713 million years — conversion to peaceful purposes and disposal are better alternatives, but they are not easy technically.

Using the material in power reactor fuel would require an extensive conversion capacity as well as up-to-date technology. Objections to the use of plutonium in reactors have been voiced by German exports who fear unknown risks in the use of mixed-oxide fuel. Enriched uranium can be mixed with natural or depleted uranium until its level of enrichment approaches that of natural uranium. Plutonium can not be easily diluted isotopically; the only choice is to mix it chemically with highly radioactive, long-lived waste and store it. Consuming either material in a reactor is technically possible, but it is more feasible for uranium.

The synergistic effects between measures, technologies and administrations are of high value. They tend to be mutually reinforcing in many different ways.

Technical Synergies

To put into practice and to verify the results of material accountancy, containment and surveillance, all existing safeguards for NPT and Cutoff Convention today make use of four procedures namely:

- design review,
- maintenance of plant operating records,
- reports on plant operation, and
- on-site inspections.

The practical and final procedure is the on-site inspection activity. The on-site inspections should include the following, as well as questions and answers such as in a consultation:

- on-site briefing and tour,
- facilities radioactivity measurements,
- process and environment samplings, and
- records and documents cross-check.

The major breakthrough in on-site inspection for CTBT verification purposes came in 1987, with the Treaty on Intermediate-Range Nuclear Forces (INF). Accompanying this Treaty and forming an integral component of it was a detailed on-site inspection regime encompassing five types of on-site inspection:

- baseline,
- close-out,
- elimination,
- quota or 'short-notice', and
- portal monitoring.