

## RADIOPROTECTION ENGINEERING

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Radiation protection services in the form of operational health physics monitoring and advice, establishment of procedures for working in supervised and controlled areas and personal dose monitoring were provided to all ipen sites. Routine health physics monitoring of work areas ensures that a high standard of safe working conditions is maintained. The radioprotection staff is responsible for performing radiation surveys inside and outside the Institution. Approximately, a million of the workplaces monitoring were made during the period 2002-2004. Besides this, the staff is also responsible for: conducting training in the safe use of radioactive materials and radiation producing machines; evaluating equipments and facilities including the testing of containment systems; preparing outgoing shipments of radioactive materials in accordance with current federal and state regulations. Facility licenses were granted for the operation of the Cyclotron and the Fuel Production Facilities. As part of the work safety assurance program for the staff, the IPEN monitored the workers.

The surface decontamination laboratory is responsible for decontamination procedures on worker skin and clothing, workplaces, objects and equipments. Leak tests on sealed sources of industrial nuclear gauges are also performed there. During the period 2002-2004, were made 15.477 decontaminations.

Radiological emergency management is a term that describes the efforts to prevent, prepare, respond and recover from an event that could result in significant undesirable radiation related effects. Efforts to prevent radiological emergencies include learning actions to stop such events from happening, and actions that decrease the harmful effects of such occurrence. Recovering from a radiological emergency includes actions performed after an emergency to return to normality.

The Nuclear and Radiological Emergency Response Team of the Radioprotection Service is the mechanism used to capture details of radiological emergencies. This team is responsible for attendance of emergencies in São Paulo state. Forty-two notifications of reportable incidents were made during the period 2002-2004. Three emergency exercise was performed at IPEN Research Reactor, IEA-R1m, with the participation of qualified observers. Several training activities in nuclear emergency were carried out for fire brigade companies, professionals of medical area, safety officers and employees of the institution. According to the importance of this subject, and to improve the emergency preparedness for nuclear and radiological response, the following activities are being performed: Maintenance in-site emergency support in the IPEN installations; Review of the Radiological Emergency Plan of IPEN installations and; Execution of the partial exercises focusing the Radiological Emergency Plan of IPEN.