

Tech 250: Group Assignment

Design a “Keep Out” sign for a nuclear waste dump

As the U.S. Department of Energy prepares to store remains from the nuclear weapons program in underground salt chambers near Carlsbad, New Mexico, it faces a communication problem no society has ever confronted before.

How do you warn people for the next 10,000 years that buried in several miles of chambers some 2,000 feet below the scrub desert is a technological tomb that will unleash lethal doses of radiation upon anyone who disturbs it? The place must be marked in some way so that it sends a crucial message--“pay attention! This place is dangerous and repulsive! Stay away!” It needs to indicate clearly that people should not dig or farm or even enter this square-mile area.

History teaches us that languages change very quickly. Old English (400 years ago) is not understandable today and Latin (1000 years ago) is no longer spoken. How do you communicate a warning over the next 300 generations when the greatest likelihood is that no language spoken today will still be in existence, and when war or natural calamity may have erased all obvious traces of this era's radioactive waste burial site?

The materials the sign is constructed from need to timelessly withstand weather and erosion. They should also not be so attractive that they may be carried off (the great pyramids originally had marble faces that were subsequently dismantled for other uses). Vandalism and theft are major issues—anything too attractive or too portable may be taken away as souvenirs. Also, subsequent regimes tend to tear down the markers of their predecessors.

Your demarcation scheme does not have to be a single sign. It could be a series of elements or barriers, for instance—perhaps your group will decide that redundancy or multiple messages are important. Your design needs to address these communication issues, as well as the durability issues. As a group, decide on your sign concept, then be prepared to draw it on the board and to describe what materials you would use to construct it.