

## VII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

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Numerous resources are used in constructing and operating major plant facilities. Some of the resource commitments are irreversible and irretrievable. Irreversible commitments are changes set in motion which, at some later time, could not be altered to restore the present order of environmental resources. Irretrievable commitments are the use or consumption of resources that are neither renewable or recoverable for subsequent utilization. Generally, resources which may be irreversibly or irretrievably committed by construction and operation of facilities for any of the alternative plans are: 1) biota destroyed in the vicinity, 2) construction materials that cannot be recovered and recycled, 3) materials that become contaminated with radionuclides and cannot be decontaminated for recycle, 4) materials consumed or reduced to unrecoverable forms of waste, and 5) land areas rendered unfit for their preconstruction uses and/or potential postconstruction uses.

Implementation of any of the alternative plans would involve construction activities on less than 0.5% of the land on the plant site. Although there would be an irretrievable loss of some individuals of the site biota during construction of facilities for any alternative, minimal adverse effects would be expected on the structure or stability of the plant and animal populations inhabiting the plant site. The primary resource commitments are shown in Table VII-1.

If one of the high integrity waste form alternatives is chosen, a waste solidification facility would be required. The facility would be constructed similarly to the two chemical separation facilities presently in use at SRP. At the end of the useful life of the waste solidification facility, it would have to be decommissioned. It is expected that decommissioning the waste solidification facility would require about the same degree of effort as decommissioning one of the chemical separation facilities. Surveillance of the facility would be required until it was dismantled and the area returned to unrestricted use.

If the alternative of placing the liquid waste directly in a bedrock cavern is chosen, some, if not all, of the waste would be irretrievably committed. It would not be possible, with current technology, to retrieve all of the liquid waste from a cavern. Therefore, the underground area of the caverns would be irreversibly committed. The surface area over the caverns could

be used for any purpose with a restriction which would prohibit drilling, mining, or any other action that would breach the caverns.

If the alternative to continue storing high-level waste in tanks is chosen, approximately 50 acres of land will have to be committed every 50 to 100 years to build new tanks to replace the existing tanks. Presumably, however, when the tanks are emptied every 50 to 100 years, they could be decontaminated and dismantled so the site could be used for the next generation of tanks; if this can be accomplished, additional land will not have to be committed for waste tanks.

TABLE VII-1

Irreversible and Irretrievable Commitment of Resources<sup>a</sup>

	<i>Continue Tank Farm Storage</i>	<i>Glass Form to a Federal Repository</i>			<i>Liquid to Bedrock</i>
		<i>Offsite Geological</i>	<i>Onsite Surface</i>	<i>Onsite Geological</i>	
Land, acres	80 <sup>b</sup>	100 <sup>c</sup>	125	100 <sup>d</sup>	10 <sup>d</sup>
Concrete, cubic yards × 10 <sup>3</sup>	375 <sup>e</sup>	100	125	125	25
Carbon steel, tons × 10 <sup>3</sup>	70	20	25	25	5
Stainless steel, tons × 10 <sup>3</sup>	5	10	10	10	1
Electricity, MW-hr × 10 <sup>3</sup>	350 <sup>e</sup>	900	900	900	40
Coal, tons × 10 <sup>3</sup>	150 <sup>e</sup>	600	600	600	10
Cost, billions of 1980 dollars	0.510	3.60	3.75	3.61	0.755

a. Estimates based on experience with similar facilities; assumes 10 years of glass-forming operations.

b. Assumes old tanks are dismantled after they are emptied and new tanks are built in same area.

c. Glass-forming plant only; excludes land for offsite Federal repository.

d. Excludes surface restriction prohibiting drilling or mining.

e. Assumes replacing tanks five times in the first 300 years and maintaining surveillance for 300 years.