

Spec. Code: 4824  
Occ. Area: 01  
Work Area: 444  
Prom. Line: None  
Prob. Period: 6 mo.  
Effective Date: 12/15/11  
Last Action: Rev.

## **RADIATION ONCOLOGY PHYSICIST**

### Function of Job

Employees in this class provide assistance to the Academic Clinical Physicists in the development and implementation of radiation therapy treatments for patients with cancer. More specifically, Radiologic Technologists keep records of the maintenance and operation of all therapy equipment, check charts of patients under treatment and act as a liaison between the Radiation Oncologist, the Academic Clinical Physicist, and the technologists who delivers the treatment.

### Characteristic Duties and Responsibilities

1. Uses radiation safety measures and protection devices to comply with government regulations and to ensure the safety of patients and staff
2. Develops, reviews, and evaluates developed x-rays, video, or computer generated information to determine if images are satisfactory for diagnostic purposes (this includes, but is not limited to, the following types of technology: computerized tomography (CT), magnetic resonance imaging, ultrasound, and/or nuclear medicine studies)
3. Provides consultation to Radiation Oncologist in initial planning, simulation, and techniques of external teletherapy and/or brachytherapy (radioactive sources)
4. Explains procedures and observes patients to ensure safety and comfort during scan
5. Generates a plan for delivery of the prescribed dose of radiation to the tumor with linear accelerators, while sparing the surrounding healthy tissue, and calculates time of treatment
6. Prepares shielding blocks to shape the radiation field to conform to the tumor, based on computer-generated projections from diagnostic CT images
7. Calculates setting of linear accelerators for the exact delivery of the prescribed dose and records these values. Based on the calculation, verifies that parameters are set correctly both prior to and on the first day of treatment
8. Assists the Radiation Oncologist in handling radioactive sources (for example: loading the sources in the applicators or needles, transporting them to the patient's room, inserting them for treatment and removing the sources at the end of treatment)
9. Follows procedures pertaining to the storage and inventory of radioactive sources, in compliance with State and national requirements
10. Reviews patient's records on a weekly basis to monitor progress the treatment process

11. Provides in-house quality control on a daily basis for output constancy of the linear accelerators and annually for absolute output calibrations; performs quality assurance on all accessories used with the linear accelerators and takes corrective action as needed
12. Participates in quality assurance programs conducted by national agencies using thermo luminescent dosimeters
13. Records calibrations of linear accelerators and quality assurance data as required by State
14. Provides consultation to solve diverse problems arising in specific patient treatment situations
15. Provides in-service training/education on issues related to medical radiation physics and radiation safety
16. Assists the Radiation Oncologist in the development of new projects directly related to improving patient care
17. Performs other related duties as assigned

#### Minimum Acceptable Qualifications

#### CREDENTIALS TO BE VERIFIED BY PLACEMENT OFFICER

1. Masters in Physics or related field (e.g., as Medical Physics, Engineering, etc.)
2. Must be American Board of Radiology(ABR) eligible or certified

#### KNOWLEDGE, SKILLS, AND ABILITIES (KSAs)

1. Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction
2. Knowledge and prediction of physical principles, laws, their interrelationships, and applications to understanding fluid, material, and atmospheric dynamics, and mechanical, electrical, atomic and sub-atomic structures and principles
3. Knowledge of computers and electronics
4. Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications
5. Skill in talking to others and conveying information effectively; being aware of others' reactions and understanding why they react as they do
6. Skill in operation monitoring (watching gauges, dials, or other indicators to make sure a machine is working properly)
7. Ability to tell when something is wrong or is likely to go wrong