RPR2120 Evaluation of the risks from radioactive releases into the environment in normal and accidental situations and nuclear emergency plans

[30h+15h exercises]

Teacher(s): Antoine Debauche, Patrick Smeesters (coord.)
Language: French
Level: Second cycle

Aims

To acquire the theoretical and technical knowledge allowing a critical comprehension of the way nuclear risks are evaluated (risk of release and consequences) and protective measures (for the population and the food chain) are decided and implemented.

Main themes

1st part. Potential releases from nuclear installations in normal and accidental situations: transfer of radioactivity through the ecosystems up to the food chain; measurement of radioactivity in the environment; description of an operational network.
2d part . Evaluation of the consequences of real or potential releases in the first phase of a nuclear accident: models (use and limitations), decision-aiding techniques, practical training; a posteriori evaluation of the consequences of nuclear releases: models, parameters, hypotheses and examples.
3d part. National nuclear emergency plans: principles of protection of the population in nuclear accidents: concepts, possible countermeasures and their justification, choice of intervention levels and intervention zones; maximum permitted levels of radioactive contamination of foodstuffs: regulations and recommendations (elaboration and use); agricultural countermeasures before, during and after a nuclear accident.

Programmes in which this activity is taught

ESP3DS/R	Diplôme d'études spécialisées en santé publique (radioprotection, experts pour établissements de classe 1)
RPR9CE	Certificat universitaire en radioprotection et en application des rayonnements ionisants

Other credits in programs

ESP31DS/RC	Première annnée du diplôme d'études spécialisées en santé publique (Contrôle physique en radioprotection)	Mandatory
ESP31DS/RP	Première annnée du diplôme d'études spécialisées en santé publique (Physique d'hôpital)	Mandatory
ESP32DS/RE	Deuxième année du diplôme d'études spécialisées en santé publique (Radioprotection de l'environnement)	Mandatory
RPR9CE/C	Certificat universitaire en radioprotection et en application des rayonnements ionisants (Contrôle physique en radioprotection)	Mandatory