

# Radiation protection: principles and regulations



Through radiation protection, we implement all the preventative measures that limit the exposure of teams and populations to ionizing radiation.

In order to avoid or reduce the associated risks, radiation protection follows three main principles: justification, optimization and limitation of doses:

- **The justification of activities** that carry the risk of exposure to ionizing radiation;
- **The optimization of exposure** at the lowest level reasonably achievable. This is the ALARA precautionary principle (As Low As Reasonably Achievable) ;
- **The limitation of doses of individual radiation exposure** so as not to exceed the regulatory limits.

These three fundamental principles are taken from the recommendations of the ICRP (International Commission for Radiation Protection) and are enshrined, in France, in its Public Health Code (Code de la santé publique).

## REGULATIONS GOVERNING RADIATION PROTECTION

### Regulatory limits per country

The Sievert (Sv) is a unit used in radiation protection which is expressed in "equivalent dose" and takes into account the characteristics of the radiation and of the irradiated organism. On average, the annual exposure of a member of the public in France is 4.5 mSv.

Regulatory limit set for employees and subcontractors	Cumulative annual dose over a rolling 12-month period for exposed workers
ICRP recommendations	100 mSv over 5 years without exceeding 50 mSv per year
EURATOM council directive 2013:59 of Dec 5, 2013	20 mSv per year
Niger	20 mSv per year
Canada	100 mSv over 5 years without exceeding 50 mSv per year
Kazakhstan	100 mSv over 5 years without exceeding 50 mSv per year
France	20 mSv per year
Namibia	100 mSv over 5 years without exceeding 50 mSv per year
Mongolia	100 mSv over 5 years without exceeding 50 mSv per year
Gabon	100 mSv over 5 years without exceeding 50 mSv per year