

UNIVERSITY OF PUERTO RICO, MEDICAL  
SCIENCES CAMPUS, SCHOOL OF HEALTH  
PROFESSIONS, RADIOLOGIC TECHNOLOGY  
PROGRAM

# RADIATION SAFETY PROTECTION POLICY



## Introduction:

The first fatality from a radiation exposure was Clarence Dally, Thomas Edison's assistant. As a result of this event, many equipment, procedures and techniques were developed to control radiation levels and reduced the overexposure of the personnel, patients and general public.

The use of radiologic equipment for medical diagnostics put the patients, personnel, and public at risk. The purpose of the security measures against the radiation is to keep the normal levels. The security measure against radiation is designated to reduce the exposure levels during the operation and handling of radiological equipment in radiological procedures.

To reduce the radiologic exposure we must follow the three cardinal's fundamental principles of radiologic protection that are: Time, Distance and Shield. For that reason, we practice a basic radiation protection concept known as ALARA (acronym for "As Low As Reasonably Achievable").

Now a days, the National Council on Radiation Protection (NCRP), frequently reviews the recommended doses. The doses limits that are recommended for the personnel that works with radiologic equipment are 50mSv/year (5,000mrem/year). The whole body dose limit (DL) is 10mSv (1,000rem) yearly. During pregnancy, is 5mSv (500rem), but should not exceed of 0.5mSv (50mrem).

## Guidelines:

1. The student should follow the ALARA concept properly, every time to prevent unnecessary repetitions.

2. The student must ask about the possibility of Pregnancy to all patient of reproduction age.
3. During the radiologic procedure the student should secure all the access doors of the x rays units.
4. If necessary the presence of a companion of the patient during the course of a procedure will require that protection is placed.
5. The student should use all the security equipment (lead gloves, aprons, and thyroids shields) to prevent unnecessary radiologic exposure.
6. Should use collimators, diaphragms and cones to restrict the X ray beam just to the main area.
7. The student should protect himself from the radiation exposure in the control room, observing the patient through the lead glass.
8. The student is not allowed to hold or grab the image receptor or the patient during the radiation exposure and will use the immobilization equipment properly.
9. The student will use a dosimeter to indicate and evaluate the radiologic exposure dose levels during the radiologic studies performed.
10. The student is not allowed to surpass the occupational radiation exposure dose limits.
11. In the student suspected pregnancy, should notify to the Clinical Coordinator/Program Director, to follow the Pregnancy Policies.