



# HOW THE SWISS REPOSITORY WORKS

**A deep geological repository prevents radioactive substances from reaching the earth’s surface and thus also the human habitat. This is achieved by means of multiple safety barriers. The most important geological barrier is the Opalinus Clay rock.**

Experts worldwide agree that a deep geological repository is the safest option for the long-term disposal of radioactive waste. No one can predict how society will evolve in the future. This does not apply to conditions below ground. Here, time essentially comes to a standstill. From a geological point of view, a containment period of one million years is a manageable time frame. Multiple barriers safely isolate the waste below ground until it is no longer hazardous.

## SAFETY BARRIERS

- 1 **WASTE MATRIX**  
Embedded in fuel pellets or glass, the waste structure itself is already very stable.
- 2 **DISPOSAL CANISTER**  
A thick-walled, steel disposal canister encloses the waste for at least 10,000 years.

- 3 **BENTONITE TUNNEL BACKFILL**  
When the canister eventually develops leaks, the bentonite tunnel backfill will retain the radioactive substances. Bentonite can bind and enclose radioactive substances.
- 4 **OPALINUS CLAY**  
The most important geological barrier will not have to assume its function for several tens of thousands of years. By then, most of the radioactivity will have decayed. The Opalinus Clay is very tight and can bind radioactive substances for a very long time.