companies are demanding that the federal government honor the Nuclear Policy Act of 1982 in which the federal government agreed to provide permanent storage sites.

## Disposal Possibilities

Any site used for disposal of HLW must be far away from population centers and likely to remain geologically stable for thousands of years.

One possibility lies at certain deep spots of the oceans, where, some scientists claim, the seabed is geologically stable as well as devoid of life. Sealed stainless-steel canisters of waste could be packed into rocket-shaped carriers which would bury themselves deep into sediments when they hit the ocean bottom. Opponents say that the canisters have not been proven safe and that, if released, the radioactivity could kill off photosynthetic marine algae that replenish much of the world's oxygen. Proponents claim that the ocean bottom already contains many radioactive minerals and that the radioactivity from all HLWs in existence would not harm marine algae.

Scientists in the United States have considered other proposals as well, but since the Nuclear Policy Act of 1982, most of the attention has focused on the development of a disposal site beneath Yucca Mountain in Nevada. The design of this site includes sloping shafts that lead to a 570 hectare (1400 acre) storage area 300 m deep in the mountain's interior. (See cross-section on previous page.)

The U.S. Department of Energy is committed to developing Yucca Mountain. Engineers believe that it will be 2017 before the site is ready to receive waste. Until that time, there is a plan to begin moving HLW from power plants to a remote interim site in a western state. HLW would be transported to the storage site by truck or rail in sealed, steel canisters placed inside reinforced shipping casks.

## Objections to Yucca Mountain

There are two main sources of opposition to the Yucca Mountain plan. One source maintains that Yucca Mountain has not been proven to be geologically secure, citing evidence that gases emitted at the lowest depth were able to reach the outside air. In addition, the group is concerned about the possibility of collisions or other accidents that might break the casks open while in transport.

The Department of Energy claims it has proven the casks safe. A variety of tests have been performed, subjecting the casks to forces they would undergo in typical truck or train collisions.

The other source of opposition to Yucca Mountain are people who maintain that the costs of overcoming legal challenges will ultimately make the plan financially infeasible. These people believe that the government should stop spending money on the Yucca Mountain project and resume the plan to reprocess waste to make new nuclear fuel.

### Researching the Issue

**1.** Visit your local library to find sources that will help you learn about the policies of your city, county, or state concerning the transport and/or storage of nuclear waste. Write a report describing these policies and include your opinion of them. Give reasons for the stance you take.

**2.** Scientists have considered the possibility of using powerful rockets to blast waste into the sun. Organize a classroom discussion of the benefits and hazards of this method.

**3.** Whenever public officials must decide on a location for a facility that people perceive as hazardous, they must find a way to overcome the NIMBY syndrome. What does *NIMBY* mean? How would you, as a public official, try to overcome this problem?