

How long must radioactive waste be confined?

Radioactive waste contains a mix of different radioactive atoms. Its toxicity decreases as a result of radioactive decay and, after a certain amount of time, the waste reaches an activity level equivalent to that of naturally occurring substances. Generally speaking, after approximately 30 000 years, low-

and intermediate-level waste reaches the radio-toxicity of granitic rock. After approximately 200 000 years, the radioactivity of spent uranium fuel will decay to the level of the uranium used to produce the fuel when it was originally mined (Figure 2). Most high-level waste emits high amounts of radiation over a limited time period, while the proportion of long-lived radioactive substances emits less radiation over a long period of time (see Figure 2).

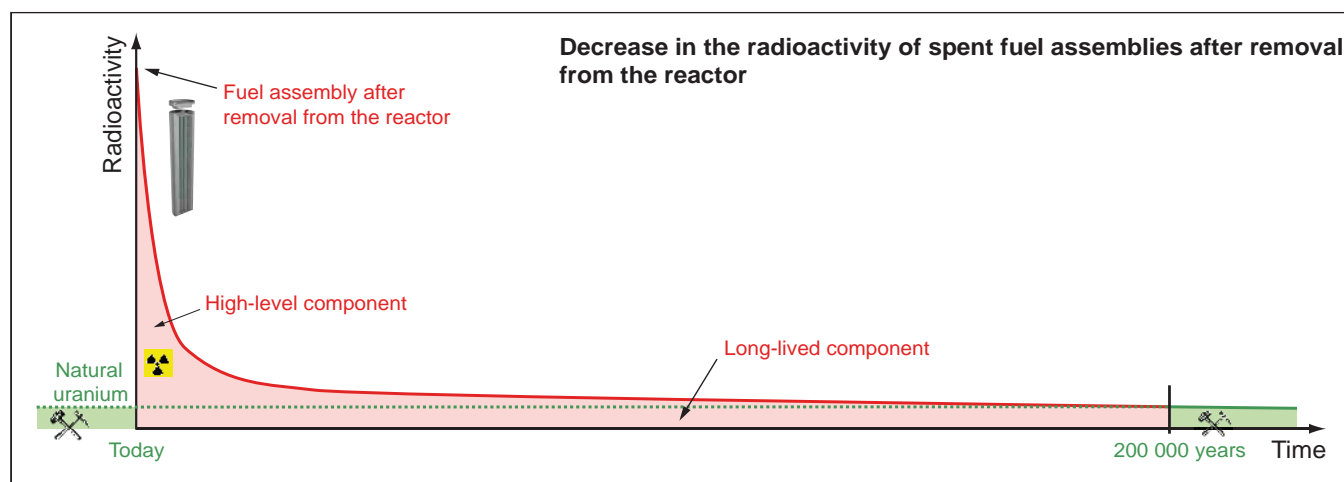
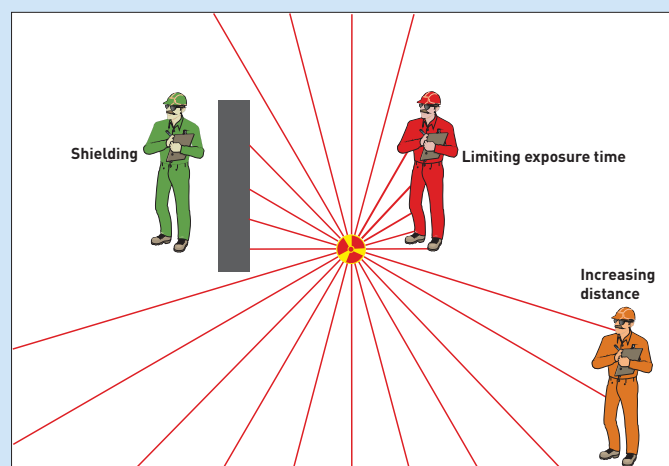


Figure 2

Using radioactive substances – protection against radiation is possible



Radioactive substances (radiation sources) are used in multiple ways. It is necessary, and also possible, to protect against radiation: by limiting the amount of exposure time, by increasing the distance to the radiation source and by using suitable shielding or confining the radioactive substances.

It is particularly important to avoid inhaling or ingesting radioactive substances as far as possible because the dose effect inside the body is much higher than it is externally.