

What a RADIATION PHYSICIST does

The primary responsibility of the Radiation Physicist lies in the shielding design, radiological considerations and operational aspects of the facilities to which he/she has been assigned.

JOB DESCRIPTION

1. To perform calculations related to shielding and other radiological aspects (activation etc.) and provide specifications for the design of new facilities and experiments.
2. To ensure safe beam containment by
 - a. Assisting in beam-line design.
 - b. Calculating radiation dose rates due to beam mis-steering.
 - c. Calculating heat loads for critical collimators and other devices.
3. To assist in the design of the Personnel Protection System (PPS) and Beam BCS).
4. To supervise initial radiation measurements and establish area monitoring at new beam lines.
5. To consult with experimenters on detector design and accelerator physicists on machine design.
6. To assist experimenters in determining causes of their radiation backgrounds and in designing shields to minimize the problem.
7. To provide assistance to engineers and physicists in avoiding or minimizing radiation damage problems (e.g., perform calculations and provide high-dose dosimetry in the megarad range).
8. To develop and maintain radiation transport codes to be used for detector design, machine development, radioactivation, shielding, and dosimetry.
9. To ensure safe operation of beam lines by creating procedures (e.g., Beam Authorization Sheets), in conjunction with the Accelerator Department Safety office.
10. Participate in the development of the Radiation Safety Program at SLAC (involves Radiation Safety Work Control forms and commenting on DOE orders, regulations and internal policies and procedures, and writing technical basis documents.
11. Participate in committees (internal and external) that review the radiation safety program.
12. Perform and publish research in Radiation Physics related to the overall SLAC mission and participate in professional development.