

- increased efficiency in the use of raw materials, energy, water, or other resources
- recycling to reduce the amount of waste and pollutants destined for release, treatment, storage, and disposal.

Pollution prevention is applied to all DOE pollution-generating activities including:

- manufacturing and production operations
- facility operations, maintenance, and transportation
- laboratory research
- research, development, and demonstration,
- weapons dismantlement
- stabilization, deactivation, and decommissioning
- legacy waste and contaminated site cleanup.

## **2.2.6 Decontamination and Decommissioning of Hanford Facilities**

Decontamination is the removal, by chemical or physical methods, of radioactive or hazardous materials from internal and external surfaces of components, systems and structures in a nuclear facility. It is usually the first step toward decommissioning. Decommissioning of a nuclear facility can be defined as the measures taken at the end of the facility's lifetime to assure protection of public health and safety and the environment. Such measures can involve protective storage, entombment, or removal. For protective storage, the facility is left intact after removal of most of the radioactive materials and the appropriate security controls are established to assure public health and safety. Entombment consists of removing radioactive liquids and wastes, sealing all remaining radioactivity within the facility, and establishing appropriate security controls to assure public health and safety. For the removal option, all radioactive materials are removed from the site and the facility is refitted for other use or completely dismantled.

## **2.2.7 Long-Term Stewardship**

Cleanup plans and decisions strive to achieve an appropriate balance between contaminant reduction, use of engineered barriers to isolate residual contaminants and retard their migration, and reliance on institutional controls. Decisions are influenced by several factors:

- risks to members of the public, workers, and the environment
- legal and regulatory requirements
- technical and institutional capabilities and limitations
- current state of scientific knowledge
- values and preferences of interested and affected parties
- costs and related budgetary considerations
- impacts on, and activities at, other sites.