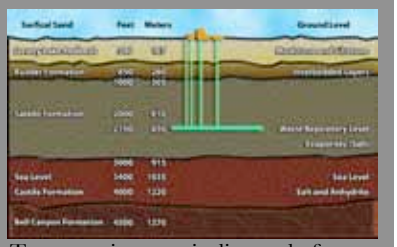
WHY SALT WAS SELECTED AS A DISPOSAL MEDIUM

U.S. Department Of Energy

Waste Isolation Pilot Plant



Transuranic waste is disposed of 2,150 underground.

Underground drifts mined into the salt formation

Government officials and scientists chose the Waste Isolation Pilot Plant (WIPP) site through a selection process that started in the 1950s. At that time, the National Academy of Sciences conducted a nationwide search for geological formations stable enough to contain radioactive wastes for thousands of years. In 1955, after extensive study, salt deposits were recommended as a promising medium for the disposal of radioactive waste. Since then, bedded salt has been one of the leading candidates for the permanent disposal of radioactive waste.

Salt offers the following advantages:

- Most deposits of salt are found in stable geological areas with very little earthquake activity; assuring the stability of a waste repository.
- Salt deposits demonstrate the absence of flowing fresh water that could move waste to the surface. Water, if it had been or were present, would have dissolved the salt beds.
- Salt is relatively easy to mine.
- Rock salt heals its own fractures because of its plastic quality. That is, salt formations will slowly and progressively move in to fill mined areas and safely seal radioactive waste from the environment.

Salt formations at WIPP were deposited in thick beds during the evaporation of an ancient ocean; the Permian Sea. These geologic formations consist mainly of sodium chloride rock, the same substance that, in granular form, is in a salt shaker. The primary salt formation containing the WIPP repository is about 2,000 feet thick, beginning 850 feet below the surface.

Formed about 250 million years ago during the Permian Era (before dinosaurs), large expanses of uninterrupted salt beds provide a setting free from the disturbances of large earthquakes. Proven stability over such a long time span ensures that a repository within the salt formation will remain stable for the time it will take for WIPP-bound waste to lose most of its radioactivity.

At the depth of the WIPP repository, the salt will encapsulate the buried waste in the stable rock over a period of decades and seal the waste from the biosphere. The same natural barriers and self sealing properties that kept the salt intact for millions of years will also safely isolate the waste.

For more information

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