

## 2.3 Other Types of Units Included Under Subpart X

### 2.3.1 Underground Mines, Caves, and Geologic Repositories

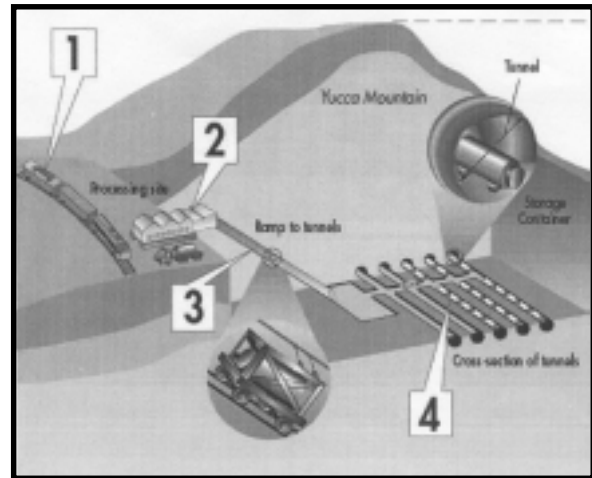
Placement of hazardous waste in subterranean features, such as mines, caves, and salt domes, is regulated under 40 CFR Part 264 Subpart X and constitutes land disposal. Hazardous waste placed in these units must be treated before disposal, in compliance with treatment standards promulgated under the land disposal restrictions (LDR), 40 CFR §268, unless the owner or operator demonstrates that there will be no migration of hazardous constituents from the unit, in accordance with 40 CFR §268.6.

The design considerations for these units are similar to those for landfills. Because of the depth of geologic repositories, it may be extremely difficult to implement groundwater monitoring. The stability of the underground formation also is an important consideration.

At cave and mining sites, infiltration of water should be evaluated carefully. The presence of caves in geologic formations indicates the presence of water within the formation at some time. The permit applicant must demonstrate that ground water is not expected to discharge into the unit for at least the time period of operation of the unit. That requirement can be met by demonstrating that there are no nearby aquifers above the level of the unit, or that aquitards exist above the repository level. Should the applicant be unable to demonstrate that condition, some form of infiltration control must be provided (a requirement similar in concept to that for leachate control for landfills).

### 2.3.2 Biological and Chemical Treatment Units

A permit writer may receive a permit application for a biological or chemical treatment unit that the applicant is attempting to permit under Subpart X. Many of these types of units may be more



*Schematic of geologic repository at Yucca Mountain.*

1. *Canisters of waste, sealed in special casks, are shipped to the site by truck.*
2. *Shipping casks are removed, and the inner tube with the waste is placed in multilayered storage container.*
3. *An automated system sends storage containers underground to the tunnels.*
4. *Containers are stored along the tunnels, on their side.*