

3.0 Description and Comparison of Alternatives

This section describes the alternatives for storage, treatment, and disposal that are analyzed in this revised draft of the Hanford Site Solid (Radioactive and Hazardous) Waste Program Environmental Impact Statement (HSW EIS) as well as alternatives eliminated from detailed analysis. As required by the Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) of 1969 (40 CFR 1500-1508), a No Action Alternative is also included.

The waste streams and facilities that are considered in this EIS were identified and described in Sections 2.1 and 2.2. Section 3.1 describes the alternatives and the development and selection of alternative groups that are analyzed in detail. Section 3.2 identifies alternatives that were not analyzed in detail. The three waste volumes, Hanford Only, Lower Bound and Upper Bound are presented as alternative waste volume scenarios in Section 3.3. A comparison of the environmental impacts associated with each of the alternative groups is contained in Section 3.4. The major uncertainties in the EIS analysis are identified in Section 3.5. A summary of the estimated costs for the alternative groups is included in Section 3.6. The U.S. Department of Energy (DOE) preferred alternative is discussed in Section 3.7. Detailed descriptions of alternatives, assumptions, waste volumes, and waste stream flowsheets are provided in Appendixes B and C. The Section 2 and the Technical Information Document (TID) prepared by Fluor Hanford, Inc. (FH 2003) to support this EIS should be reviewed when additional information on a facility or waste stream is desired.

3.1 Alternatives Considered in Detail and Their Development

The CEQ regulations direct all federal agencies to use the NEPA process to identify and assess the reasonable alternatives to proposed actions that would avoid or minimize adverse effects of the proposed action on the quality of the human environment. Related CEQ guidance in 46 FR 18026 (Forty Most Asked Questions) states that “When there are potentially a very large number of alternatives, only a reasonable number of examples, covering the full spectrum of alternatives, must be analyzed and compared in the EIS.” In considering the alternatives for this EIS it was quickly recognized that there is a very large number of combinations of the various waste streams, potential waste volumes and individual options for storage, treatment, and disposal. Therefore, the alternatives developed for this EIS were selected to represent the full spectrum of reasonable alternatives.

The individual alternatives for the proposed actions are shown in Figure 3.1. The alternatives are first subdivided into three types of action (storage, treatment, and disposal), then further subdivided into specific alternatives for each of the waste types (LLW, MLLW, TRU waste, ILAW, and melters) as appropriate. It should be noted that no storage or treatment alternatives are shown for ILAW and melters because those activities have been, or are being, evaluated in separate NEPA reviews (DOE and Ecology 1996; 68 FR 1052). Also, no disposal alternatives are shown for TRU waste because DOE previously decided to dispose of TRU waste at the Waste Isolation Pilot Plant (WIPP, DOE 1997a). WIPP alternatives and activities are also not within the scope of this EIS. Disposal alternatives for each of the waste