Protection Technology degree. Spartanburg Community College (SCC) has a program developed through their relationship with Duke Energy. SCC's program targets the commercial industry and the related Academy of Nuclear Energy (ACAD) standards set forth by the National Academy for Nuclear Training and the Institute of Nuclear Operation (INPO). The DOE criterion is similar to the ACAD standards. All ACAD guidelines are addressed in ATC's curriculum and meet the DOE standards. ATC's program will be based on the curriculum developed by the University of Missouri, which encapsulate both DOE and Utility missions and standards.

9. **Relationship of the Proposed Program to Existing Programs at the Proposing Institution**:

The college currently has an Associate Degree in Health Science with a major in Radiologic Technology, which provides training specific for employment in a medical facility. The proposed program provides training and instruction that will prepare graduates for employment in an industrial facility.

10. **Relationship of the Proposed Program to Other Institutions Via Inter-Institutional Cooperation:**

The proposed program is designed with two distinct paths. One path leads to a terminal degree for those students who elect to enter directly into the workforce. The degree also allows for an optional path to allow for those students who elect to continue their studies at a four-year institution. The goal of the proposed program is to provide graduates who are educated and competent in both commercial and DOE nuclear facilities. As noted above, the proposed curriculum is based on a model program designed by the University of Missouri through a Department of Labor grant - Center of Excellence for Radiation Protection Technology Education and Training - A Model Demonstration Proposal.

11. **Total Costs Associated With Implementing the Proposed Program (General Estimates Only)**:

The proposed budget in Table I details the costs associated with the Radiation Protection Technology degree. The equipment currently utilized in our certificate program will be combined with donations from SRNS, which will cover the majority of the program's equipment needs.

Table I - Proposed Budget

Expense Category	**FY2009**	**FY2010**	**FY2011**
FT Faculty Salary	$65,000	$65,650	$66,306
PT Faculty Salary	$8,750	$8,750	$8,750
Fringes	$20,700	$20,700	$20,700
Equipment	$65,000		0
Supplies	$4,000	$1,000	$1,000
Total	$155,950	$88,600	$89,256
Grand Total (FY09-11)			**$333,806**

_____ _____

(Signature of College President) (Date)