

3,600 rail shipments to transport treated HLW canisters from INTEC to a national geologic repository. An additional 130 truck shipments or 26 rail shipments would be needed to transport the HLW canisters produced from electrometallurgical treatment of accumulated sodium-bonded fuel at ANL-W.

5.5 Mitigation Measures

As required by the Council on Environmental Quality, **DOE** considered mitigation measures that could reduce or offset the potential environmental consequences of waste management activities that are not integral to the alternatives analyzed in this EIS. *Under any of the alternatives analyzed in this EIS standard management controls, engineering, safety and health practices, cultural and biological surveys and site restoration requirements would be uniformly implemented. No impact resulting from normal operations under any of the alternatives or options analyzed in this EIS would require a specifically designed mitigation measure. If future connected actions have the potential to lead to impacts beyond those described in Chapter 5 of this EIS, mitigation action planning would begin concurrent with consideration of the need for appropriate National Environmental Policy Act documentation.* Appendix C.8 discusses mitigation measures that could reduce or offset potential impacts at Hanford under the Minimum INEEL Processing Alternative.

5.6 Unavoidable Adverse Environmental Impacts

This section summarizes potential unavoidable adverse environmental impacts associated with the alternatives analyzed in this EIS. Unavoidable impacts are *those* that would occur after implementation of all *standard management controls, engineering, safety and health practices, cultural and biological surveys and site restoration requirements and* feasible miti-

gation measures. *Appendix C.8* contains a discussion of potential unavoidable adverse impacts at Hanford associated with the Minimum INEEL Processing Alternative.

5.6.1 CULTURAL RESOURCES

Existing facilities or facilities constructed under the alternatives analyzed in this EIS as well as the institutional controls that would be necessary following facilities disposition could occupy INEC and adjacent areas for an indefinite period of time. Even after remediation, the appearance and presence of institutional controls would likely preclude the INTEC area from ever being returned to its natural cultural setting or to a condition where the effects of industrial activities were not the most evident feature of the landscape.

5.6.2 AESTHETIC AND SCENIC RESOURCES

INTEC is distant from points along U.S. Highways 20 and 26 where the facility is visible to the public. Changes in the specific configuration of facilities within the INTEC *under the alternatives analyzed in this EIS* would change the viewscape to some degree, but those changes would *not* likely be noticed *by* the casual observer.

Emission rates for pollutants under the waste processing alternatives are not expected to exceed levels currently or previously *emitted* by INEEL sources; therefore, the “visual impact” of these alternatives is already reflected in existing baseline conditions. Nevertheless, conservative visibility screening analysis has been performed to evaluate the relative potential for visibility impacts between alternatives. The views analyzed were at Craters of the Moon Wilderness Area and Fort Hall Indian Reservation. The results of the visibility analysis indicate that emissions *under* the waste processing alternatives *analyzed in this EIS* would not result in deleterious impacts on scenic views at Craters of the Moon Wilderness Area or Fort Hall Indian Reservation (including the view to Middle Butte,

an important cultural resource to the Shoshone-Bannock Tribes). Generators and night lighting associated with facilities at INTEC would increase the visible and audible intrusion to the aesthetic environment in the vicinity of the INTEC but would have little or no impact at the nearest points of public access along public highways.

5.6.3 AIR RESOURCES

Construction or demolition activities would result in short-term increases of particulate emissions in localized areas. Emissions of criteria pollutants, toxic air pollutants, and radionuclides may result in some degradation of air quality *during the period of waste treatment under any of the action alternatives analyzed in this EIS.*

5.6.4 WATER RESOURCES

Water consumption would increase as a result of construction activities, operational activities, facility disposition, and the increased workforce at INTEC. An unavoidable adverse impact of all alternatives would be the risk of migration of *residual* contaminants from contaminated media and areas at INTEC to the Snake River Plain Aquifer. Based on the quantity of untreated material that would be left in place (approximately **1,000,000** gallons of mixed transuranic waste/SBW and **4,400** cubic meters of mixed HLW calcine), the greatest potential for migration of contaminants would occur under the No Action Alternative.

5.6.5 ECOLOGICAL RESOURCES

The entire area *within and adjacent to the INTEC fence line has been cleared of natural vegetation and the habitat it provides is poor compared to the surrounding sagebrush steppe. This condition would exist during the operating period under any of the alternatives analyzed in*

this EIS. After facility disposition most of the area would likely return to near natural conditions of habitat diversity and productivity.

Radionuclide exposure of plant and animal species in the areas adjacent to INTEC could increase slightly due to operations *that would occur under the action alternatives.* Residual radionuclides in soils surrounding INTEC, not related to the proposed action, would still potentially be absorbed by plants and consumed by animals. Although exposure to these materials could theoretically result in injury to individual animals or plants, measurable impacts to populations on or off the INEEL have not occurred and are not expected to occur as a result of *implementing any alternative analyzed in this EIS.*

5.6.6 HEALTH AND SAFETY

The workforce and offsite population would be exposed to low levels of radionuclides under any of the alternatives analyzed in this EIS. Exposure would be highest under the Direct Cement Waste Option of the Non-Separations Alternative. This exposure could potentially lead to less than 1 (**0.43**) latent cancer fatality within the exposed workforce. The highest collective worker dose during disposition of new facilities associated with the waste processing alternatives *could* result in less than one (**0.12**) latent cancer fatality. The highest collective worker dose from disposition of existing facilities associated with HLW management would occur as a result of Clean Closure of the Tank Farm and *could* result in an estimated **0.76** latent cancer fatality. The highest total collective dose to the offsite population from any alternative described in this EIS would occur under the Early Vitrification Option and *could* lead to less than one (8.5×10^{-4}) latent cancer fatality within the population residing within 50 miles of the INTEC. As described in Section 5.2.6, DOE does not expect exposure to noncarcinogenic and carcinogenic toxic air pollutants to result in health impacts.