MARTIN MARIETTA

**Supplemental Results of the Human
Health Risk Analysis for the
U.S. Department of Energy Draft
Waste Management Programmatic
Environmental Impact Statement**

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**Supplemental Results of the Human Health Risk Analysis for
the U.S. Department of Energy Draft Waste Management
Programmatic Environmental Impact Statement**

Oak Ridge National Laboratory
Center for Risk Management

Date Issued—August 1995

OAK RIDGE NATIONAL LABORATORY
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ACRONYMS AND ABBREVIATIONS

ANL-E	Argonne National Laboratory-East
ANL-W	Argonne National Laboratory-West
BNL	Brookhaven National Laboratory
DOE	U.S. Department of Energy
ETEC	Energy Technology Engineering Center
FEMP	Fernald Environmental Management Project
Fermi	Fermi National Accelerator Laboratory
FTE	full-time equivalent
Hanford	Hanford Site
HLW	high-level waste
HW	hazardous waste
INEL	Idaho National Engineering Laboratory
ITRI	Inhalation Toxicology Research Institute
K-25	Oak Ridge K-25 Site
KAPL-K	Knolls Atomic Power Laboratory-Kesselring
KCP	Kansas City Plant
KCP	Kansas City Plant
km	kilometer(s)
LANL	Los Alamos National Laboratory
LBL	Lawrence Berkeley Laboratory
LLMW	low-level mixed waste
LLNL	Lawrence Livermore National Laboratory
LLW	low-level waste
m	meter(s)
MEI	most-exposed individual
mi	mile(s)
Mound	Mound Plant
NRF	Naval Reactors Facility
NTS	Nevada Test Site
ORISE	Oak Ridge Institute for Science and Education
ORNL	Oak Ridge National Laboratory
ORR	Oak Ridge Reservation
Pantex	Pantex Plant
PEIS	U.S. Department of Energy <i>Draft Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste</i>
Pinellas	Pinellas Plant
Ports	Portsmouth Gaseous Diffusion Plant
PPGD	Paducah Gaseous Diffusion Plant
rem	roentgen equivalent man
RFETS	Rocky Flats Environmental Technology Site
SNL-CA	Sandia National Laboratory-California
SNL-NM	Sandia National Laboratories-New Mexico
SRS	Savannah River Site
TRUW	transuranic waste
U of Mo	University of Missouri at Columbia

WVDP	West Valley Demonstration Project
Y-12	Oak Ridge Y-12 Plant
yd	yard(s)
yr	year(s)

1. INTRODUCTION

This report is intended as an information supplement to the human health risk analysis performed for the U.S. Department of Energy's *Draft Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste* (DOE, 1995), hereinafter called the PEIS. This report provides the installation-by-installation human health risk analysis results from which the risk estimate summaries for the PEIS were drawn. Readers should bear in mind that the risk estimates presented here are the result of a *program-wide* (as opposed to site-specific) study. They are based on best available data; systematically applied assumptions; and professional judgment about DOE waste inventories, waste volumes generated annually, currently available treatment and disposal technologies, technical limitations of treatment, and facility capacities across the numerous installations in the DOE complex.

The results in the following sections are presented only to show readers the source material from which the program-wide PEIS risk estimates were derived. These results *must not* be used or construed as rigorous site-level analyses. Refer to the PEIS for a more comprehensive discussion of the receptors, health endpoints, waste management alternatives, data, assumptions, uncertainties, and other elements associated with the PEIS human health risk evaluation.

1.1 Waste Types Analyzed for the PEIS Human Health Risk Analysis

Human health risks were analyzed for the following DOE Waste Management Program waste types:

- High-level waste (HLW)
- Low-level waste (LLW)
- Hazardous waste (HW)
- Transuranic waste (TRUW)
- Low-level mixed waste (LLMW)

The risk analysis for each waste stream and installation was performed based on source terms (estimated rates of contaminant release) provided by Argonne National Laboratory based on waste inventory information and characterization data, waste management module characterization information, and the

PEIS alternative definitions. For more information on the development of the PEIS alternative definitions and source terms, refer to the PEIS.

1.2 Waste Management Alternatives Considered in the PEIS

For each of the waste streams listed above, the Oak Ridge National Laboratory (ORNL) estimated the potential health effects posed by up to four general alternatives for consolidating, processing, storing, and disposing of wastes:

- **No Action:** Wastes are processed and/or disposed at each installation using existing or approved facilities (an approved facility is one for which NEPA review has been completed, appropriate permits received, and the decision made to proceed with the facility).
- **Decentralized:** Wastes are processed and/or disposed at the installation where they were generated.
- **Regionalized:** Wastes are consolidated for processing and/or disposal at regional installations.
- **Centralized:** Wastes are consolidated for processing and/or disposal at one or two installations.

1.3 Receptors Analyzed for Human Health Risks

The following receptors were selected to represent the populations that would most likely be exposed to contaminants during waste management activities or as worst-case receptors for the risk analysis:

- **Offsite (general public) population:** The offsite population within an 80-km (50-mi) radius of each installation.
- **Noninvolved workers:** Onsite employees not directly involved in an installation's waste handling activities.
- **Most-exposed individual (MEI) of the offsite population.**
- **MEI of the noninvolved worker population.**
- **Waste management workers:** Onsite employees working in an installation's waste management facilities, including both the workers directly involved in the waste management process and the construction workers who build the waste management facilities.
- **Hypothetical farm family:** An imaginary family of two adults and two children assumed to live 300 m (approximately 330 yd) downgradient from the center of a waste disposal facility in a period following institutional control. The family engages in farming activities such as growing and

consuming their own crops and livestock, and uses groundwater for drinking and for watering the crops and animals.

A hypothetical intruder scenario (an individual who was assumed to drill a well directly through a waste disposal facility down to the underlying groundwater, mix the contaminated soil drillings into a farm plot, plant food crops in that soil, and eat the harvest) was also evaluated for the PEIS. However, the results of that evaluation are presented in their entirety in the PEIS, so are not included here.

The offsite and noninvolved worker population size and distribution for each installation and the location of each installation's MEIs can be found in the ORNL installation description report (ORNL, 1995a).

Risks to the offsite and noninvolved worker populations were assumed to result from exposure to airborne contaminants, and were estimated only for the first 70 years after an alternative is implemented (i.e., for the lifetime of a person living during the period when treatment and storage activities take place).

The worst-case risk to an individual member of the offsite and noninvolved worker populations was assessed by considering the MEI in each population. In these scenarios, the MEI receives the highest total chemical intake and/or radiation dose for all exposure routes (e.g., inhalation, ingestion, direct exposure) over the person's lifetime.

Worker risks are estimated both for short-term construction activities and for longer term facility operation activities. Worker risk is estimated to be a factor only during the working lifetime, or 50 years, after implementation of an alternative. To make it possible to compare estimated worker exposures to regulatory criteria, worker staffing was expressed as the number of "full-time equivalents" (FTEs). An FTE was assumed to be commensurate to one individual working full-time in a waste management facility. In reality, one FTE could represent several individuals who are not exposed full-time to waste management activities, but whose *cumulative* work time totals one FTE. Because the risk of exposure could be shared by more than one worker working less than full-time in a waste management facility, risks to actual individual workers might be overestimated. When interpreting the

risk analysis results, readers may find it useful to think of an FTE as a hypothetical worker or "worker equivalent." Radiation doses to workers are expressed in FTE-rem instead of person-rem.

The hypothetical farm family and hypothetical intruder represent two worst-case exposure situations that occur at a time when institutional controls (fences, warning signs, land records, etc.) no longer exist, and are analyzed to determine upper-bound exposures only. Details of the intruder scenario can be found in the PEIS and in the ORNL public risk methodology (ORNL, 1995b).

The farm family is assumed to set up residence 300 meters downgradient from the center of the disposal facility. Risks to the hypothetical onsite farm family are evaluated for 143 consecutive 70-year lifetimes (e.g., 10,000 years) in order to determine the upper bound of long-term risks from exposure to groundwater that has been contaminated by the failure of a waste disposal facility. To provide some perspective on the timing of health risks predicted to result from disposal, the risk analysis identifies the 70-year lifetime (out of the 143 lifetimes evaluated) during which the highest exposures, hence, risks, are estimated to occur for the hypothetical farm family. This peak-risk lifetime is referred to in the results as the most-exposed lifetime (MEL) of the farm family.

It was assumed that the offsite population could be exposed to radionuclides, carcinogenic chemicals, and noncarcinogenic toxic chemicals by coming into contact with contaminated air. Noninvolved workers were assumed to be exposed only to atmospheric releases, because institutional controls should ensure that this population is not exposed to contaminated groundwater or surface water through drinking or showering. Both the offsite and noninvolved worker populations were evaluated for dermal exposure to tritium derived from tritiated water in the atmosphere.

Workers directly involved in treatment, storage, and disposal were assumed to be exposed to contaminated air in work areas resulting from fugitive treatment emissions and resuspended surface contamination on waste containers, to receive external exposure from radioactive wastes, and to be at risk of death or injury from industrial-type physical hazards. The worker exposures associated with placing wastes into disposal facilities were assessed separately from treatment risks. Construction workers were assumed to be exposed only to construction-related physical hazards, not to radiological and chemical wastes.

The risks to the hypothetical farm family were analyzed only for the waste streams that will be disposed of in DOE facilities (e.g., LLW and LLMW). It was assumed that the farm family could be exposed directly and indirectly to groundwater contaminated by a release from the disposal facility. Shallow land disposal facilities were assumed to allow immediate releases; tumulus and below-ground vault disposal facilities were assumed to fail and allow releases in 300 and 750 years, respectively. The exposure routes evaluated for the farm family include ingestion of contaminated groundwater and ingestion of crops and animals contaminated by exposure to groundwater.

1.4 Health Effects Evaluated

The following health effects endpoints were evaluated for the PEIS human health risk evaluation:

- Cancer incidence from radionuclides and chemical exposures
- Cancer fatalities from radionuclide exposures only
- Adverse genetic effects caused by exposure to radionuclides
- Hazard index for non-workers (an indicator of the likelihood of noncancer toxicity caused by continuous exposure to nonradioactive waste components)
- Exposure index for workers (an indicator of the likelihood of noncancer toxicity caused by work-day exposure to nonradioactive waste components)
- Waste management worker fatalities and injuries associated with the construction and operation of waste management facilities

For the purposes of this evaluation, the concepts of cancer incidence and cancer fatality refer to what are termed "excess cancers," or cancers that would not otherwise have occurred. These terms encompass all types of cancer and any occurrence(s) of cancer over the lifetime of an individual.

1.5 A Note on Uncertainties in the Risk Evaluation Process

The results of any human health risk assessment are conditional estimates based on multiple assumptions about exposure, toxicity, release of contaminants into the environment, human behavior patterns, and other variables. Therefore, the uncertainties accompanying the analysis should be evaluated to place

these risk estimates in proper perspective. A discussion of the model, scenario, and parameter uncertainties that potentially affect the PEIS human health risk estimates can be found in the PEIS.

1.6 Contents of the Risk Analysis Tables in this Report

The risk analysis results tables in the subsequent sections of this report present a breakdown of the total human health risks associated with managing and disposing of that waste under its waste consolidation alternatives. For each of the waste streams, the tables show:

- The estimated risk to each total offsite and noninvolved worker population, their respective MEIs, and waste management workers of developing cancer, dying of cancer, or suffering adverse genetic effects from exposure to chemicals and/or radionuclides, by alternative and installation.
- The risks to waste management workers of death or injury from physical trauma during waste management activities and the construction of waste management facilities, by alternative and installation (it is assumed that no contaminants are released during these events so physical hazards can be assessed separately from chemical and radiological hazards).
- A hazard index calculation for the offsite and noninvolved worker MEIs, indicating the greatest likelihood of noncancer toxicity from continuous exposure to chemical contaminants, by alternative.
- An exposure index calculation for the most-exposed FTE indicating the greatest likelihood of noncancer toxicity effects from work-day (episodic) exposure to chemical contaminants, by alternative.
- The risks to waste management workers, the most-exposed generation of the hypothetical farm family, and all generations of the farm family from disposal of LLW and LLMW by alternative and installation.

1.7 Reading and Interpreting the Risk and Probability Numbers

The numbers in the results tables are displayed in what is called "scientific" or "exponential" notation and are read as follows.

For the estimates of *risk*, assume that a table contains the entry 4.0E-1 to represent the total estimated operations fatalities to waste management workers incinerating a particular waste under a Centralized alternative. The notation "E-1" indicates the power of 10 by which the leftmost, two-digit number (in

this case, 4.0) is to be multiplied. Therefore, 4.0 is multiplied by 10^{-1} (0.1) to yield 0.4. This result means that it is calculated that nationwide operations for that waste stream under this Centralized alternative will result in an estimated 0.4 fatality during routine incineration operations over the total processing period for that waste (which may be 10, 20, or 30 years, depending on waste type). Note that the estimate in this example is a fraction of 1, that is, a number less than 1. This means that (under the assumptions used in the risk analysis) over the period studied, no waste management workers are estimated to die as a result of routine incinerator operations.

The risks to the offsite and noninvolved worker MEIs are *probabilities*. Probability is expressed as a number between zero and one. If there is no chance that a particular event will occur, it is assigned a probability of zero; if that event is certain to occur, its probability is one. The probability that the offsite and noninvolved worker MEIs will develop or die of cancer is expressed in the same scientific notation as risk.

Assume that a table contains the entry 7.0E-6 to represent the probability that the noninvolved worker MEI for a particular waste stream scenario will develop cancer from exposure to a radioactive waste. The notation 7.0E-6 indicates that 7.0 is multiplied by 10^{-6} (0.000001). Therefore, this probability is 0.000007, which means that there are estimated to be seven chances in 1,000,000 that, over the total waste processing period, the noninvolved worker MEI will develop cancer from exposure to that radioactive waste.

1.8 References

DOE. See U.S. Department of Energy.

ORNL. See Oak Ridge National Laboratory.

Oak Ridge National Laboratory. 1995a. *PEIS Installation Descriptions*, prepared by the Oak Ridge National Laboratory Center for Risk Management for the U.S. Department of Energy.

Oak Ridge National Laboratory. 1995b. *DOE Public and On-Site Population Health Risk Evaluation Methodology for Assessing Risks Associated with Environmental Restoration and Waste Management*, prepared by the Oak Ridge National Laboratory Center for Risk Management for the U.S. Department of Energy.

U.S. Department of Energy. 1995. *Draft Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste*. (No document number issued at this writing.) Washington, D.C.: Office of Environmental Management.

2. HIGH-LEVEL WASTE

2.1 Results of the PEIS Risk Evaluation for Routine HLW Management Alternatives

The following sites were evaluated under the PEIS waste management alternatives for HLW:

- Hanford Site (Hanford), Richland, Washington
- Idaho National Engineering Laboratory (INEL), Idaho Falls, Idaho
- Savannah River Site (SRS), Aiken, South Carolina
- West Valley Demonstration Project (WVDP), West Valley, New York

Five alternatives for the interim storage of canisters of HLW produced by vitrification were analyzed for human health risks:

- No Action
- Decentralized
- Regionalized 1
- Regionalized 2
- Centralized

For each alternative, two different storage scenarios, designated Storage Cases 1 and 2, were analyzed. For more detailed information on the HLW alternatives, see the PEIS.

Tables 2.1–1 through 2.1–20 present the supplemental results of the PEIS human health risk evaluation for HLW.

Table 2.1-1. Risks Associated with Routine Treatment of HLW at Hanford Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
WM Workers 227	Dose (FTE-rem)	2.02E+03	
	Cancer Fatalities	2.06E-01	
	Cancer Incidence	2.82E+00	
	Genetic Effects	1.21E-01	
	Construction Fatalities		6.93E-03
	Construction Injuries		3.02E+00
	Operation Fatalities		1.21E-01
	Operation Injuries		1.03E+02

Table 2.1–2. Risks Associated with Routine Treatment of HLW at INEL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
WM Workers 0	Dose (FTE-rem)	0.00E+00	
	Cancer Fatalities	0.00E+00	
	Cancer Incidence	0.00E+00	
	Genetic Effects	0.00E+00	
	Construction Fatalities		0.00E+00
	Construction Injuries		0.00E+00
	Operation Fatalities		0.00E+00
	Operation Injuries		0.00E+00

Table 2.1–3. Risks Associated with Routine Treatment of HLW at SRS Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
WM Workers 108	Dose (FTE-rem)	2.40E+03	
	Cancer Fatalities	9.59E-01	
	Cancer Incidence	3.36E+00	
	Genetic Effects	1.44E-01	
	Construction Fatalities		1.68E-02
	Construction Injuries		7.34E+00
	Operation Fatalities		3.30E-01
	Operation Injuries		2.81E+02

Table 2.1–4. Risks Associated with Routine Treatment of HLW at WVDP Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
WM Workers 16	Dose (FTE-rem)	1.22E+02	
	Cancer Fatalities	4.86E-02	
	Cancer Incidence	1.70E-01	
	Genetic Effects	7.29E-03	
	Construction Fatalities		0.00E+00
	Construction Injuries		0.00E+00
	Operation Fatalities		1.70E-02
	Operation Injuries		1.45E+01

Table 2.1-5. Risks Associated with Routine Treatment of HLW at Hanford Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
WM Workers 227	Dose (FTE-rem)	3.34E+03	
	Cancer Fatalities	1.33E+00	
	Cancer Incidence	4.67E+00	
	Genetic Effects	2.00E-01	
	Construction Fatalities		1.18E-01
	Construction Injuries		5.14E+01
	Operation Fatalities		3.59E-01
	Operation Injuries		3.05E+02

Table 2.1-6. Risks Associated with Routine Treatment of HLW at INEL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
WM Workers 97	Dose (FTE-rem)	1.09E+03	
	Cancer Fatalities	4.37E-01	
	Cancer Incidence	1.53E+00	
	Genetic Effects	6.56E-02	
	Construction Fatalities		6.73E-02
	Construction Injuries		2.94E+01
	Operation Fatalities		5.98E-02
	Operation Injuries		5.08E+01

Table 2.1-7. Risks Associated with Routine Treatment of HLW at SRS Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
WM Workers 108	Dose (FTE-rem)	2.40E+03	
	Cancer Fatalities	9.59E-01	
	Cancer Incidence	3.36E+00	
	Genetic Effects	1.44E-01	
	Construction Fatalities		1.88E-02
	Construction Injuries		7.34E+00
	Operation Fatalities		3.30E-01
	Operation Injuries		2.81E+02

Table 2.1–8. Risks Associated with Routine Treatment of HLW at WVDP Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
WM Workers 16	Dose (FTE-rem)	1.22E+02	
	Cancer Fatalities	4.86E-02	
	Cancer Incidence	1.70E-01	
	Genetic Effects	7.29E-03	
	Construction Fatalities		0.00E+00
	Construction Injuries		0.00E+00
	Operation Fatalities		1.70E-02
	Operation Injuries		1.45E+01

Table 2.1-9. Risks Associated with Routine Treatment of HLW at Hanford Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
WM Workers 227	Dose (FTE-rem)	3.34E+03	
	Cancer Fatalities	1.33E+00	
	Cancer Incidence	4.67E+00	
	Genetic Effects	2.00E-01	
	Construction Fatalities		1.18E-01
	Construction Injuries		5.14E+01
	Operation Fatalities		3.59E-01
	Operation Injuries		3.05E+02

Table 2.1-10. Risks Associated with Routine Treatment of HLW at INEL Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
WM Workers 97	Dose (FTE-rem)	1.09E+03	
	Cancer Fatalities	4.37E-01	
	Cancer Incidence	1.53E+00	
	Genetic Effects	6.56E-02	
	Construction Fatalities		6.73E-02
	Construction Injuries		2.94E+01
	Operation Fatalities		5.98E-02
	Operation Injuries		5.08E+01

Table 2.1-11. Risks Associated with Routine Treatment of HLW at SRS Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
WM Workers 114	Dose (FTE-rem)	2.56E+03	
	Cancer Fatalities	1.02E+00	
	Cancer Incidence	3.59E+00	
	Genetic Effects	1.54E-01	
	Construction Fatalities		1.85E-02
	Construction Injuries		8.06E+00
	Operation Fatalities		3.48E-01
	Operation Injuries		2.96E+02

Table 2.1-12. Risks Associated with Routine Treatment of HLW at WVDP Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
WM Workers 16	Dose (FTE-rem)	7.80E+01	
	Cancer Fatalities	3.12E-02	
	Cancer Incidence	1.09E-01	
	Genetic Effects	4.68E-03	
	Construction Fatalities		0.00E+00
	Construction Injuries		0.00E+00
	Operation Fatalities		9.21E-03
	Operation Injuries		7.83E+00

Table 2.1-13. Risks Associated with Routine Treatment of HLW at Hanford Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
WM Workers 233	Dose (FTE-rem)	3.44+03	
	Cancer Fatalities	1.38E+00	
	Cancer Incidence	4.82E+00	
	Genetic Effects	2.07E-01	
	Construction Fatalities		1.18E-01
	Construction Injuries		5.14E+01
	Operation Fatalities		3.69E-01
	Operation Injuries		3.13E+02

Table 2.1–14. Risks Associated with Routine Treatment of HLW at INEL Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
WM Workers 97	Dose (FTE-rem)	1.09E+03	
	Cancer Fatalities	4.37E-01	
	Cancer Incidence	1.53E+00	
	Genetic Effects	6.56E-02	
	Construction Fatalities		6.73E-02
	Construction Injuries		2.94E+01
	Operation Fatalities		5.98E-02
	Operation Injuries		5.08E+01

Table 2.1-15. Risks Associated with Routine Treatment of HLW at SRS Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
WM Workers 99	Dose (FTE-rem)	2.40E+03	
	Cancer Fatalities	9.59E-01	
	Cancer Incidence	3.36E+00	
	Genetic Effects	1.44E-01	
	Construction Fatalities		1.68E-02
	Construction Injuries		7.34E+00
	Operation Fatalities		2.62E-01
	Operation Injuries		2.23E+02

Table 2.1–16. Risks Associated with Routine Treatment of HLW at WVDP Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
WM Workers 16	Dose (FTE-rem)	1.08E+02	
	Cancer Fatalities	4.32E-02	
	Cancer Incidence	1.51E-01	
	Genetic Effects	6.48E-03	
	Construction Fatalities		0.00E+00
	Construction Injuries		0.00E+00
	Operation Fatalities		1.46E-02
	Operation Injuries		1.24E+01

Table 2.1-17. Risks Associated with Routine Treatment of HLW at Hanford Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
WM Workers 291	Dose (FTE-rem)	4.34E+03	
	Cancer Fatalities	1.74E+00	
	Cancer Incidence	6.08E+00	
	Genetic Effects	2.61E-01	
	Construction Fatalities		1.35E-01
	Construction Injuries		5.88E+01
	Operation Fatalities		4.44E-01
	Operation Injuries		3.77E+02

Table 2.1-18. Risks Associated with Routine Treatment of HLW at INEL Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
WM Workers 94	Dose (FTE-rem)	1.08E+03	
	Cancer Fatalities	4.33E-01	
	Cancer Incidence	1.51E+00	
	Genetic Effects	6.49E-02	
	Construction Fatalities		6.73E-02
	Construction Injuries		2.94E+01
	Operation Fatalities		5.78E-02
	Operation Injuries		4.92E+01

Table 2.1–19. Risks Associated with Routine Treatment of HLW at SRS Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
WM Workers 99	Dose (FTE-rem)	1.95E+03	
	Cancer Fatalities	7.80E-01	
	Cancer Incidence	2.73E+00	
	Genetic Effects	1.17E-01	
	Construction Fatalities		1.68E-02
	Construction Injuries		7.34E+00
	Operation Fatalities		2.40E-01
	Operation Injuries		2.4E+02

Table 2.1–20. Risks Associated with Routine Treatment of HLW at WVDP Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
WM Workers 16	Dose (FTE-rem)	1.08E+02	
	Cancer Fatalities	4.32E-02	
	Cancer Incidence	1.51E-01	
	Genetic Effects	6.48E-03	
	Construction Fatalities		0.00E+00
	Construction Injuries		0.00E+00
	Operation Fatalities		1.46E-02
	Operation Injuries		1.24E+01

3. LOW-LEVEL WASTE

3.1 Results of the PEIS Risk Evaluation for Routine LLW Management Alternatives

The following sites were evaluated under the PEIS waste management alternatives for LLW:

- Argonne National Laboratory–East (ANL–E), Argonne, Illinois
- Argonne National Laboratory–West (ANL–W), Idaho Falls, Idaho
- Brookhaven National Laboratory (BNL), Brookhaven, New York
- Fernald Environmental Management Project (FEMP), Fernald, Ohio
- Hanford Site (Hanford), Richland, Washington
- Idaho National Engineering Laboratory (INEL), Idaho Falls, Idaho
- Kansas City Plant (KCP), Kansas City, Missouri
- Lawrence Berkeley Laboratory (LBL), Berkeley, California
- Lawrence Livermore National Laboratory (LLNL), Livermore, California
- Los Alamos National Laboratory (LANL), Los Alamos, New Mexico
- Mound Plant (Mound), Miamisburg, Ohio
- Naval Reactors Facility (NRF), Idaho Falls, Idaho
- Nevada Test Site (NTS), Las Vegas, Nevada
- Oak Ridge Institute for Science and Education (ORISE), Oak Ridge, Tennessee
- Oak Ridge Reservation (ORR), Oak Ridge, Tennessee (this installation comprises the Oak Ridge K-25 Site [K-25], the Oak Ridge National Laboratory [ORNL], and the Oak Ridge Y-12 Plant [Y-12])
- Paducah Gaseous Diffusion Plant (PGDP), Paducah, Kentucky
- Pantex Plant (Pantex), Amarillo, Texas
- Pinellas Plant (Pinellas), Largo, Florida
- Portsmouth Gaseous Diffusion Plant (Ports), Piketon, Ohio
- Rocky Flats Environmental Technology Site (RFETS), Golden, Colorado
- Sandia National Laboratories–New Mexico (SNL–NM), Albuquerque, New Mexico
- Sandia National Laboratory–California (SNL–CA), Livermore, California
- Savannah River Site (SRS), Aiken, South Carolina
- West Valley Demonstration Project (WVDP), West Valley, New York

Fourteen alternatives for the management of LLW were analyzed for human health risks:

- No Action
- Decentralized
- Regionalized 1
- Regionalized 2
- Regionalized 3
- Regionalized 4
- Regionalized 5
- Regionalized 6
- Regionalized 7
- Centralized 1
- Centralized 2
- Centralized 3
- Centralized 4
- Centralized 5

Tables 3.1-1 through 3.1-318 present the supplemental results of the PEIS human health risk evaluation for LLW.

Table 3.1-1. Risks Associated with Routine Treatment of LLW at ANL-E Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 5571	Dose (person-rem)	1.9E-5	
	Cancer Fatalities	9.3E-9	
	Cancer Incidence	3.2E-8	
	Genetic Effects	1.9E-9	
Noninvolved Worker MEI	Dose (rem)	1.9E-8	
	Cancer Fatalities	9.4E-12	
	Cancer Incidence	3.2E-11	
	Genetic Effects	1.9E-12	
	Hazard Index		
Offsite Population 7939785	Dose (person-rem)	4.7E-3	
	Cancer Fatalities	2.3E-6	
	Cancer Incidence	8.0E-6	
	Genetic Effects	4.7E-7	
Offsite MEI	Dose (rem)	2.6E-8	
	Cancer Fatalities	1.3E-11	
	Cancer Incidence	4.4E-11	
	Genetic Effects	2.6E-12	
	Hazard Index		
WM Workers 402	Dose (FTE-rem)	110	
	Cancer Fatalities	4.2E-2	
	Cancer Incidence	1.5E-1	
	Genetic Effects	6.4E-3	
	Exposure Index		
	Construction Fatalities		2.2E-2
	Construction Injuries		9.7
	Operation Fatalities		4.9E-2
	Operation Injuries		41

Table 3.1–2. Risks Associated with Routine Treatment of LLW at Hanford Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8674	Dose (person-rem)	3.0E-5	
	Cancer Fatalities	1.5E-8	
	Cancer Incidence	5.1E-8	
	Genetic Effects	3.0E-9	
Noninvolved Worker MEI	Dose (rem)	5.2E-8	
	Cancer Fatalities	2.6E-11	
	Cancer Incidence	8.9E-11	
	Genetic Effects	5.2E-12	
	Hazard Index		
Offsite Population 377645	Dose (person-rem)	8.3E-4	
	Cancer Fatalities	4.2E-7	
	Cancer Incidence	1.4E-6	
	Genetic Effects	8.3E-8	
Offsite MEI	Dose (rem)	1.7E-8	
	Cancer Fatalities	8.6E-12	
	Cancer Incidence	2.9E-11	
	Genetic Effects	1.7E-12	
	Hazard Index		
WM Workers 997	Dose (FTE-rem)	390	
	Cancer Fatalities	1.5E-1	
	Cancer Incidence	5.4E-1	
	Genetic Effects	2.3E-2	
	Exposure Index		
	Construction Fatalities		4.8E-2
	Construction Injuries		21
	Operation Fatalities		1.2E-1
	Operation Injuries		100

Table 3.1–3. Risks Associated with Routine Treatment of LLW at INEL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8451	Dose (person-rem)	8.1E-4	
	Cancer Fatalities	4.0E-7	
	Cancer Incidence	1.4E-6	
	Genetic Effects	8.1E-8	
Noninvolved Worker MEI	Dose (rem)	6.8E-7	
	Cancer Fatalities	3.4E-10	
	Cancer Incidence	1.2E-9	
	Genetic Effects	6.8E-11	
Offsite Population 153061	Dose (person-rem)	2.7E-3	
	Cancer Fatalities	1.4E-6	
	Cancer Incidence	4.7E-6	
	Genetic Effects	2.7E-7	
Offsite MEI	Dose (rem)	3.4E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.8E-10	
	Genetic Effects	3.4E-11	
WM Workers 2169	Dose (FTE-rem)	620	
	Cancer Fatalities	2.5E-1	
	Cancer Incidence	8.7E-1	
	Genetic Effects	3.7E-2	
	Exposure Index		
	Construction Fatalities		1.0E-1
	Construction Injuries		45
	Operation Fatalities		2.6E-1
	Operation Injuries		220

Table 3.1-4. Risks Associated with Routine Treatment of LLW at KAPL-K Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3896	Dose (person-rem)	1.2E-2	
	Cancer Fatalities	6.2E-6	
	Cancer Incidence	2.1E-5	
	Genetic Effects	1.2E-6	
Noninvolved Worker MEI	Dose (rem)	5.8E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.8E-9	
	Genetic Effects	5.8E-10	
	Hazard Index		
Offsite Population 1290172	Dose (person-rem)	1.1	
	Cancer Fatalities	5.3E-4	
	Cancer Incidence	1.8E-3	
	Genetic Effects	1.1E-4	
Offsite MEI	Dose (rem)	2.4E-5	
	Cancer Fatalities	1.2E-8	
	Cancer Incidence	4.0E-8	
	Genetic Effects	2.4E-9	
	Hazard Index		
WM Workers 925	Dose (FTE-rem)	13	
	Cancer Fatalities	5.1E-3	
	Cancer Incidence	1.8E-2	
	Genetic Effects	7.6E-4	
	Exposure Index		
	Construction Fatalities		4.9E-2
	Construction Injuries		21
	Operation Fatalities		1.1E-1
	Operation Injuries		95

Table 3.1–5. Risks Associated with Routine Treatment of LLW at KCP Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 4410	Dose (person-rem)	2.3E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	3.9E-11	
	Genetic Effects	2.3E-12	
Noninvolved Worker MEI	Dose (rem)	1.7E-11	
	Cancer Fatalities	8.0E-15	
	Cancer Incidence	2.8E-14	
	Genetic Effects	0.00	
	Hazard Index		
Offsite Population 1729833	Dose (person-rem)	2.0E-6	
	Cancer Fatalities	1.0E-9	
	Cancer Incidence	3.4E-9	
	Genetic Effects	2.0E-10	
Offsite MEI	Dose (rem)	9.2E-11	
	Cancer Fatalities	4.6E-14	
	Cancer Incidence	1.6E-13	
	Genetic Effects	9.0E-15	
	Hazard Index		
WM Workers 13	Dose (FTE-rem)	8.9E-2	
	Cancer Fatalities	3.6E-5	
	Cancer Incidence	1.3E-4	
	Genetic Effects	5.3E-6	
	Exposure Index		
	Construction Fatalities		7.8E-4
	Construction Injuries		3.4E-1
	Operation Fatalities		1.6E-3
	Operation Injuries		1.3

Table 3.1–6. Risks Associated with Routine Treatment of LLW at K-25 Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3800	Dose (person-rem)	1.5E-7	
	Cancer Fatalities	7.5E-11	
	Cancer Incidence	2.6E-10	
	Genetic Effects	1.5E-11	
Noninvolved Worker MEI	Dose (rem)	1.4E-10	
	Cancer Fatalities	6.9E-14	
	Cancer Incidence	2.3E-13	
	Genetic Effects	1.4E-14	
	Hazard Index		
Offsite Population 871406	Dose (person-rem)	2.6E-6	
	Cancer Fatalities	1.3E-9	
	Cancer Incidence	4.4E-9	
	Genetic Effects	2.6E-10	
Offsite MEI	Dose (rem)	5.7E-11	
	Cancer Fatalities	2.8E-14	
	Cancer Incidence	9.6E-14	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers 708	Dose (FTE-rem)	11	
	Cancer Fatalities	4.4E-3	
	Cancer Incidence	1.5E-2	
	Genetic Effects	6.5E-4	
	Exposure Index		
	Construction Fatalities		3.1E-2
	Construction Injuries		13
	Operation Fatalities		8.6E-2
	Operation Injuries		73

Table 3.1–7. Risks Associated with Routine Treatment of LLW at LANL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 11552	Dose (person-rem)	2.6E-2	
	Cancer Fatalities	1.3E-5	
	Cancer Incidence	4.5E-5	
	Genetic Effects	2.6E-6	
Noninvolved Worker MEI	Dose (rem)	2.0E-5	
	Cancer Fatalities	1.0E-8	
	Cancer Incidence	3.4E-8	
	Genetic Effects	2.0E-9	
Offsite Population 159152	Dose (person-rem)	3.9E-1	
	Cancer Fatalities	1.9E-4	
	Cancer Incidence	6.6E-4	
	Genetic Effects	3.9E-5	
Offsite MEI	Dose (rem)	4.1E-5	
	Cancer Fatalities	2.0E-8	
	Cancer Incidence	6.9E-8	
	Genetic Effects	4.1E-9	
WM Workers 920	Dose (FTE-rem)	440	
	Cancer Fatalities	1.8E-1	
	Cancer Incidence	6.2E-1	
	Genetic Effects	2.7E-2	
	Exposure Index		
	Construction Fatalities		4.5E-2
	Construction Injuries		19
	Operation Fatalities		1.1E-1
	Operation Injuries		95

Table 3.1–8. Risks Associated with Routine Treatment of LLW at LBL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3940	Dose (person-rem)	2.3E-3	
	Cancer Fatalities	1.1E-6	
	Cancer Incidence	3.8E-6	
	Genetic Effects	2.3E-7	
Noninvolved Worker MEI	Dose (rem)	1.8E-6	
	Cancer Fatalities	8.8E-10	
	Cancer Incidence	3.0E-9	
	Genetic Effects	1.8E-10	
	Hazard Index		
Offsite Population 1586829	Dose (person-rem)	1.5	
	Cancer Fatalities	7.6E-4	
	Cancer Incidence	2.6E-3	
	Genetic Effects	1.5E-4	
Offsite MEI	Dose (rem)	2.4E-5	
	Cancer Fatalities	1.2E-8	
	Cancer Incidence	4.1E-8	
	Genetic Effects	2.4E-9	
	Hazard Index		
WM Workers 236	Dose (FTE-rem)	20	
	Cancer Fatalities	8.2E-3	
	Cancer Incidence	2.9E-2	
	Genetic Effects	1.2E-3	
	Exposure Index		
	Construction Fatalities		1.4E-2
	Construction Injuries		6.0
	Operation Fatalities		2.9E-2
	Operation Injuries		24

Table 3.1–9. Risks Associated with Routine Treatment of LLW at LLNL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 9504	Dose (person-rem)	3.2E-5	
	Cancer Fatalities	1.6E-8	
	Cancer Incidence	5.5E-8	
	Genetic Effects	3.2E-9	
Noninvolved Worker MEI	Dose (rem)	1.1E-8	
	Cancer Fatalities	5.5E-12	
	Cancer Incidence	1.9E-11	
	Genetic Effects	1.1E-12	
	Hazard Index		
Offsite Population 6324234	Dose (person-rem)	7.1E-4	
	Cancer Fatalities	3.5E-7	
	Cancer Incidence	1.2E-6	
	Genetic Effects	7.1E-8	
Offsite MEI	Dose (rem)	1.2E-8	
	Cancer Fatalities	5.8E-12	
	Cancer Incidence	2.0E-11	
	Genetic Effects	1.2E-12	
	Hazard Index		
WM Workers 426	Dose (FTE-rem)	2.9	
	Cancer Fatalities	1.2E-3	
	Cancer Incidence	4.1E-3	
	Genetic Effects	1.8E-4	
	Exposure Index		
	Construction Fatalities		1.7E-2
	Construction Injuries		7.5
	Operation Fatalities		5.2E-2
	Operation Injuries		44

Table 3.1-10. Risks Associated with Routine Treatment of LLW at Mound Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1688	Dose (person-rem)	1.5E-6	
	Cancer Fatalities	7.3E-10	
	Cancer Incidence	2.5E-9	
	Genetic Effects	1.5E-10	
Noninvolved Worker MEI	Dose (rem)	2.3E-9	
	Cancer Fatalities	1.2E-12	
	Cancer Incidence	3.9E-12	
	Genetic Effects	2.3E-13	
	Hazard Index		
Offsite Population 3032983	Dose (person-rem)	1.9E-4	
	Cancer Fatalities	9.4E-8	
	Cancer Incidence	3.2E-7	
	Genetic Effects	1.9E-8	
Offsite MEI	Dose (rem)	1.1E-8	
	Cancer Fatalities	5.5E-12	
	Cancer Incidence	1.9E-11	
	Genetic Effects	1.1E-12	
	Hazard Index		
WM Workers 710	Dose (FTE-rem)	5.1	
	Cancer Fatalities	2.1E-3	
	Cancer Incidence	7.2E-3	
	Genetic Effects	3.1E-4	
	Exposure Index		
	Construction Fatalities		4.9E-2
	Construction Injuries		21
	Operation Fatalities		8.6E-2
	Operation Injuries		73

Table 3.1–11. Risks Associated with Routine Treatment of LLW at ORNL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3809	Dose (person-rem)	7.5E-1	
	Cancer Fatalities	3.7E-4	
	Cancer Incidence	1.3E-3	
	Genetic Effects	7.5E-5	
Noninvolved Worker MEI	Dose (rem)	6.8E-4	
	Cancer Fatalities	3.4E-7	
	Cancer Incidence	1.2E-6	
	Genetic Effects	6.8E-8	
	Hazard Index		
Offsite Population 881652	Dose (person-rem)	22	
	Cancer Fatalities	1.1E-2	
	Cancer Incidence	3.8E-2	
	Genetic Effects	2.2E-3	
Offsite MEI	Dose (rem)	7.0E-4	
	Cancer Fatalities	3.5E-7	
	Cancer Incidence	1.2E-6	
	Genetic Effects	7.0E-8	
	Hazard Index		
WM Workers 914	Dose (FTE-rem)	140	
	Cancer Fatalities	5.7E-2	
	Cancer Incidence	2.0E-1	
	Genetic Effects	8.6E-3	
	Exposure Index		
	Construction Fatalities		6.0E-2
	Construction Injuries		26
	Operation Fatalities		1.1E-1
	Operation Injuries		94

Table 3.1-12. Risks Associated with Routine Treatment of LLW at Pantex Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 2825	Dose (person-rem)	4.7E-5	
	Cancer Fatalities	2.3E-8	
	Cancer Incidence	7.9E-8	
	Genetic Effects	4.7E-9	
Noninvolved Worker MEI	Dose (rem)	9.0E-8	
	Cancer Fatalities	4.5E-11	
	Cancer Incidence	1.5E-10	
	Genetic Effects	9.0E-12	
	Hazard Index		
Offsite Population 265185	Dose (person-rem)	3.7E-4	
	Cancer Fatalities	1.8E-7	
	Cancer Incidence	6.3E-7	
	Genetic Effects	3.7E-8	
Offsite MEI	Dose (rem)	3.1E-8	
	Cancer Fatalities	1.6E-11	
	Cancer Incidence	5.3E-11	
	Genetic Effects	3.1E-12	
	Hazard Index		
WM Workers 1040	Dose (FTE-rem)	8.3	
	Cancer Fatalities	3.3E-3	
	Cancer Incidence	1.2E-2	
	Genetic Effects	5.0E-4	
	Exposure Index		
	Construction Fatalities		4.7E-2
	Construction Injuries		21
	Operation Fatalities		1.3E-1
	Operation Injuries		110

Table 3.1–13. Risks Associated with Routine Treatment of LLW at PGDP Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1952	Dose (person-rem)	3.2E-6	
	Cancer Fatalities	1.6E-9	
	Cancer Incidence	5.4E-9	
	Genetic Effects	3.2E-10	
Noninvolved Worker MEI	Dose (rem)	3.9E-9	
	Cancer Fatalities	2.0E-12	
	Cancer Incidence	6.6E-12	
	Genetic Effects	3.9E-13	
	Hazard Index		
Offsite Population 500502	Dose (person-rem)	4.0E-5	
	Cancer Fatalities	2.0E-8	
	Cancer Incidence	6.9E-8	
	Genetic Effects	4.0E-9	
Offsite MEI	Dose (rem)	4.5E-9	
	Cancer Fatalities	2.3E-12	
	Cancer Incidence	7.6E-12	
	Genetic Effects	4.5E-13	
	Hazard Index		
WM Workers 654	Dose (FTE-rem)	5.6	
	Cancer Fatalities	2.2E-3	
	Cancer Incidence	7.8E-3	
	Genetic Effects	3.3E-4	
	Exposure Index		
	Construction Fatalities		3.5E-2
	Construction Injuries		15
	Operation Fatalities		7.9E-2
	Operation Injuries		67

Table 3.1-14. Risks Associated with Routine Treatment of LLW at Pinellas Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1167	Dose (person-rem)	4.2E-8	
	Cancer Fatalities	2.1E-11	
	Cancer Incidence	7.2E-11	
	Genetic Effects	4.2E-12	
Noninvolved Worker MEI	Dose (rem)	8.7E-11	
	Cancer Fatalities	4.4E-14	
	Cancer Incidence	1.5E-13	
	Genetic Effects	9.0E-15	
	Hazard Index		
Offsite Population 2532174	Dose (person-rem)	3.5E-5	
	Cancer Fatalities	1.8E-8	
	Cancer Incidence	6.0E-8	
	Genetic Effects	3.5E-9	
Offsite MEI	Dose (rem)	7.7E-10	
	Cancer Fatalities	3.8E-13	
	Cancer Incidence	1.3E-12	
	Genetic Effects	7.7E-14	
	Hazard Index		
WM Workers 26	Dose (FTE-rem)	1.7E-1	
	Cancer Fatalities	6.9E-5	
	Cancer Incidence	2.4E-4	
	Genetic Effects	1.0E-5	
	Exposure Index		
	Construction Fatalities		1.6E-3
	Construction Injuries		6.8E-1
	Operation Fatalities		3.1E-3
	Operation Injuries		2.6

Table 3.1–15. Risks Associated with Routine Treatment of LLW at Ports Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3226	Dose (person-rem)	3.5E-7	
	Cancer Fatalities	1.8E-10	
	Cancer Incidence	6.0E-10	
	Genetic Effects	3.5E-11	
Noninvolved Worker MEI	Dose (rem)	2.0E-10	
	Cancer Fatalities	9.9E-14	
	Cancer Incidence	3.4E-13	
	Genetic Effects	2.0E-14	
	Hazard Index		
Offsite Population 639602	Dose (person-rem)	3.4E-6	
	Cancer Fatalities	1.7E-9	
	Cancer Incidence	5.7E-9	
	Genetic Effects	3.4E-10	
Offsite MEI	Dose (rem)	4.2E-10	
	Cancer Fatalities	2.1E-13	
	Cancer Incidence	7.2E-13	
	Genetic Effects	4.2E-14	
	Hazard Index		
WM Workers 1450	Dose (FTE-rem)	14	
	Cancer Fatalities	5.6E-3	
	Cancer Incidence	2.0E-2	
	Genetic Effects	8.4E-4	
	Exposure Index		
	Construction Fatalities		6.5E-2
	Construction Injuries		28
	Operation Fatalities		1.8E-1
	Operation Injuries		150

Table 3.1-16. Risks Associated with Routine Treatment of LLW at RFETS Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 6993	Dose (person-rem)	1.2E-5	
	Cancer Fatalities	6.2E-9	
	Cancer Incidence	2.1E-8	
	Genetic Effects	1.2E-9	
Noninvolved Worker MEI	Dose (rem)	7.4E-9	
	Cancer Fatalities	3.7E-12	
	Cancer Incidence	1.3E-11	
	Genetic Effects	7.4E-13	
	Hazard Index		
Offsite Population 2171877	Dose (person-rem)	2.4E-4	
	Cancer Fatalities	1.2E-7	
	Cancer Incidence	4.1E-7	
	Genetic Effects	2.4E-8	
Offsite MEI	Dose (rem)	3.3E-9	
	Cancer Fatalities	1.7E-12	
	Cancer Incidence	5.6E-12	
	Genetic Effects	3.3E-13	
	Hazard Index		
WM Workers 656	Dose (FTE-rem)	4.6	
	Cancer Fatalities	1.9E-3	
	Cancer Incidence	6.5E-3	
	Genetic Effects	2.8E-4	
	Exposure Index		
	Construction Fatalities		4.2E-2
	Construction Injuries		18
	Operation Fatalities		7.9E-2
	Operation Injuries		67

Table 3.1–17. Risks Associated with Routine Treatment of LLW at SNL–NM Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 10576	Dose (person-rem)	5.8E-5	
	Cancer Fatalities	2.9E-8	
	Cancer Incidence	9.9E-8	
	Genetic Effects	5.8E-9	
Noninvolved Worker MEI	Dose (rem)	2.4E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	4.2E-11	
	Genetic Effects	2.4E-12	
	Hazard Index		
Offsite Population 610714	Dose (person-rem)	3.4E-3	
	Cancer Fatalities	1.7E-6	
	Cancer Incidence	5.8E-6	
	Genetic Effects	3.4E-7	
Offsite MEI	Dose (rem)	1.4E-7	
	Cancer Fatalities	6.8E-11	
	Cancer Incidence	2.3E-10	
	Genetic Effects	1.4E-11	
	Hazard Index		
WM Workers 277	Dose (FTE-rem)	1.3	
	Cancer Fatalities	5.1E-4	
	Cancer Incidence	1.8E-3	
	Genetic Effects	7.6E-5	
	Exposure Index		
	Construction Fatalities		1.7E-2
	Construction Injuries		7.3
	Operation Fatalities		3.4E-2
	Operation Injuries		29

Table 3.1-18. Risks Associated with Routine Treatment of LLW at SRS Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 15996	Dose (person-rem)	6.4E-2	
	Cancer Fatalities	3.2E-5	
	Cancer Incidence	1.1E-4	
	Genetic Effects	6.4E-6	
Noninvolved Worker MEI	Dose (rem)	5.7E-5	
	Cancer Fatalities	2.9E-8	
	Cancer Incidence	9.7E-8	
	Genetic Effects	5.7E-9	
	Hazard Index		
Offsite Population 620618	Dose (person-rem)	1.2	
	Cancer Fatalities	5.9E-4	
	Cancer Incidence	2.0E-3	
	Genetic Effects	1.2E-4	
Offsite MEI	Dose (rem)	1.1E-5	
	Cancer Fatalities	5.6E-9	
	Cancer Incidence	1.9E-8	
	Genetic Effects	1.1E-9	
	Hazard Index		
WM Workers 3032	Dose (FTE-rem)	830	
	Cancer Fatalities	3.3E-1	
	Cancer Incidence	1.2	
	Genetic Effects	5.0E-2	
	Exposure Index		
	Construction Fatalities		1.5E-1
	Construction Injuries		66
	Operation Fatalities		3.7E-1
	Operation Injuries		310

Table 3.1–19. Risks Associated with Routine Treatment of LLW at Y-12 Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 7699	Dose (person-rem)	5.5E-6	
	Cancer Fatalities	2.7E-9	
	Cancer Incidence	9.3E-9	
	Genetic Effects	5.5E-10	
Noninvolved Worker MEI	Dose (rem)	1.8E-9	
	Cancer Fatalities	9.0E-13	
	Cancer Incidence	3.1E-12	
	Genetic Effects	1.8E-13	
	Hazard Index		
Offsite Population 895379	Dose (person-rem)	3.9E-5	
	Cancer Fatalities	1.9E-8	
	Cancer Incidence	6.6E-8	
	Genetic Effects	3.9E-9	
Offsite MEI	Dose (rem)	1.4E-9	
	Cancer Fatalities	7.2E-13	
	Cancer Incidence	2.4E-12	
	Genetic Effects	1.4E-13	
	Hazard Index		
WM Workers 1101	Dose (FTE-rem)	16	
	Cancer Fatalities	6.5E-3	
	Cancer Incidence	2.3E-2	
	Genetic Effects	9.7E-4	
	Exposure Index		
	Construction Fatalities		4.8E-2
	Construction Injuries		21
	Operation Fatalities		1.3E-1
	Operation Injuries		110

Table 3.1–20. Risks Associated with Routine Treatment of LLW at ANL-E Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 5571	Dose (person-rem)	2.0E-5	
	Cancer Fatalities	9.8E-9	
	Cancer Incidence	3.3E-8	
	Genetic Effects	2.0E-9	
Noninvolved Worker MEI	Dose (rem)	2.0E-8	
	Cancer Fatalities	1.0E-11	
	Cancer Incidence	3.4E-11	
	Genetic Effects	2.0E-12	
	Hazard Index		
Offsite Population 7939785	Dose (person-rem)	5.0E-3	
	Cancer Fatalities	2.5E-6	
	Cancer Incidence	8.5E-6	
	Genetic Effects	5.0E-7	
Offsite MEI	Dose (rem)	2.8E-8	
	Cancer Fatalities	1.4E-11	
	Cancer Incidence	4.7E-11	
	Genetic Effects	2.8E-12	
	Hazard Index		
WM Workers 224	Dose (FTE-rem)	7.9E1	
	Cancer Fatalities	3.2E-2	
	Cancer Incidence	1.1E-1	
	Genetic Effects	4.8E-3	
	Exposure Index		
	Construction Fatalities		2.4E-2
	Construction Injuries		1.1E1
	Operation Fatalities		2.7E-2
	Operation Injuries		2.3E1

Table 3.1–21. Risks Associated with Routine Treatment of LLW at BNL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3517	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
Noninvolved Worker MEI	Dose (rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
Offsite Population 5738554	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
Offsite MEI	Dose (rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers 0	Dose (FTE-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Exposure Index		
	Construction Fatalities		0.00
	Construction Injuries		0.00
	Operation Fatalities		0.00
	Operation Injuries		0.00

Table 3.1-22. Risks Associated with Routine Treatment of LLW at Hanford Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8674	Dose (person-rem)	1.9E-4	
	Cancer Fatalities	9.6E-8	
	Cancer Incidence	3.3E-7	
	Genetic Effects	1.9E-8	
Noninvolved Worker MEI	Dose (rem)	3.3E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.6E-10	
	Genetic Effects	3.3E-11	
	Hazard Index		
Offsite Population 377645	Dose (person-rem)	5.4E-3	
	Cancer Fatalities	2.7E-6	
	Cancer Incidence	9.1E-6	
	Genetic Effects	5.4E-7	
Offsite MEI	Dose (rem)	1.1E-7	
	Cancer Fatalities	5.5E-11	
	Cancer Incidence	1.9E-10	
	Genetic Effects	1.1E-11	
	Hazard Index		
WM Workers 577	Dose (FTE-rem)	2.5E2	
	Cancer Fatalities	9.9E-2	
	Cancer Incidence	3.5E-1	
	Genetic Effects	1.5E-2	
	Exposure Index		
	Construction Fatalities		5.3E-2
	Construction Injuries		2.3E1
	Operation Fatalities		7.0E-2
	Operation Injuries		5.9E1

Table 3.1–23. Risks Associated with Routine Treatment of LLW at INEL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8451	Dose (person-rem)	4.8E-4	
	Cancer Fatalities	2.4E-7	
	Cancer Incidence	8.1E-7	
	Genetic Effects	4.8E-8	
Noninvolved Worker MEI	Dose (rem)	4.0E-7	
	Cancer Fatalities	2.0E-10	
	Cancer Incidence	6.8E-10	
	Genetic Effects	4.0E-11	
	Hazard Index		
Offsite Population 153061	Dose (person-rem)	1.6E-3	
	Cancer Fatalities	8.0E-7	
	Cancer Incidence	2.7E-6	
	Genetic Effects	1.6E-7	
Offsite MEI	Dose (rem)	2.0E-7	
	Cancer Fatalities	9.9E-11	
	Cancer Incidence	3.4E-10	
	Genetic Effects	2.0E-11	
	Hazard Index		
WM Workers 677	Dose (FTE-rem)	4.1E2	
	Cancer Fatalities	1.7E-1	
	Cancer Incidence	5.8E-1	
	Genetic Effects	2.5E-2	
	Exposure Index		
	Construction Fatalities		7.2E-2
	Construction Injuries		3.1E1
	Operation Fatalities		8.2E-2
	Operation Injuries		7.0E1

Table 3.1-24. Risks Associated with Routine Treatment of LLW at KAPL-K Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3896	Dose (person-rem)	1.2E-2	
	Cancer Fatalities	6.2E-6	
	Cancer Incidence	2.1E-5	
	Genetic Effects	1.2E-6	
Noninvolved Worker MEI	Dose (rem)	5.8E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.8E-9	
	Genetic Effects	5.8E-10	
	Hazard Index		
Offsite Population 1290172	Dose (person-rem)	1.1	
	Cancer Fatalities	5.3E-4	
	Cancer Incidence	1.8E-3	
	Genetic Effects	1.1E-4	
Offsite MEI	Dose (rem)	2.4E-5	
	Cancer Fatalities	1.2E-8	
	Cancer Incidence	4.0E-8	
	Genetic Effects	2.4E-9	
	Hazard Index		
WM Workers 650	Dose (FTE-rem)	1.4E1	
	Cancer Fatalities	5.8E-3	
	Cancer Incidence	2.0E-2	
	Genetic Effects	8.7E-4	
	Exposure Index		
	Construction Fatalities		6.2E-2
	Construction Injuries		2.7E1
	Operation Fatalities		7.9E-2
	Operation Injuries		6.7E1

Table 3.1–25. Risks Associated with Routine Treatment of LLW at KCP Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 4410	Dose (person-rem)	2.4E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	4.1E-11	
	Genetic Effects	2.4E-12	
Noninvolved Worker MEI	Dose (rem)	1.7E-11	
	Cancer Fatalities	9.0E-15	
	Cancer Incidence	2.9E-14	
	Genetic Effects	0.00	
	Hazard Index		
Offsite Population 1729833	Dose (person-rem)	2.1E-6	
	Cancer Fatalities	1.1E-9	
	Cancer Incidence	3.6E-9	
	Genetic Effects	2.1E-10	
Offsite MEI	Dose (rem)	9.7E-11	
	Cancer Fatalities	4.8E-14	
	Cancer Incidence	1.6E-13	
	Genetic Effects	1.0E-14	
	Hazard Index		
WM Workers 11	Dose (FTE-rem)	7.3E-2	
	Cancer Fatalities	2.9E-5	
	Cancer Incidence	1.0E-4	
	Genetic Effects	4.4E-6	
	Exposure Index		
	Construction Fatalities		1.3E-3
	Construction Injuries		5.6E-1
	Operation Fatalities		1.3E-3
	Operation Injuries		1.1

Table 3.1-26. Risks Associated with Routine Treatment of LLW at K-25 Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3800	Dose (person-rem)	1.0E-6	
	Cancer Fatalities	5.0E-10	
	Cancer Incidence	1.7E-9	
	Genetic Effects	1.0E-10	
Noninvolved Worker MEI	Dose (rem)	9.2E-10	
	Cancer Fatalities	4.6E-13	
	Cancer Incidence	1.6E-12	
	Genetic Effects	9.2E-14	
	Hazard Index		
Offsite Population 871406	Dose (person-rem)	1.7E-5	
	Cancer Fatalities	8.6E-9	
	Cancer Incidence	2.9E-8	
	Genetic Effects	1.7E-9	
Offsite MEI	Dose (rem)	3.8E-10	
	Cancer Fatalities	1.9E-13	
	Cancer Incidence	6.4E-13	
	Genetic Effects	3.8E-14	
	Hazard Index		
WM Workers 582	Dose (FTE-rem)	8.8	
	Cancer Fatalities	3.5E-3	
	Cancer Incidence	1.2E-2	
	Genetic Effects	5.3E-4	
	Exposure Index		
	Construction Fatalities		5.0E-2
	Construction Injuries		2.2E1
	Operation Fatalities		7.0E-2
	Operation Injuries		6.0E1

Table 3.1–27. Risks Associated with Routine Treatment of LLW at LANL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 11552	Dose (person-rem)	2.8E-2	
	Cancer Fatalities	1.4E-5	
	Cancer Incidence	4.8E-5	
	Genetic Effects	2.8E-6	
Noninvolved Worker MEI	Dose (rem)	2.2E-5	
	Cancer Fatalities	1.1E-8	
	Cancer Incidence	3.7E-8	
	Genetic Effects	2.2E-9	
	Hazard Index		
Offsite Population 159152	Dose (person-rem)	4.2E-1	
	Cancer Fatalities	2.1E-4	
	Cancer Incidence	7.1E-4	
	Genetic Effects	4.2E-5	
Offsite MEI	Dose (rem)	4.4E-5	
	Cancer Fatalities	2.2E-8	
	Cancer Incidence	7.5E-8	
	Genetic Effects	4.4E-9	
	Hazard Index		
WM Workers 653	Dose (FTE-rem)	3.5E2	
	Cancer Fatalities	1.4E-1	
	Cancer Incidence	4.9E-1	
	Genetic Effects	2.1E-2	
	Exposure Index		
	Construction Fatalities		5.7E-2
	Construction Injuries		2.5E1
	Operation Fatalities		7.9E-2
	Operation Injuries		6.7E1

Table 3.1-28. Risks Associated with Routine Treatment of LLW at LBL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3940	Dose (person-rem)	5.4E-2	
	Cancer Fatalities	2.7E-5	
	Cancer Incidence	9.1E-5	
	Genetic Effects	5.4E-6	
Noninvolved Worker MEI	Dose (rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.1E-8	
	Genetic Effects	4.2E-9	
	Hazard Index		
Offsite Population 1586829	Dose (person-rem)	3.6E1	
	Cancer Fatalities	1.8E-2	
	Cancer Incidence	6.2E-2	
	Genetic Effects	3.6E-3	
Offsite MEI	Dose (rem)	5.7E-4	
	Cancer Fatalities	2.9E-7	
	Cancer Incidence	9.7E-7	
	Genetic Effects	5.7E-8	
	Hazard Index		
WM Workers 174	Dose (FTE-rem)	1.9E1	
	Cancer Fatalities	7.6E-3	
	Cancer Incidence	2.7E-2	
	Genetic Effects	1.1E-3	
	Exposure Index		
	Construction Fatalities		2.2E-2
	Construction Injuries		9.6
	Operation Fatalities		2.1E-2
	Operation Injuries		1.8E1

Table 3.1–29. Risks Associated with Routine Treatment of LLW at LLNL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 9504	Dose (person-rem)	2.8E-1	
	Cancer Fatalities	1.4E-4	
	Cancer Incidence	4.7E-4	
	Genetic Effects	2.8E-5	
Noninvolved Worker MEI	Dose (rem)	9.4E-5	
	Cancer Fatalities	4.7E-8	
	Cancer Incidence	1.6E-7	
	Genetic Effects	9.4E-9	
	Hazard Index		
Offsite Population 6324234	Dose (person-rem)	2.0E1	
	Cancer Fatalities	1.0E-2	
	Cancer Incidence	3.4E-2	
	Genetic Effects	2.0E-3	
Offsite MEI	Dose (rem)	3.3E-4	
	Cancer Fatalities	1.6E-7	
	Cancer Incidence	5.5E-7	
	Genetic Effects	3.3E-8	
	Hazard Index		
WM Workers 191	Dose (FTE-rem)	6.3	
	Cancer Fatalities	2.5E-3	
	Cancer Incidence	8.9E-3	
	Genetic Effects	3.8E-4	
	Exposure Index		
	Construction Fatalities		2.4E-2
	Construction Injuries		1.1E1
	Operation Fatalities		2.3E-2
	Operation Injuries		2.0E1

Table 3.1–30. Risks Associated with Routine Treatment of LLW at Mound Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1688	Dose (person-rem)	1.6E-6	
	Cancer Fatalities	8.0E-10	
	Cancer Incidence	2.7E-9	
	Genetic Effects	1.6E-10	
Noninvolved Worker MEI	Dose (rem)	2.5E-9	
	Cancer Fatalities	1.3E-12	
	Cancer Incidence	4.3E-12	
	Genetic Effects	2.5E-13	
	Hazard Index		
Offsite Population 3032983	Dose (person-rem)	2.1E-4	
	Cancer Fatalities	1.0E-7	
	Cancer Incidence	3.5E-7	
	Genetic Effects	2.1E-8	
Offsite MEI	Dose (rem)	1.2E-8	
	Cancer Fatalities	5.9E-12	
	Cancer Incidence	2.0E-11	
	Genetic Effects	1.2E-12	
	Hazard Index		
WM Workers 435	Dose (FTE-rem)	3.3	
	Cancer Fatalities	1.3E-3	
	Cancer Incidence	4.7E-3	
	Genetic Effects	2.0E-4	
	Exposure Index		
	Construction Fatalities		5.1E-2
	Construction Injuries		2.2E1
	Operation Fatalities		5.3E-2
	Operation Injuries		4.5E1

Table 3.1–31. Risks Associated with Routine Treatment of LLW at ORNL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3809	Dose (person-rem)	3.8E-4	
	Cancer Fatalities	1.9E-7	
	Cancer Incidence	6.4E-7	
	Genetic Effects	3.8E-8	
Noninvolved Worker MEI	Dose (rem)	3.4E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.9E-10	
	Genetic Effects	3.4E-11	
	Hazard Index		
Offsite Population 881652	Dose (person-rem)	1.1E-2	
	Cancer Fatalities	5.7E-6	
	Cancer Incidence	1.9E-5	
	Genetic Effects	1.1E-6	
Offsite MEI	Dose (rem)	3.5E-7	
	Cancer Fatalities	1.8E-10	
	Cancer Incidence	6.0E-10	
	Genetic Effects	3.5E-11	
	Hazard Index		
WM Workers 444	Dose (FTE-rem)	6.5E1	
	Cancer Fatalities	2.6E-2	
	Cancer Incidence	9.1E-2	
	Genetic Effects	3.9E-3	
	Exposure Index		
	Construction Fatalities		6.7E-2
	Construction Injuries		2.9E1
	Operation Fatalities		5.4E-2
	Operation Injuries		4.6E1

Table 3.1-32. Risks Associated with Routine Treatment of LLW at Pantex Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 2825	Dose (person-rem)	1.8E-5	
	Cancer Fatalities	8.8E-9	
	Cancer Incidence	3.0E-8	
	Genetic Effects	1.8E-9	
Noninvolved Worker MEI	Dose (rem)	3.4E-8	
	Cancer Fatalities	1.7E-11	
	Cancer Incidence	5.7E-11	
	Genetic Effects	3.4E-12	
	Hazard Index		
Offsite Population 265185	Dose (person-rem)	1.7E-4	
	Cancer Fatalities	8.3E-8	
	Cancer Incidence	2.8E-7	
	Genetic Effects	1.7E-8	
Offsite MEI	Dose (rem)	1.4E-8	
	Cancer Fatalities	7.1E-12	
	Cancer Incidence	2.4E-11	
	Genetic Effects	1.4E-12	
	Hazard Index		
WM Workers 446	Dose (FTE-rem)	6.3	
	Cancer Fatalities	2.5E-3	
	Cancer Incidence	8.9E-3	
	Genetic Effects	3.8E-4	
	Exposure Index		
	Construction Fatalities		4.1E-2
	Construction Injuries		1.8E1
	Operation Fatalities		5.4E-2
	Operation Injuries		4.6E1

Table 3.1–33. Risks Associated with Routine Treatment of LLW at PGDP Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1952	Dose (person-rem)	5.1E-5	
	Cancer Fatalities	2.5E-8	
	Cancer Incidence	8.6E-8	
	Genetic Effects	5.1E-9	
Noninvolved Worker MEI	Dose (rem)	6.2E-8	
	Cancer Fatalities	3.1E-11	
	Cancer Incidence	1.1E-10	
	Genetic Effects	6.2E-12	
	Hazard Index		
Offsite Population 500502	Dose (person-rem)	6.4E-4	
	Cancer Fatalities	3.2E-7	
	Cancer Incidence	1.1E-6	
	Genetic Effects	6.4E-8	
Offsite MEI	Dose (rem)	7.2E-8	
	Cancer Fatalities	3.6E-11	
	Cancer Incidence	1.2E-10	
	Genetic Effects	7.2E-12	
	Hazard Index		
WM Workers 501	Dose (FTE-rem)	3.7	
	Cancer Fatalities	1.5E-3	
	Cancer Incidence	5.2E-3	
	Genetic Effects	2.2E-4	
	Exposure Index		
	Construction Fatalities		5.0E-2
	Construction Injuries		2.2E1
	Operation Fatalities		6.1E-2
	Operation Injuries		5.2E1

Table 3.1–34. Risks Associated with Routine Treatment of LLW at Pinellas Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1167	Dose (person-rem)	4.2E-8	
	Cancer Fatalities	2.1E-11	
	Cancer Incidence	7.2E-11	
	Genetic Effects	4.2E-12	
Noninvolved Worker MEI	Dose (rem)	8.7E-11	
	Cancer Fatalities	4.4E-14	
	Cancer Incidence	1.5E-13	
	Genetic Effects	9.0E-15	
	Hazard Index		
Offsite Population 2532174	Dose (person-rem)	3.5E-5	
	Cancer Fatalities	1.8E-8	
	Cancer Incidence	6.0E-8	
	Genetic Effects	3.5E-9	
Offsite MEI	Dose (rem)	7.7E-10	
	Cancer Fatalities	3.8E-13	
	Cancer Incidence	1.3E-12	
	Genetic Effects	7.7E-14	
	Hazard Index		
WM Workers 21	Dose (FTE-rem)	1.4E-1	
	Cancer Fatalities	5.6E-5	
	Cancer Incidence	2.0E-4	
	Genetic Effects	8.4E-6	
	Exposure Index		
	Construction Fatalities		2.5E-3
	Construction Injuries		1.1
	Operation Fatalities		2.5E-3
	Operation Injuries		2.1

Table 3.1–35. Risks Associated with Routine Treatment of LLW at Ports Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3226	Dose (person-rem)	5.1E-8	
	Cancer Fatalities	2.6E-11	
	Cancer Incidence	8.7E-11	
	Genetic Effects	5.1E-12	
Noninvolved Worker MEI	Dose (rem)	2.9E-11	
	Cancer Fatalities	1.4E-14	
	Cancer Incidence	4.9E-14	
	Genetic Effects	0.00	
	Hazard Index		
Offsite Population 639602	Dose (person-rem)	4.9E-7	
	Cancer Fatalities	2.4E-10	
	Cancer Incidence	8.3E-10	
	Genetic Effects	4.9E-11	
Offsite MEI	Dose (rem)	6.2E-11	
	Cancer Fatalities	3.1E-14	
	Cancer Incidence	1.1E-13	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers 730	Dose (FTE-rem)	1.1E1	
	Cancer Fatalities	4.6E-3	
	Cancer Incidence	1.6E-2	
	Genetic Effects	6.8E-4	
	Exposure Index		
	Construction Fatalities		6.1E-2
	Construction Injuries		2.7E1
	Operation Fatalities		8.8E-2
	Operation Injuries		7.5E1

Table 3.1–36. Risks Associated with Routine Treatment of LLW at RFETS Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 6993	Dose (person-rem)	3.7E-5	
	Cancer Fatalities	1.8E-8	
	Cancer Incidence	6.2E-8	
	Genetic Effects	3.7E-9	
Noninvolved Worker MEI	Dose (rem)	2.2E-8	
	Cancer Fatalities	1.1E-11	
	Cancer Incidence	3.7E-11	
	Genetic Effects	2.2E-12	
	Hazard Index		
Offsite Population 2171877	Dose (person-rem)	7.1E-4	
	Cancer Fatalities	3.6E-7	
	Cancer Incidence	1.2E-6	
	Genetic Effects	7.1E-8	
Offsite MEI	Dose (rem)	9.7E-9	
	Cancer Fatalities	4.9E-12	
	Cancer Incidence	1.7E-11	
	Genetic Effects	9.7E-13	
	Hazard Index		
WM Workers 298	Dose (FTE-rem)	2.9	
	Cancer Fatalities	1.1E-3	
	Cancer Incidence	4.0E-3	
	Genetic Effects	1.7E-4	
	Exposure Index		
	Construction Fatalities		3.4E-2
	Construction Injuries		1.5E1
	Operation Fatalities		3.6E-2
	Operation Injuries		3.1E1

Table 3.1–37. Risks Associated with Routine Treatment of LLW at SNL–NM Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 10576	Dose (person-rem)	6.0E-5	
	Cancer Fatalities	3.0E-8	
	Cancer Incidence	1.0E-7	
	Genetic Effects	6.0E-9	
Noninvolved Worker MEI	Dose (rem)	2.5E-8	
	Cancer Fatalities	1.3E-11	
	Cancer Incidence	4.3E-11	
	Genetic Effects	2.5E-12	
	Hazard Index		
Offsite Population 610714	Dose (person-rem)	3.6E-3	
	Cancer Fatalities	1.8E-6	
	Cancer Incidence	6.1E-6	
	Genetic Effects	3.6E-7	
Offsite MEI	Dose (rem)	1.4E-7	
	Cancer Fatalities	7.1E-11	
	Cancer Incidence	2.4E-10	
	Genetic Effects	1.4E-11	
	Hazard Index		
WM Workers 187	Dose (FTE-rem)	5.4E1	
	Cancer Fatalities	2.2E-2	
	Cancer Incidence	7.6E-2	
	Genetic Effects	3.3E-3	
	Exposure Index		
	Construction Fatalities		2.1E-2
	Construction Injuries		9.1
	Operation Fatalities		2.3E-2
	Operation Injuries		1.9E1

Table 3.1–38. Risks Associated with Routine Treatment of LLW at SRS Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 15996	Dose (person-rem)	2.6E-3	
	Cancer Fatalities	1.3E-6	
	Cancer Incidence	4.4E-6	
	Genetic Effects	2.6E-7	
Noninvolved Worker MEI	Dose (rem)	2.3E-6	
	Cancer Fatalities	1.1E-9	
	Cancer Incidence	3.8E-9	
	Genetic Effects	2.3E-10	
	Hazard Index		
Offsite Population 620618	Dose (person-rem)	3.7E-2	
	Cancer Fatalities	1.9E-5	
	Cancer Incidence	6.3E-5	
	Genetic Effects	3.7E-6	
Offsite MEI	Dose (rem)	3.5E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.9E-10	
	Genetic Effects	3.5E-11	
	Hazard Index		
WM Workers 1986	Dose (FTE-rem)	5.7E2	
	Cancer Fatalities	2.3E-1	
	Cancer Incidence	7.9E-1	
	Genetic Effects	3.4E-2	
	Exposure Index		
	Construction Fatalities		2.0E-1
	Construction Injuries		8.6E1
	Operation Fatalities		2.4E-1
	Operation Injuries		2.0E2

Table 3.1–39. Risks Associated with Routine Treatment of LLW at WVDP Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 960	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects		
Noninvolved Worker MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index		
Offsite Population 1698391	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects		
Offsite MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index		
WM Workers 275	Dose (FTE-rem) Cancer Fatalities Cancer Incidence Genetic Effects Exposure Index Construction Fatalities Construction Injuries Operation Fatalities Operation Injuries	2.8 1.1E-3 3.9E-3 1.7E-4	2.4E-2 1.1E1 3.3E-2 2.8E1

Table 3.1-40. Risks Associated with Routine Treatment of LLW at Y-12 Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 7699	Dose (person-rem)	5.7E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.7E-9	
	Genetic Effects	5.7E-10	
Noninvolved Worker MEI	Dose (rem)	1.9E-9	
	Cancer Fatalities	9.4E-13	
	Cancer Incidence	3.2E-12	
	Genetic Effects	1.9E-13	
	Hazard Index		
Offsite Population 895379	Dose (person-rem)	4.1E-5	
	Cancer Fatalities	2.0E-8	
	Cancer Incidence	6.9E-8	
	Genetic Effects	4.1E-9	
Offsite MEI	Dose (rem)	1.5E-9	
	Cancer Fatalities	7.5E-13	
	Cancer Incidence	2.6E-12	
	Genetic Effects	1.5E-13	
	Hazard Index		
WM Workers 853	Dose (FTE-rem)	1.3E1	
	Cancer Fatalities	5.3E-3	
	Cancer Incidence	1.8E-2	
	Genetic Effects	7.9E-4	
	Exposure Index		
	Construction Fatalities		7.1E-2
	Construction Injuries		3.1E1
	Operation Fatalities		1.0E-1
	Operation Injuries		8.8E1

Table 3.1-41. Risks Associated with Routine Treatment of LLW at ANL-E Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 5571	Dose (person-rem)	2.0E-5	
	Cancer Fatalities	9.8E-9	
	Cancer Incidence	3.3E-8	
	Genetic Effects	2.0E-9	
Noninvolved Worker MEI	Dose (rem)	2.0E-8	
	Cancer Fatalities	1.0E-11	
	Cancer Incidence	3.4E-11	
	Genetic Effects	2.0E-12	
	Hazard Index		
Offsite Population 7939785	Dose (person-rem)	5.0E-3	
	Cancer Fatalities	2.5E-6	
	Cancer Incidence	8.5E-6	
	Genetic Effects	5.0E-7	
Offsite MEI	Dose (rem)	2.8E-8	
	Cancer Fatalities	1.4E-11	
	Cancer Incidence	4.7E-11	
	Genetic Effects	2.8E-12	
	Hazard Index		
WM Workers 224	Dose (FTE-rem)	79	
	Cancer Fatalities	3.2E-2	
	Cancer Incidence	1.1E-1	
	Genetic Effects	4.8E-3	
	Exposure Index		
	Construction Fatalities		2.4E-2
	Construction Injuries		11
	Operation Fatalities		2.7E-2
	Operation Injuries		23

Table 3.1-42. Risks Associated with Routine Treatment of LLW at Hanford Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8674	Dose (person-rem)	1.9E-4	
	Cancer Fatalities	9.6E-8	
	Cancer Incidence	3.3E-7	
	Genetic Effects	1.9E-8	
Noninvolved Worker MEI	Dose (rem)	3.3E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.6E-10	
	Genetic Effects	3.3E-11	
	Hazard Index		
Offsite Population 377645	Dose (person-rem)	5.4E-3	
	Cancer Fatalities	2.7E-6	
	Cancer Incidence	9.1E-6	
	Genetic Effects	5.4E-7	
Offsite MEI	Dose (rem)	1.1E-7	
	Cancer Fatalities	5.5E-11	
	Cancer Incidence	1.9E-10	
	Genetic Effects	1.1E-11	
	Hazard Index		
WM Workers 577	Dose (FTE-rem)	250	
	Cancer Fatalities	9.9E-2	
	Cancer Incidence	3.5E-1	
	Genetic Effects	1.5E-2	
	Exposure Index		
	Construction Fatalities		5.3E-2
	Construction Injuries		23
	Operation Fatalities		7.0E-2
	Operation Injuries		59

Table 3.1–43. Risks Associated with Routine Treatment of LLW at INEL Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8451	Dose (person-rem)	4.8E-4	
	Cancer Fatalities	2.4E-7	
	Cancer Incidence	8.1E-7	
	Genetic Effects	4.8E-8	
Noninvolved Worker MEI	Dose (rem)	4.0E-7	
	Cancer Fatalities	2.0E-10	
	Cancer Incidence	6.8E-10	
	Genetic Effects	4.0E-11	
Offsite Population 153061	Dose (person-rem)	1.6E-3	
	Cancer Fatalities	8.0E-7	
	Cancer Incidence	2.7E-6	
	Genetic Effects	1.6E-7	
Offsite MEI	Dose (rem)	2.0E-7	
	Cancer Fatalities	9.9E-11	
	Cancer Incidence	3.4E-10	
	Genetic Effects	2.0E-11	
WM Workers 677	Dose (FTE-rem)	410	
	Cancer Fatalities	1.7E-1	
	Cancer Incidence	5.8E-1	
	Genetic Effects	2.5E-2	
	Exposure Index		
	Construction Fatalities		7.2E-2
	Construction Injuries		31
	Operation Fatalities		8.2E-2
	Operation Injuries		70

Table 3.1–44. Risks Associated with Routine Treatment of LLW at KAPL–K Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3896	Dose (person-rem)	1.2E-2	
	Cancer Fatalities	6.2E-6	
	Cancer Incidence	2.1E-5	
	Genetic Effects	1.2E-6	
Noninvolved Worker MEI	Dose (rem)	5.8E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.8E-9	
	Genetic Effects	5.8E-10	
	Hazard Index		
Offsite Population 1290172	Dose (person-rem)	1.1	
	Cancer Fatalities	5.3E-4	
	Cancer Incidence	1.8E-3	
	Genetic Effects	1.1E-4	
Offsite MEI	Dose (rem)	2.4E-5	
	Cancer Fatalities	1.2E-8	
	Cancer Incidence	4.0E-8	
	Genetic Effects	2.4E-9	
	Hazard Index		
WM Workers 650	Dose (FTE-rem)	14	
	Cancer Fatalities	5.8E-3	
	Cancer Incidence	2.0E-2	
	Genetic Effects	8.7E-4	
	Exposure Index		
	Construction Fatalities		6.2E-2
	Construction Injuries		27
	Operation Fatalities		7.9E-2
	Operation Injuries		67

Table 3.1–45. Risks Associated with Routine Treatment of LLW at KCP Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 4410	Dose (person-rem)	2.4E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	4.1E-11	
	Genetic Effects	2.4E-12	
Noninvolved Worker MEI	Dose (rem)	1.7E-11	
	Cancer Fatalities	9.0E-15	
	Cancer Incidence	2.9E-14	
	Genetic Effects	0.00	
	Hazard Index		
Offsite Population 1729833	Dose (person-rem)	2.1E-6	
	Cancer Fatalities	1.1E-9	
	Cancer Incidence	3.6E-9	
	Genetic Effects	2.1E-10	
Offsite MEI	Dose (rem)	9.7E-11	
	Cancer Fatalities	4.8E-14	
	Cancer Incidence	1.6E-13	
	Genetic Effects	1.0E-14	
	Hazard Index		
WM Workers 11	Dose (FTE-rem)	7.3E-2	
	Cancer Fatalities	2.9E-5	
	Cancer Incidence	1.0E-4	
	Genetic Effects	4.4E-6	
	Exposure Index		
	Construction Fatalities		1.3E-3
	Construction Injuries		5.6E-1
	Operation Fatalities		1.3E-3
	Operation Injuries		1.1

Table 3.1-46. Risks Associated with Routine Treatment of LLW at K-25 Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3800	Dose (person-rem)	1.0E-6	
	Cancer Fatalities	5.0E-10	
	Cancer Incidence	1.7E-9	
	Genetic Effects	1.0E-10	
Noninvolved Worker MEI	Dose (rem)	9.2E-10	
	Cancer Fatalities	4.6E-13	
	Cancer Incidence	1.6E-12	
	Genetic Effects	9.2E-14	
	Hazard Index		
Offsite Population 871406	Dose (person-rem)	1.7E-5	
	Cancer Fatalities	8.6E-9	
	Cancer Incidence	2.9E-8	
	Genetic Effects	1.7E-9	
Offsite MEI	Dose (rem)	3.8E-10	
	Cancer Fatalities	1.9E-13	
	Cancer Incidence	6.4E-13	
	Genetic Effects	3.8E-14	
	Hazard Index		
WM Workers 582	Dose (FTE-rem)	8.8	
	Cancer Fatalities	3.5E-3	
	Cancer Incidence	1.2E-2	
	Genetic Effects	5.3E-4	
	Exposure Index		
	Construction Fatalities		5.0E-2
	Construction Injuries		22
	Operation Fatalities		7.0E-2
	Operation Injuries		60

Table 3.1-47. Risks Associated with Routine Treatment of LLW at LANL Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 11552	Dose (person-rem)	2.8E-2	
	Cancer Fatalities	1.4E-5	
	Cancer Incidence	4.8E-5	
	Genetic Effects	2.8E-6	
Noninvolved Worker MEI	Dose (rem)	2.2E-5	
	Cancer Fatalities	1.1E-8	
	Cancer Incidence	3.7E-8	
	Genetic Effects	2.2E-9	
	Hazard Index		
Offsite Population 159152	Dose (person-rem)	4.2E-1	
	Cancer Fatalities	2.1E-4	
	Cancer Incidence	7.1E-4	
	Genetic Effects	4.2E-5	
Offsite MEI	Dose (rem)	4.4E-5	
	Cancer Fatalities	2.2E-8	
	Cancer Incidence	7.5E-8	
	Genetic Effects	4.4E-9	
	Hazard Index		
WM Workers 653	Dose (FTE-rem)	350	
	Cancer Fatalities	1.4E-1	
	Cancer Incidence	4.9E-1	
	Genetic Effects	2.1E-2	
	Exposure Index		
	Construction Fatalities		5.7E-2
	Construction Injuries		25
	Operation Fatalities		7.9E-2
	Operation Injuries		67

Table 3.1-48. Risks Associated with Routine Treatment of LLW at LBL Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3940	Dose (person-rem)	5.4E-2	
	Cancer Fatalities	2.7E-5	
	Cancer Incidence	9.1E-5	
	Genetic Effects	5.4E-6	
Noninvolved Worker MEI	Dose (rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.1E-8	
	Genetic Effects	4.2E-9	
	Hazard Index		
Offsite Population 1586829	Dose (person-rem)	36	
	Cancer Fatalities	1.8E-2	
	Cancer Incidence	6.2E-2	
	Genetic Effects	3.6E-3	
Offsite MEI	Dose (rem)	5.7E-4	
	Cancer Fatalities	2.9E-7	
	Cancer Incidence	9.7E-7	
	Genetic Effects	5.7E-8	
	Hazard Index		
WM Workers 174	Dose (FTE-rem)	19	
	Cancer Fatalities	7.6E-3	
	Cancer Incidence	2.7E-2	
	Genetic Effects	1.1E-3	
	Exposure Index		
	Construction Fatalities		2.2E-2
	Construction Injuries		9.6
	Operation Fatalities		2.1E-2
	Operation Injuries		18

Table 3.1-49. Risks Associated with Routine Treatment of LLW at LLNL Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 9504	Dose (person-rem)	2.8E-1	
	Cancer Fatalities	1.4E-4	
	Cancer Incidence	4.7E-4	
	Genetic Effects	2.8E-5	
Noninvolved Worker MEI	Dose (rem)	9.4E-5	
	Cancer Fatalities	4.7E-8	
	Cancer Incidence	1.6E-7	
	Genetic Effects	9.4E-9	
	Hazard Index		
Offsite Population 6324234	Dose (person-rem)	20	
	Cancer Fatalities	1.0E-2	
	Cancer Incidence	3.4E-2	
	Genetic Effects	2.0E-3	
Offsite MEI	Dose (rem)	3.3E-4	
	Cancer Fatalities	1.6E-7	
	Cancer Incidence	5.5E-7	
	Genetic Effects	3.3E-8	
	Hazard Index		
WM Workers 191	Dose (FTE-rem)	6.3	
	Cancer Fatalities	2.5E-3	
	Cancer Incidence	8.9E-3	
	Genetic Effects	3.8E-4	
	Exposure Index		
	Construction Fatalities		2.4E-2
	Construction Injuries		11
	Operation Fatalities		2.3E-2
	Operation Injuries		20

Table 3.1-50. Risks Associated with Routine Treatment of LLW at Mound Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1688	Dose (person-rem)	1.6E-6	
	Cancer Fatalities	8.0E-10	
	Cancer Incidence	2.7E-9	
	Genetic Effects	1.6E-10	
Noninvolved Worker MEI	Dose (rem)	2.5E-9	
	Cancer Fatalities	1.3E-12	
	Cancer Incidence	4.3E-12	
	Genetic Effects	2.5E-13	
	Hazard Index		
Offsite Population 3032983	Dose (person-rem)	2.1E-4	
	Cancer Fatalities	1.0E-7	
	Cancer Incidence	3.5E-7	
	Genetic Effects	2.1E-8	
Offsite MEI	Dose (rem)	1.2E-8	
	Cancer Fatalities	5.9E-12	
	Cancer Incidence	2.0E-11	
	Genetic Effects	1.2E-12	
	Hazard Index		
WM Workers 435	Dose (FTE-rem)	3.3	
	Cancer Fatalities	1.3E-3	
	Cancer Incidence	4.7E-3	
	Genetic Effects	2.0E-4	
	Exposure Index		
	Construction Fatalities		5.1E-2
	Construction Injuries		22
	Operation Fatalities		5.3E-2
	Operation Injuries		45

Table 3.1-51. Risks Associated with Routine Treatment of LLW at ORNL Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3809	Dose (person-rem)	3.8E-4	
	Cancer Fatalities	1.9E-7	
	Cancer Incidence	6.4E-7	
	Genetic Effects	3.8E-8	
Noninvolved Worker MEI	Dose (rem)	3.4E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.9E-10	
	Genetic Effects	3.4E-11	
	Hazard Index		
Offsite Population 881652	Dose (person-rem)	1.1E-2	
	Cancer Fatalities	5.7E-6	
	Cancer Incidence	1.9E-5	
	Genetic Effects	1.1E-6	
Offsite MEI	Dose (rem)	3.5E-7	
	Cancer Fatalities	1.8E-10	
	Cancer Incidence	6.0E-10	
	Genetic Effects	3.5E-11	
	Hazard Index		
WM Workers 444	Dose (FTE-rem)	65	
	Cancer Fatalities	2.6E-2	
	Cancer Incidence	9.1E-2	
	Genetic Effects	3.9E-3	
	Exposure Index		
	Construction Fatalities		6.7E-2
	Construction Injuries		29
	Operation Fatalities		5.4E-2
	Operation Injuries		46

Table 3.1–52. Risks Associated with Routine Treatment of LLW at Pantex Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 2825	Dose (person-rem)	1.8E-5	
	Cancer Fatalities	8.8E-9	
	Cancer Incidence	3.0E-8	
	Genetic Effects	1.8E-9	
Noninvolved Worker MEI	Dose (rem)	3.4E-8	
	Cancer Fatalities	1.7E-11	
	Cancer Incidence	5.7E-11	
	Genetic Effects	3.4E-12	
	Hazard Index		
Offsite Population 265185	Dose (person-rem)	1.7E-4	
	Cancer Fatalities	8.3E-8	
	Cancer Incidence	2.8E-7	
	Genetic Effects	1.7E-8	
Offsite MEI	Dose (rem)	1.4E-8	
	Cancer Fatalities	7.1E-12	
	Cancer Incidence	2.4E-11	
	Genetic Effects	1.4E-12	
	Hazard Index		
WM Workers 446	Dose (FTE-rem)	6.3	
	Cancer Fatalities	2.5E-3	
	Cancer Incidence	8.9E-3	
	Genetic Effects	3.8E-4	
	Exposure Index		
	Construction Fatalities		4.1E-2
	Construction Injuries		18
	Operation Fatalities		5.4E-2
	Operation Injuries		46

Table 3.1–53. Risks Associated with Routine Treatment of LLW at PGDP Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1952	Dose (person-rem)	5.1E-5	
	Cancer Fatalities	2.5E-8	
	Cancer Incidence	8.6E-8	
	Genetic Effects	5.1E-9	
Noninvolved Worker MEI	Dose (rem)	6.2E-8	
	Cancer Fatalities	3.1E-11	
	Cancer Incidence	1.1E-10	
	Genetic Effects	6.2E-12	
	Hazard Index		
Offsite Population 500502	Dose (person-rem)	6.4E-4	
	Cancer Fatalities	3.2E-7	
	Cancer Incidence	1.1E-6	
	Genetic Effects	6.4E-8	
Offsite MEI	Dose (rem)	7.2E-8	
	Cancer Fatalities	3.6E-11	
	Cancer Incidence	1.2E-10	
	Genetic Effects	7.2E-12	
	Hazard Index		
WM Workers 501	Dose (FTE-rem)	3.7	
	Cancer Fatalities	1.5E-3	
	Cancer Incidence	5.2E-3	
	Genetic Effects	2.2E-4	
	Exposure Index		
	Construction Fatalities		5.0E-2
	Construction Injuries		22
	Operation Fatalities		6.1E-2
	Operation Injuries		52

Table 3.1–54. Risks Associated with Routine Treatment of LLW at Pinellas Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1167	Dose (person-rem)	4.2E-8	
	Cancer Fatalities	2.1E-11	
	Cancer Incidence	7.2E-11	
	Genetic Effects	4.2E-12	
Noninvolved Worker MEI	Dose (rem)	8.7E-11	
	Cancer Fatalities	4.4E-14	
	Cancer Incidence	1.5E-13	
	Genetic Effects	9.0E-15	
	Hazard Index		
Offsite Population 2532174	Dose (person-rem)	3.5E-5	
	Cancer Fatalities	1.8E-8	
	Cancer Incidence	6.0E-8	
	Genetic Effects	3.5E-9	
Offsite MEI	Dose (rem)	7.7E-10	
	Cancer Fatalities	3.8E-13	
	Cancer Incidence	1.3E-12	
	Genetic Effects	7.7E-14	
	Hazard Index		
WM Workers 21	Dose (FTE-rem)	1.4E-1	
	Cancer Fatalities	5.6E-5	
	Cancer Incidence	2.0E-4	
	Genetic Effects	8.4E-6	
	Exposure Index		
	Construction Fatalities		2.5E-3
	Construction Injuries		1.1
	Operation Fatalities		2.5E-3
	Operation Injuries		2.1

Table 3.1-55. Risks Associated with Routine Treatment of LLW at Ports Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3226	Dose (person-rem)	5.1E-8	
	Cancer Fatalities	2.6E-11	
	Cancer Incidence	8.7E-11	
	Genetic Effects	5.1E-12	
Noninvolved Worker MEI	Dose (rem)	2.9E-11	
	Cancer Fatalities	1.4E-14	
	Cancer Incidence	4.9E-14	
	Genetic Effects	0.00	
	Hazard Index		
Offsite Population 639602	Dose (person-rem)	4.9E-7	
	Cancer Fatalities	2.4E-10	
	Cancer Incidence	8.3E-10	
	Genetic Effects	4.9E-11	
Offsite MEI	Dose (rem)	6.2E-11	
	Cancer Fatalities	3.1E-14	
	Cancer Incidence	1.1E-13	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers 730	Dose (FTE-rem)	11	
	Cancer Fatalities	4.6E-3	
	Cancer Incidence	1.6E-2	
	Genetic Effects	6.8E-4	
	Exposure Index		
	Construction Fatalities		6.1E-2
	Construction Injuries		27
	Operation Fatalities		8.8E-2
	Operation Injuries		75

Table 3.1–56. Risks Associated with Routine Treatment of LLW at RFETS Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 6993	Dose (person-rem)	3.7E-5	
	Cancer Fatalities	1.8E-8	
	Cancer Incidence	6.2E-8	
	Genetic Effects	3.7E-9	
Noninvolved Worker MEI	Dose (rem)	2.2E-8	
	Cancer Fatalities	1.1E-11	
	Cancer Incidence	3.7E-11	
	Genetic Effects	2.2E-12	
	Hazard Index		
Offsite Population 2171877	Dose (person-rem)	7.1E-4	
	Cancer Fatalities	3.6E-7	
	Cancer Incidence	1.2E-6	
	Genetic Effects	7.1E-8	
Offsite MEI	Dose (rem)	9.7E-9	
	Cancer Fatalities	4.9E-12	
	Cancer Incidence	1.7E-11	
	Genetic Effects	9.7E-13	
	Hazard Index		
WM Workers 298	Dose (FTE-rem)	2.9	
	Cancer Fatalities	1.1E-3	
	Cancer Incidence	4.0E-3	
	Genetic Effects	1.7E-4	
	Exposure Index		
	Construction Fatalities		3.4E-2
	Construction Injuries		15
	Operation Fatalities		3.6E-2
	Operation Injuries		31

Table 3.1–57. Risks Associated with Routine Treatment of LLW at SNL–NM Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 10576	Dose (person-rem)	6.1E-5	
	Cancer Fatalities	3.0E-8	
	Cancer Incidence	1.0E-7	
	Genetic Effects	6.1E-9	
Noninvolved Worker MEI	Dose (rem)	2.6E-8	
	Cancer Fatalities	1.3E-11	
	Cancer Incidence	4.3E-11	
	Genetic Effects	2.6E-12	
	Hazard Index		
Offsite Population 610714	Dose (person-rem)	3.6E-3	
	Cancer Fatalities	1.8E-6	
	Cancer Incidence	6.2E-6	
	Genetic Effects	3.6E-7	
Offsite MEI	Dose (rem)	1.4E-7	
	Cancer Fatalities	7.2E-11	
	Cancer Incidence	2.4E-10	
	Genetic Effects	1.4E-11	
	Hazard Index		
WM Workers 210	Dose (FTE-rem)	1.0	
	Cancer Fatalities	4.1E-4	
	Cancer Incidence	1.5E-3	
	Genetic Effects	6.2E-5	
	Exposure Index		
	Construction Fatalities		2.5E-2
	Construction Injuries		11
	Operation Fatalities		2.5E-2
	Operation Injuries		22

Table 3.1–58. Risks Associated with Routine Treatment of LLW at SRS Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 15996	Dose (person-rem)	2.6E-3	
	Cancer Fatalities	1.3E-6	
	Cancer Incidence	4.4E-6	
	Genetic Effects	2.6E-7	
Noninvolved Worker MEI	Dose (rem)	2.3E-6	
	Cancer Fatalities	1.1E-9	
	Cancer Incidence	3.8E-9	
	Genetic Effects	2.3E-10	
	Hazard Index		
Offsite Population 620618	Dose (person-rem)	3.7E-2	
	Cancer Fatalities	1.9E-5	
	Cancer Incidence	6.3E-5	
	Genetic Effects	3.7E-6	
Offsite MEI	Dose (rem)	3.5E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.9E-10	
	Genetic Effects	3.5E-11	
	Hazard Index		
WM Workers 1986	Dose (FTE-rem)	570	
	Cancer Fatalities	2.3E-1	
	Cancer Incidence	7.9E-1	
	Genetic Effects	3.4E-2	
	Exposure Index		
	Construction Fatalities		2.0E-1
	Construction Injuries		86
	Operation Fatalities		2.4E-1
	Operation Injuries		200

Table 3.1–59. Risks Associated with Routine Treatment of LLW at Y-12 Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 7699	Dose (person-rem)	5.7E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.7E-9	
	Genetic Effects	5.7E-10	
Noninvolved Worker MEI	Dose (rem)	1.9E-9	
	Cancer Fatalities	9.4E-13	
	Cancer Incidence	3.2E-12	
	Genetic Effects	1.9E-13	
	Hazard Index		
Offsite Population 895379	Dose (person-rem)	4.1E-5	
	Cancer Fatalities	2.0E-8	
	Cancer Incidence	6.9E-8	
	Genetic Effects	4.1E-9	
Offsite MEI	Dose (rem)	1.5E-9	
	Cancer Fatalities	7.5E-13	
	Cancer Incidence	2.6E-12	
	Genetic Effects	1.5E-13	
	Hazard Index		
WM Workers 853	Dose (FTE-rem)	13	
	Cancer Fatalities	5.3E-3	
	Cancer Incidence	1.8E-2	
	Genetic Effects	7.9E-4	
	Exposure Index		
	Construction Fatalities		7.1E-2
	Construction Injuries		31
	Operation Fatalities		1.0E-1
	Operation Injuries		88

Table 3.1–60. Risks Associated with Routine Treatment of LLW at ANL-E Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 5571	Dose (person-rem)	2.0E-5	
	Cancer Fatalities	9.8E-9	
	Cancer Incidence	3.3E-8	
	Genetic Effects	2.0E-9	
Noninvolved Worker MEI	Dose (rem)	2.0E-8	
	Cancer Fatalities	1.0E-11	
	Cancer Incidence	3.4E-11	
	Genetic Effects	2.0E-12	
	Hazard Index		
Offsite Population 7939785	Dose (person-rem)	5.0E-3	
	Cancer Fatalities	2.5E-6	
	Cancer Incidence	8.5E-6	
	Genetic Effects	5.0E-7	
Offsite MEI	Dose (rem)	2.8E-8	
	Cancer Fatalities	1.4E-11	
	Cancer Incidence	4.7E-11	
	Genetic Effects	2.8E-12	
	Hazard Index		
WM Workers 224	Dose (FTE-rem)	7.9E1	
	Cancer Fatalities	3.2E-2	
	Cancer Incidence	1.1E-1	
	Genetic Effects	4.8E-3	
	Exposure Index		
	Construction Fatalities		2.4E-2
	Construction Injuries		1.1E1
	Operation Fatalities		2.7E-2
	Operation Injuries		2.3E1

Table 3.1-61. Risks Associated with Routine Treatment of LLW at FEMP Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 2456	Dose (person-rem)	1.0	
	Cancer Fatalities	5.2E-4	
	Cancer Incidence	1.8E-3	
	Genetic Effects	1.0E-4	
Noninvolved Worker MEI	Dose (rem)	9.0E-4	
	Cancer Fatalities	4.5E-7	
	Cancer Incidence	1.5E-6	
	Genetic Effects	9.0E-8	
	Hazard Index		
Offsite Population 2764589	Dose (person-rem)	4.6E2	
	Cancer Fatalities	2.3E-1	
	Cancer Incidence	7.9E-1	
	Genetic Effects	4.6E-2	
Offsite MEI	Dose (rem)	8.8E-3	
	Cancer Fatalities	4.4E-6	
	Cancer Incidence	1.5E-5	
	Genetic Effects	8.8E-7	
	Hazard Index		
WM Workers 461	Dose (FTE-rem)	1.6E1	
	Cancer Fatalities	6.5E-3	
	Cancer Incidence	2.3E-2	
	Genetic Effects	9.7E-4	
	Exposure Index		
	Construction Fatalities		5.3E-2
	Construction Injuries		2.3E1
	Operation Fatalities		5.6E-2
	Operation Injuries		4.7E1

Table 3.1–62. Risks Associated with Routine Treatment of LLW at Hanford Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8674	Dose (person-rem)	2.6E-4	
	Cancer Fatalities	1.3E-7	
	Cancer Incidence	4.4E-7	
	Genetic Effects	2.6E-8	
Noninvolved Worker MEI	Dose (rem)	4.4E-7	
	Cancer Fatalities	2.2E-10	
	Cancer Incidence	7.5E-10	
	Genetic Effects	4.4E-11	
	Hazard Index		
Offsite Population 377645	Dose (person-rem)	7.1E-3	
	Cancer Fatalities	3.6E-6	
	Cancer Incidence	1.2E-5	
	Genetic Effects	7.1E-7	
Offsite MEI	Dose (rem)	1.5E-7	
	Cancer Fatalities	7.3E-11	
	Cancer Incidence	2.5E-10	
	Genetic Effects	1.5E-11	
	Hazard Index		
WM Workers 1569	Dose (FTE-rem)	4.9E2	
	Cancer Fatalities	2.0E-1	
	Cancer Incidence	6.9E-1	
	Genetic Effects	3.0E-2	
	Exposure Index		
	Construction Fatalities		1.3E-1
	Construction Injuries		5.6E1
	Operation Fatalities		1.9E-1
	Operation Injuries		1.6E2

Table 3.1-63. Risks Associated with Routine Treatment of LLW at INEL Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8451	Dose (person-rem)	8.1E-4	
	Cancer Fatalities	4.0E-7	
	Cancer Incidence	1.4E-6	
	Genetic Effects	8.1E-8	
Noninvolved Worker MEI	Dose (rem)	6.7E-7	
	Cancer Fatalities	3.4E-10	
	Cancer Incidence	1.1E-9	
	Genetic Effects	6.7E-11	
	Hazard Index		
Offsite Population 153061	Dose (person-rem)	2.7E-3	
	Cancer Fatalities	1.4E-6	
	Cancer Incidence	4.6E-6	
	Genetic Effects	2.7E-7	
Offsite MEI	Dose (rem)	3.3E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.7E-10	
	Genetic Effects	3.3E-11	
	Hazard Index		
WM Workers 1809	Dose (FTE-rem)	4.2E2	
	Cancer Fatalities	1.7E-1	
	Cancer Incidence	5.8E-1	
	Genetic Effects	2.5E-2	
	Exposure Index		
	Construction Fatalities		1.5E-1
	Construction Injuries		6.7E1
	Operation Fatalities		2.2E-1
	Operation Injuries		1.9E2

Table 3.1–64. Risks Associated with Routine Treatment of LLW at KAPL–K Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3896	Dose (person-rem)	1.2E-2	
	Cancer Fatalities	6.2E-6	
	Cancer Incidence	2.1E-5	
	Genetic Effects	1.2E-6	
Noninvolved Worker MEI	Dose (rem)	5.8E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.8E-9	
	Genetic Effects	5.8E-10	
	Hazard Index		
Offsite Population 1290172	Dose (person-rem)	1.1	
	Cancer Fatalities	5.3E-4	
	Cancer Incidence	1.8E-3	
	Genetic Effects	1.1E-4	
Offsite MEI	Dose (rem)	2.4E-5	
	Cancer Fatalities	1.2E-8	
	Cancer Incidence	4.0E-8	
	Genetic Effects	2.4E-9	
	Hazard Index		
WM Workers 650	Dose (FTE-rem)	1.4E1	
	Cancer Fatalities	5.8E-3	
	Cancer Incidence	2.0E-2	
	Genetic Effects	8.7E-4	
	Exposure Index		
	Construction Fatalities		6.2E-2
	Construction Injuries		2.7E1
	Operation Fatalities		7.9E-2
	Operation Injuries		6.7E1

Table 3.1-65. Risks Associated with Routine Treatment of LLW at KCP Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 4410	Dose (person-rem)	2.4E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	4.1E-11	
	Genetic Effects	2.4E-12	
Noninvolved Worker MEI	Dose (rem)	1.7E-11	
	Cancer Fatalities	9.0E-15	
	Cancer Incidence	2.9E-14	
	Genetic Effects	0.00	
	Hazard Index		
Offsite Population 1729833	Dose (person-rem)	2.1E-6	
	Cancer Fatalities	1.1E-9	
	Cancer Incidence	3.6E-9	
	Genetic Effects	2.1E-10	
Offsite MEI	Dose (rem)	9.7E-11	
	Cancer Fatalities	4.8E-14	
	Cancer Incidence	1.6E-13	
	Genetic Effects	1.0E-14	
	Hazard Index		
WM Workers 11	Dose (FTE-rem)	7.3E-2	
	Cancer Fatalities	2.9E-5	
	Cancer Incidence	1.0E-4	
	Genetic Effects	4.4E-6	
	Exposure Index		
	Construction Fatalities		1.3E-3
	Construction Injuries		5.6E-1
	Operation Fatalities		1.3E-3
	Operation Injuries		1.1

Table 3.1–66. Risks Associated with Routine Treatment of LLW at K-25 Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3800	Dose (person-rem)	1.0E-6	
	Cancer Fatalities	5.0E-10	
	Cancer Incidence	1.7E-9	
	Genetic Effects	1.0E-10	
Noninvolved Worker MEI	Dose (rem)	9.2E-10	
	Cancer Fatalities	4.6E-13	
	Cancer Incidence	1.6E-12	
	Genetic Effects	9.2E-14	
	Hazard Index		
Offsite Population 871406	Dose (person-rem)	1.7E-5	
	Cancer Fatalities	8.6E-9	
	Cancer Incidence	2.9E-8	
	Genetic Effects	1.7E-9	
Offsite MEI	Dose (rem)	3.8E-10	
	Cancer Fatalities	1.9E-13	
	Cancer Incidence	6.4E-13	
	Genetic Effects	3.8E-14	
	Hazard Index		
WM Workers 582	Dose (FTE-rem)	8.8	
	Cancer Fatalities	3.5E-3	
	Cancer Incidence	1.2E-2	
	Genetic Effects	5.3E-4	
	Exposure Index		
	Construction Fatalities		5.0E-2
	Construction Injuries		2.2E1
	Operation Fatalities		7.0E-2
	Operation Injuries		6.0E1

Table 3.1-67. Risks Associated with Routine Treatment of LLW at LANL Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 11552	Dose (person-rem)	1.4	
	Cancer Fatalities	7.0E-4	
	Cancer Incidence	2.4E-3	
	Genetic Effects	1.4E-4	
Noninvolved Worker MEI	Dose (rem)	1.1E-3	
	Cancer Fatalities	5.3E-7	
	Cancer Incidence	1.8E-6	
	Genetic Effects	1.1E-7	
	Hazard Index		
Offsite Population 159152	Dose (person-rem)	1.6E1	
	Cancer Fatalities	7.8E-3	
	Cancer Incidence	2.7E-2	
	Genetic Effects	1.6E-3	
Offsite MEI	Dose (rem)	1.6E-3	
	Cancer Fatalities	8.2E-7	
	Cancer Incidence	2.8E-6	
	Genetic Effects	1.6E-7	
	Hazard Index		
WM Workers 1362	Dose (FTE-rem)	4.6E2	
	Cancer Fatalities	1.9E-1	
	Cancer Incidence	6.5E-1	
	Genetic Effects	2.8E-2	
	Exposure Index		
	Construction Fatalities		1.4E-1
	Construction Injuries		5.9E1
	Operation Fatalities		1.7E-1
	Operation Injuries		1.4E2

Table 3.1-68. Risks Associated with Routine Treatment of LLW at LBL Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3940	Dose (person-rem)	5.4E-2	
	Cancer Fatalities	2.7E-5	
	Cancer Incidence	9.1E-5	
	Genetic Effects	5.4E-6	
Noninvolved Worker MEI	Dose (rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.1E-8	
	Genetic Effects	4.2E-9	
	Hazard Index		
Offsite Population 1586829	Dose (person-rem)	3.6E1	
	Cancer Fatalities	1.8E-2	
	Cancer Incidence	6.2E-2	
	Genetic Effects	3.6E-3	
Offsite MEI	Dose (rem)	5.7E-4	
	Cancer Fatalities	2.9E-7	
	Cancer Incidence	9.7E-7	
	Genetic Effects	5.7E-8	
	Hazard Index		
WM Workers 174	Dose (FTE-rem)	1.9E1	
	Cancer Fatalities	7.6E-3	
	Cancer Incidence	2.7E-2	
	Genetic Effects	1.1E-3	
	Exposure Index		
	Construction Fatalities		2.2E-2
	Construction Injuries		9.6
	Operation Fatalities		2.1E-2
	Operation Injuries		1.8E1

Table 3.1–69. Risks Associated with Routine Treatment of LLW at LLNL Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 9504	Dose (person-rem)	1.1E1	
	Cancer Fatalities	5.3E-3	
	Cancer Incidence	1.8E-2	
	Genetic Effects	1.1E-3	
Noninvolved Worker MEI	Dose (rem)	3.6E-3	
	Cancer Fatalities	1.8E-6	
	Cancer Incidence	6.2E-6	
	Genetic Effects	3.6E-7	
	Hazard Index		
Offsite Population 6324234	Dose (person-rem)	7.7E2	
	Cancer Fatalities	3.9E-1	
	Cancer Incidence	1.3	
	Genetic Effects	7.7E-2	
Offsite MEI	Dose (rem)	1.3E-2	
	Cancer Fatalities	6.3E-6	
	Cancer Incidence	2.1E-5	
	Genetic Effects	1.3E-6	
	Hazard Index		
WM Workers 483	Dose (FTE-rem)	1.2E2	
	Cancer Fatalities	5.0E-2	
	Cancer Incidence	1.7E-1	
	Genetic Effects	7.5E-3	
	Exposure Index		
	Construction Fatalities		4.0E-2
	Construction Injuries		1.8E1
	Operation Fatalities		5.8E-2
	Operation Injuries		5.0E1

Table 3.1–70. Risks Associated with Routine Treatment of LLW at Mound Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1688	Dose (person-rem)	1.6E-6	
	Cancer Fatalities	8.0E-10	
	Cancer Incidence	2.7E-9	
	Genetic Effects	1.6E-10	
Noninvolved Worker MEI	Dose (rem)	2.5E-9	
	Cancer Fatalities	1.3E-12	
	Cancer Incidence	4.3E-12	
	Genetic Effects	2.5E-13	
	Hazard Index		
Offsite Population 3032983	Dose (person-rem)	2.1E-4	
	Cancer Fatalities	1.0E-7	
	Cancer Incidence	3.5E-7	
	Genetic Effects	2.1E-8	
Offsite MEI	Dose (rem)	1.2E-8	
	Cancer Fatalities	5.9E-12	
	Cancer Incidence	2.0E-11	
	Genetic Effects	1.2E-12	
	Hazard Index		
WM Workers 435	Dose (FTE-rem)	3.3	
	Cancer Fatalities	1.3E-3	
	Cancer Incidence	4.7E-3	
	Genetic Effects	2.0E-4	
	Exposure Index		
	Construction Fatalities		5.1E-2
	Construction Injuries		2.2E1
	Operation Fatalities		5.3E-2
	Operation Injuries		4.5E1

Table 3.1-71. Risks Associated with Routine Treatment of LLW at ORNL Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3809	Dose (person-rem)	6.7E-4	
	Cancer Fatalities	3.3E-7	
	Cancer Incidence	1.1E-6	
	Genetic Effects	6.7E-8	
Noninvolved Worker MEI	Dose (rem)	6.1E-7	
	Cancer Fatalities	3.0E-10	
	Cancer Incidence	1.0E-9	
	Genetic Effects	6.1E-11	
	Hazard Index		
Offsite Population 881652	Dose (person-rem)	3.0E-2	
	Cancer Fatalities	1.5E-5	
	Cancer Incidence	5.1E-5	
	Genetic Effects	3.0E-6	
Offsite MEI	Dose (rem)	9.2E-7	
	Cancer Fatalities	4.6E-10	
	Cancer Incidence	1.6E-9	
	Genetic Effects	9.2E-11	
	Hazard Index		
WM Workers 4756	Dose (FTE-rem)	3.3E2	
	Cancer Fatalities	1.3E-1	
	Cancer Incidence	4.6E-1	
	Genetic Effects	2.0E-2	
	Exposure Index		
	Construction Fatalities		4.5E-1
	Construction Injuries		2.0E2
	Operation Fatalities		5.8E-1
	Operation Injuries		4.9E2

Table 3.1-72. Risks Associated with Routine Treatment of LLW at Pantex Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 2825	Dose (person-rem)	3.2E-5	
	Cancer Fatalities	1.6E-8	
	Cancer Incidence	5.4E-8	
	Genetic Effects	3.2E-9	
Noninvolved Worker MEI	Dose (rem)	6.1E-8	
	Cancer Fatalities	3.1E-11	
	Cancer Incidence	1.0E-10	
	Genetic Effects	6.1E-12	
	Hazard Index		
Offsite Population 265185	Dose (person-rem)	2.2E-4	
	Cancer Fatalities	1.1E-7	
	Cancer Incidence	3.7E-7	
	Genetic Effects	2.2E-8	
Offsite MEI	Dose (rem)	1.8E-8	
	Cancer Fatalities	9.1E-12	
	Cancer Incidence	3.1E-11	
	Genetic Effects	1.8E-12	
	Hazard Index		
WM Workers 1251	Dose (FTE-rem)	6.8	
	Cancer Fatalities	2.7E-3	
	Cancer Incidence	9.5E-3	
	Genetic Effects	4.1E-4	
	Exposure Index		
	Construction Fatalities		1.0E-1
	Construction Injuries		4.5E1
	Operation Fatalities		1.5E-1
	Operation Injuries		1.3E2

Table 3.1-73. Risks Associated with Routine Treatment of LLW at PGDP Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1952	Dose (person-rem)	3.0E-4	
	Cancer Fatalities	1.5E-7	
	Cancer Incidence	5.1E-7	
	Genetic Effects	3.0E-8	
Noninvolved Worker MEI	Dose (rem)	3.6E-7	
	Cancer Fatalities	1.8E-10	
	Cancer Incidence	6.2E-10	
	Genetic Effects	3.6E-11	
	Hazard Index		
Offsite Population 500502	Dose (person-rem)	3.8E-3	
	Cancer Fatalities	1.9E-6	
	Cancer Incidence	6.4E-6	
	Genetic Effects	3.8E-7	
Offsite MEI	Dose (rem)	4.2E-7	
	Cancer Fatalities	2.1E-10	
	Cancer Incidence	7.1E-10	
	Genetic Effects	4.2E-11	
	Hazard Index		
WM Workers 800	Dose (FTE-rem)	4.1	
	Cancer Fatalities	1.7E-3	
	Cancer Incidence	5.8E-3	
	Genetic Effects	2.5E-4	
	Exposure Index		
	Construction Fatalities		8.7E-2
	Construction Injuries		3.8E1
	Operation Fatalities		9.7E-2
	Operation Injuries		8.2E1

Table 3.1–74. Risks Associated with Routine Treatment of LLW at Pinellas Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1167	Dose (person-rem)	4.2E-8	
	Cancer Fatalities	2.1E-11	
	Cancer Incidence	7.2E-11	
	Genetic Effects	4.2E-12	
Noninvolved Worker MEI	Dose (rem)	8.7E-11	
	Cancer Fatalities	4.4E-14	
	Cancer Incidence	1.5E-13	
	Genetic Effects	9.0E-15	
	Hazard Index		
Offsite Population 2532174	Dose (person-rem)	3.5E-5	
	Cancer Fatalities	1.8E-8	
	Cancer Incidence	6.0E-8	
	Genetic Effects	3.5E-9	
Offsite MEI	Dose (rem)	7.7E-10	
	Cancer Fatalities	3.8E-13	
	Cancer Incidence	1.3E-12	
	Genetic Effects	7.7E-14	
	Hazard Index		
WM Workers 21	Dose (FTE-rem)	1.4E-1	
	Cancer Fatalities	5.6E-5	
	Cancer Incidence	2.0E-4	
	Genetic Effects	8.4E-6	
	Exposure Index		
	Construction Fatalities		2.5E-3
	Construction Injuries		1.1
	Operation Fatalities		2.5E-3
	Operation Injuries		2.1

Table 3.1-75. Risks Associated with Routine Treatment of LLW at Ports Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3226	Dose (person-rem)	1.1E-2	
	Cancer Fatalities	5.4E-6	
	Cancer Incidence	1.8E-5	
	Genetic Effects	1.1E-6	
Noninvolved Worker MEI	Dose (rem)	6.1E-6	
	Cancer Fatalities	3.1E-9	
	Cancer Incidence	1.0E-8	
	Genetic Effects	6.1E-10	
	Hazard Index		
Offsite Population 639602	Dose (person-rem)	1.1E-1	
	Cancer Fatalities	5.3E-5	
	Cancer Incidence	1.8E-4	
	Genetic Effects	1.1E-5	
Offsite MEI	Dose (rem)	1.3E-5	
	Cancer Fatalities	6.6E-9	
	Cancer Incidence	2.2E-8	
	Genetic Effects	1.3E-9	
	Hazard Index		
WM Workers 3434	Dose (FTE-rem)	6.9E1	
	Cancer Fatalities	2.8E-2	
	Cancer Incidence	9.6E-2	
	Genetic Effects	4.1E-3	
	Exposure Index		
	Construction Fatalities		3.0E-1
	Construction Injuries		1.3E2
	Operation Fatalities		4.2E-1
	Operation Injuries		3.5E2

Table 3.1-76. Risks Associated with Routine Treatment of LLW at RFETS Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 6993	Dose (person-rem)	1.9E-2	
	Cancer Fatalities	9.5E-6	
	Cancer Incidence	3.2E-5	
	Genetic Effects	1.9E-6	
Noninvolved Worker MEI	Dose (rem)	1.1E-5	
	Cancer Fatalities	5.7E-9	
	Cancer Incidence	1.9E-8	
	Genetic Effects	1.1E-9	
	Hazard Index		
Offsite Population 2171877	Dose (person-rem)	3.7E-1	
	Cancer Fatalities	1.9E-4	
	Cancer Incidence	6.3E-4	
	Genetic Effects	3.7E-5	
Offsite MEI	Dose (rem)	5.1E-6	
	Cancer Fatalities	2.5E-9	
	Cancer Incidence	8.6E-9	
	Genetic Effects	5.1E-10	
	Hazard Index		
WM Workers 800	Dose (FTE-rem)	2.9	
	Cancer Fatalities	1.1E-3	
	Cancer Incidence	4.0E-3	
	Genetic Effects	1.7E-4	
	Exposure Index		
	Construction Fatalities		1.2E-1
	Construction Injuries		5.2E1
	Operation Fatalities		9.7E-2
	Operation Injuries		8.2E1

Table 3.1-77. Risks Associated with Routine Treatment of LLW at SNL-NM Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population; 10576	Dose (person-rem)	6.1E-5	
	Cancer Fatalities	3.0E-8	
	Cancer Incidence	1.0E-7	
	Genetic Effects	6.1E-9	
Noninvolved Worker MEI	Dose (rem)	2.6E-8	
	Cancer Fatalities	1.3E-11	
	Cancer Incidence	4.3E-11	
	Genetic Effects	2.6E-12	
	Hazard Index		
Offsite Population 610714	Dose (person-rem)	3.6E-3	
	Cancer Fatalities	1.8E-6	
	Cancer Incidence	6.2E-6	
	Genetic Effects	3.6E-7	
Offsite MEI	Dose (rem)	1.4E-7	
	Cancer Fatalities	7.2E-11	
	Cancer Incidence	2.4E-10	
	Genetic Effects	1.4E-11	
	Hazard Index		
WM Workers 210	Dose (FTE-rem)	1.0	
	Cancer Fatalities	4.1E-4	
	Cancer Incidence	1.5E-3	
	Genetic Effects	6.2E-5	
	Exposure Index		
	Construction Fatalities		2.5E-2
	Construction Injuries		1.1E1
	Operation Fatalities		2.5E-2
	Operation Injuries		2.2E1

Table 3.1–78. Risks Associated with Routine Treatment of LLW at SRS Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 15996	Dose (person-rem)	6.7E-2	
	Cancer Fatalities	3.3E-5	
	Cancer Incidence	1.1E-4	
	Genetic Effects	6.7E-6	
Noninvolved Worker MEI	Dose (rem)	5.9E-5	
	Cancer Fatalities	3.0E-8	
	Cancer Incidence	1.0E-7	
	Genetic Effects	5.9E-9	
	Hazard Index		
Offsite Population 620618	Dose (person-rem)	1.2	
	Cancer Fatalities	6.1E-4	
	Cancer Incidence	2.1E-3	
	Genetic Effects	1.2E-4	
Offsite MEI	Dose (rem)	1.2E-5	
	Cancer Fatalities	5.7E-9	
	Cancer Incidence	2.0E-8	
	Genetic Effects	1.2E-9	
	Hazard Index		
WM Workers 2598	Dose (FTE-rem)	6.9E2	
	Cancer Fatalities	2.8E-1	
	Cancer Incidence	9.6E-1	
	Genetic Effects	4.1E-2	
	Exposure Index		
	Construction Fatalities		2.4E-1
	Construction Injuries		1.1E2
	Operation Fatalities		3.1E-1
	Operation Injuries		2.7E2

Table 3.1-79. Risks Associated with Routine Treatment of LLW at Y-12 Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 7699	Dose (person-rem)	5.7E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.7E-9	
	Genetic Effects	5.7E-10	
Noninvolved Worker MEI	Dose (rem)	1.9E-9	
	Cancer Fatalities	9.4E-13	
	Cancer Incidence	3.2E-12	
	Genetic Effects	1.9E-13	
	Hazard Index		
Offsite Population 895379	Dose (person-rem)	4.1E-5	
	Cancer Fatalities	2.0E-8	
	Cancer Incidence	6.9E-8	
	Genetic Effects	4.1E-9	
Offsite MEI	Dose (rem)	1.5E-9	
	Cancer Fatalities	7.5E-13	
	Cancer Incidence	2.6E-12	
	Genetic Effects	1.5E-13	
	Hazard Index		
WM Workers 853	Dose (FTE-rem)	1.3E1	
	Cancer Fatalities	5.3E-3	
	Cancer Incidence	1.8E-2	
	Genetic Effects	7.9E-4	
	Exposure Index		
	Construction Fatalities		7.1E-2
	Construction Injuries		3.1E1
	Operation Fatalities		1.0E-1
	Operation Injuries		8.8E1

Table 3.1–80. Risks Associated with Routine Treatment of LLW at ANL-E Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 5571	Dose (person-rem)	2.0E-5	
	Cancer Fatalities	9.8E-9	
	Cancer Incidence	3.3E-8	
	Genetic Effects	2.0E-9	
Noninvolved Worker MEI	Dose (rem)	2.0E-8	
	Cancer Fatalities	1.0E-11	
	Cancer Incidence	3.4E-11	
	Genetic Effects	2.0E-12	
	Hazard Index		
Offsite Population 7939785	Dose (person-rem)	5.0E-3	
	Cancer Fatalities	2.5E-6	
	Cancer Incidence	8.5E-6	
	Genetic Effects	5.0E-7	
Offsite MEI	Dose (rem)	2.8E-8	
	Cancer Fatalities	1.4E-11	
	Cancer Incidence	4.7E-11	
	Genetic Effects	2.8E-12	
	Hazard Index		
WM Workers 224	Dose (FTE-rem)	79	
	Cancer Fatalities	3.2E-2	
	Cancer Incidence	1.1E-1	
	Genetic Effects	4.8E-3	
	Exposure Index		
	Construction Fatalities		2.4E-2
	Construction Injuries		11
	Operation Fatalities		2.7E-2
	Operation Injuries		23

Table 3.1–81. Risks Associated with Routine Treatment of LLW at Hanford Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8674	Dose (person-rem)	1.9E-4	
	Cancer Fatalities	9.6E-8	
	Cancer Incidence	3.3E-7	
	Genetic Effects	1.9E-8	
Noninvolved Worker MEI	Dose (rem)	3.3E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.6E-10	
	Genetic Effects	3.3E-11	
	Hazard Index		
Offsite Population 377645	Dose (person-rem)	5.4E-3	
	Cancer Fatalities	2.7E-6	
	Cancer Incidence	9.1E-6	
	Genetic Effects	5.4E-7	
Offsite MEI	Dose (rem)	1.1E-7	
	Cancer Fatalities	5.5E-11	
	Cancer Incidence	1.9E-10	
	Genetic Effects	1.1E-11	
	Hazard Index		
WM Workers 577	Dose (FTE-rem)	250	
	Cancer Fatalities	9.9E-2	
	Cancer Incidence	3.5E-1	
	Genetic Effects	1.5E-2	
	Exposure Index		
	Construction Fatalities		5.3E-2
	Construction Injuries		23
	Operation Fatalities		7.0E-2
	Operation Injuries		59

Table 3.1–82. Risks Associated with Routine Treatment of LLW at INEL Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8451	Dose (person-rem)	4.8E-4	
	Cancer Fatalities	2.4E-7	
	Cancer Incidence	8.1E-7	
	Genetic Effects	4.8E-8	
Noninvolved Worker MEI	Dose (rem)	4.0E-7	
	Cancer Fatalities	2.0E-10	
	Cancer Incidence	6.8E-10	
	Genetic Effects	4.0E-11	
	Hazard Index		
Offsite Population 153061	Dose (person-rem)	1.6E-3	
	Cancer Fatalities	8.0E-7	
	Cancer Incidence	2.7E-6	
	Genetic Effects	1.6E-7	
Offsite MEI	Dose (rem)	2.0E-7	
	Cancer Fatalities	9.9E-11	
	Cancer Incidence	3.4E-10	
	Genetic Effects	2.0E-11	
	Hazard Index		
WM Workers 677	Dose (FTE-rem)	410	
	Cancer Fatalities	1.7E-1	
	Cancer Incidence	5.8E-1	
	Genetic Effects	2.5E-2	
	Exposure Index		
	Construction Fatalities		7.2E-2
	Construction Injuries		31
	Operation Fatalities		8.2E-2
	Operation Injuries		70

Table 3.1-83. Risks Associated with Routine Treatment of LLW at KAPL-K Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3896	Dose (person-rem)	1.2E-2	
	Cancer Fatalities	6.2E-6	
	Cancer Incidence	2.1E-5	
	Genetic Effects	1.2E-6	
Noninvolved Worker MEI	Dose (rem)	5.8E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.8E-9	
	Genetic Effects	5.8E-10	
	Hazard Index		
Offsite Population 1290172	Dose (person-rem)	1.1	
	Cancer Fatalities	5.3E-4	
	Cancer Incidence	1.8E-3	
	Genetic Effects	1.1E-4	
Offsite MEI	Dose (rem)	2.4E-5	
	Cancer Fatalities	1.2E-8	
	Cancer Incidence	4.0E-8	
	Genetic Effects	2.4E-9	
	Hazard Index		
WM Workers 650	Dose (FTE-rem)	14	
	Cancer Fatalities	5.8E-3	
	Cancer Incidence	2.0E-2	
	Genetic Effects	8.7E-4	
	Exposure Index		
	Construction Fatalities		6.2E-2
	Construction Injuries		27
	Operation Fatalities		7.9E-2
	Operation Injuries		67

Table 3.1-84. Risks Associated with Routine Treatment of LLW at KCP Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 4410	Dose (person-rem)	2.4E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	4.1E-11	
	Genetic Effects	2.4E-12	
Noninvolved Worker MEI	Dose (rem)	1.7E-11	
	Cancer Fatalities	9.0E-15	
	Cancer Incidence	2.9E-14	
	Genetic Effects	0.00	
	Hazard Index		
Offsite Population 1729833	Dose (person-rem)	2.1E-6	
	Cancer Fatalities	1.1E-9	
	Cancer Incidence	3.6E-9	
	Genetic Effects	2.1E-10	
Offsite MEI	Dose (rem)	9.7E-11	
	Cancer Fatalities	4.8E-14	
	Cancer Incidence	1.6E-13	
	Genetic Effects	1.0E-14	
	Hazard Index		
WM Workers 11	Dose (FTE-rem)	7.3E-2	
	Cancer Fatalities	2.9E-5	
	Cancer Incidence	1.0E-4	
	Genetic Effects	4.4E-6	
	Exposure Index		
	Construction Fatalities		1.3E-3
	Construction Injuries		5.6E-1
	Operation Fatalities		1.3E-3
	Operation Injuries		1.1

Table 3.1-85. Risks Associated with Routine Treatment of LLW at K-25 Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3800	Dose (person-rem)	1.0E-6	
	Cancer Fatalities	5.0E-10	
	Cancer Incidence	1.7E-9	
	Genetic Effects	1.0E-10	
Noninvolved Worker MEI	Dose (rem)	9.2E-10	
	Cancer Fatalities	4.6E-13	
	Cancer Incidence	1.6E-12	
	Genetic Effects	9.2E-14	
	Hazard Index		
Offsite Population 871406	Dose (person-rem)	1.7E-5	
	Cancer Fatalities	8.6E-9	
	Cancer Incidence	2.9E-8	
	Genetic Effects	1.7E-9	
Offsite MEI	Dose (rem)	3.8E-10	
	Cancer Fatalities	1.9E-13	
	Cancer Incidence	6.4E-13	
	Genetic Effects	3.8E-14	
	Hazard Index		
WM Workers 582	Dose (FTE-rem)	8.8	
	Cancer Fatalities	3.5E-3	
	Cancer Incidence	1.2E-2	
	Genetic Effects	5.3E-4	
	Exposure Index		
	Construction Fatalities		5.0E-2
	Construction Injuries		22
	Operation Fatalities		7.0E-2
	Operation Injuries		60

Table 3.1-86. Risks Associated with Routine Treatment of LLW at LANL Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 11552	Dose (person-rem)	2.8E-2	
	Cancer Fatalities	1.4E-5	
	Cancer Incidence	4.8E-5	
	Genetic Effects	2.8E-6	
Noninvolved Worker MEI	Dose (rem)	2.2E-5	
	Cancer Fatalities	1.1E-8	
	Cancer Incidence	3.7E-8	
	Genetic Effects	2.2E-9	
	Hazard Index		
Offsite Population 159152	Dose (person-rem)	4.2E-1	
	Cancer Fatalities	2.1E-4	
	Cancer Incidence	7.1E-4	
	Genetic Effects	4.2E-5	
Offsite MEI	Dose (rem)	4.4E-5	
	Cancer Fatalities	2.2E-8	
	Cancer Incidence	7.5E-8	
	Genetic Effects	4.4E-9	
	Hazard Index		
WM Workers 653	Dose (FTE-rem)	350	
	Cancer Fatalities	1.4E-1	
	Cancer Incidence	4.9E-1	
	Genetic Effects	2.1E-2	
	Exposure Index		
	Construction Fatalities		5.7E-2
	Construction Injuries		25
	Operation Fatalities		7.9E-2
	Operation Injuries		67

Table 3.1-87. Risks Associated with Routine Treatment of LLW at LBL Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3940	Dose (person-rem)	5.4E-2	
	Cancer Fatalities	2.7E-5	
	Cancer Incidence	9.1E-5	
	Genetic Effects	5.4E-6	
Noninvolved Worker MEI	Dose (rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.1E-8	
	Genetic Effects	4.2E-9	
	Hazard Index		
Offsite Population 1586829	Dose (person-rem)	36	
	Cancer Fatalities	1.8E-2	
	Cancer Incidence	6.2E-2	
	Genetic Effects	3.6E-3	
Offsite MEI	Dose (rem)	5.7E-4	
	Cancer Fatalities	2.9E-7	
	Cancer Incidence	9.7E-7	
	Genetic Effects	5.7E-8	
	Hazard Index		
WM Workers 174	Dose (FTE-rem)	19	
	Cancer Fatalities	7.6E-3	
	Cancer Incidence	2.7E-2	
	Genetic Effects	1.1E-3	
	Exposure Index		
	Construction Fatalities		2.2E-2
	Construction Injuries		9.6
	Operation Fatalities		2.1E-2
	Operation Injuries		18

Table 3.1–88. Risks Associated with Routine Treatment of LLW at LLNL Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 9504	Dose (person-rem)	2.8E-1	
	Cancer Fatalities	1.4E-4	
	Cancer Incidence	4.7E-4	
	Genetic Effects	2.8E-5	
Noninvolved Worker MEI	Dose (rem)	9.4E-5	
	Cancer Fatalities	4.7E-8	
	Cancer Incidence	1.6E-7	
	Genetic Effects	9.4E-9	
	Hazard Index		
Offsite Population 6324234	Dose (person-rem)	20	
	Cancer Fatalities	1.0E-2	
	Cancer Incidence	3.4E-2	
	Genetic Effects	2.0E-3	
Offsite MEI	Dose (rem)	3.3E-4	
	Cancer Fatalities	1.6E-7	
	Cancer Incidence	5.5E-7	
	Genetic Effects	3.3E-8	
	Hazard Index		
WM Workers 227	Dose (FTE-rem)	6.4	
	Cancer Fatalities	2.5E-3	
	Cancer Incidence	8.9E-3	
	Genetic Effects	3.8E-4	
	Exposure Index		
	Construction Fatalities		2.9E-2
	Construction Injuries		13
	Operation Fatalities		2.8E-2
	Operation Injuries		23

Table 3.1–89. Risks Associated with Routine Treatment of LLW at Mound Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1688	Dose (person-rem)	1.6E-6	
	Cancer Fatalities	8.0E-10	
	Cancer Incidence	2.7E-9	
	Genetic Effects	1.6E-10	
Noninvolved Worker MEI	Dose (rem)	2.5E-9	
	Cancer Fatalities	1.3E-12	
	Cancer Incidence	4.3E-12	
	Genetic Effects	2.5E-13	
	Hazard Index		
Offsite Population 3032983	Dose (person-rem)	2.1E-4	
	Cancer Fatalities	1.0E-7	
	Cancer Incidence	3.5E-7	
	Genetic Effects	2.1E-8	
Offsite MEI	Dose (rem)	1.2E-8	
	Cancer Fatalities	5.9E-12	
	Cancer Incidence	2.0E-11	
	Genetic Effects	1.2E-12	
	Hazard Index		
WM Workers 435	Dose (FTE-rem)	3.3	
	Cancer Fatalities	1.3E-3	
	Cancer Incidence	4.7E-3	
	Genetic Effects	2.0E-4	
	Exposure Index		
	Construction Fatalities		5.1E-2
	Construction Injuries		22
	Operation Fatalities		5.3E-2
	Operation Injuries		45

Table 3.1-90. Risks Associated with Routine Treatment of LLW at ORNL Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3809	Dose (person-rem)	3.8E-4	
	Cancer Fatalities	1.9E-7	
	Cancer Incidence	6.4E-7	
	Genetic Effects	3.8E-8	
Noninvolved Worker MEI	Dose (rem)	3.4E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.9E-10	
	Genetic Effects	3.4E-11	
	Hazard Index		
Offsite Population 881652	Dose (person-rem)	1.1E-2	
	Cancer Fatalities	5.7E-6	
	Cancer Incidence	1.9E-5	
	Genetic Effects	1.1E-6	
Offsite MEI	Dose (rem)	3.5E-7	
	Cancer Fatalities	1.8E-10	
	Cancer Incidence	6.0E-10	
	Genetic Effects	3.5E-11	
	Hazard Index		
WM Workers 444	Dose (FTE-rem)	65	
	Cancer Fatalities	2.6E-2	
	Cancer Incidence	9.1E-2	
	Genetic Effects	3.9E-3	
	Exposure Index		
	Construction Fatalities		6.7E-2
	Construction Injuries		29
	Operation Fatalities		5.4E-2
	Operation Injuries		46

Table 3.1-91. Risks Associated with Routine Treatment of LLW at Pantex Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 2825	Dose (person-rem)	3.3E-5	
	Cancer Fatalities	1.6E-8	
	Cancer Incidence	5.6E-8	
	Genetic Effects	3.3E-9	
Noninvolved Worker MEI	Dose (rem)	6.3E-8	
	Cancer Fatalities	3.1E-11	
	Cancer Incidence	1.1E-10	
	Genetic Effects	6.3E-12	
	Hazard Index		
Offsite Population 265185	Dose (person-rem)	2.2E-4	
	Cancer Fatalities	1.1E-7	
	Cancer Incidence	3.7E-7	
	Genetic Effects	2.2E-8	
Offsite MEI	Dose (rem)	1.8E-8	
	Cancer Fatalities	9.2E-12	
	Cancer Incidence	3.1E-11	
	Genetic Effects	1.8E-12	
	Hazard Index		
WM Workers 675	Dose (FTE-rem)	6.4	
	Cancer Fatalities	2.6E-3	
	Cancer Incidence	9.0E-3	
	Genetic Effects	3.9E-4	
	Exposure Index		
	Construction Fatalities		6.1E-2
	Construction Injuries		27
	Operation Fatalities		8.2E-2
	Operation Injuries		69

Table 3.1-92. Risks Associated with Routine Treatment of LLW at PGDP Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1952	Dose (person-rem)	3.3E-6	
	Cancer Fatalities	1.7E-9	
	Cancer Incidence	5.6E-9	
	Genetic Effects	3.3E-10	
Noninvolved Worker MEI	Dose (rem)	4.1E-9	
	Cancer Fatalities	2.0E-12	
	Cancer Incidence	6.9E-12	
	Genetic Effects	4.1E-13	
	Hazard Index		
Offsite Population 500502	Dose (person-rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.1E-8	
	Genetic Effects	4.2E-9	
Offsite MEI	Dose (rem)	4.7E-9	
	Cancer Fatalities	2.3E-12	
	Cancer Incidence	8.0E-12	
	Genetic Effects	4.7E-13	
	Hazard Index		
WM Workers 503	Dose (FTE-rem)	3.7	
	Cancer Fatalities	1.5E-3	
	Cancer Incidence	5.2E-3	
	Genetic Effects	2.2E-4	
	Exposure Index		
	Construction Fatalities		5.1E-2
	Construction Injuries		22
	Operation Fatalities		6.1E-2
	Operation Injuries		52

Table 3.1-93. Risks Associated with Routine Treatment of LLW at Pinellas Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1167	Dose (person-rem)	4.2E-8	
	Cancer Fatalities	2.1E-11	
	Cancer Incidence	7.2E-11	
	Genetic Effects	4.2E-12	
Noninvolved Worker MEI	Dose (rem)	8.7E-11	
	Cancer Fatalities	4.4E-14	
	Cancer Incidence	1.5E-13	
	Genetic Effects	9.0E-15	
	Hazard Index		
Offsite Population 2532174	Dose (person-rem)	3.5E-5	
	Cancer Fatalities	1.8E-8	
	Cancer Incidence	6.0E-8	
	Genetic Effects	3.5E-9	
Offsite MEI	Dose (rem)	7.7E-10	
	Cancer Fatalities	3.8E-13	
	Cancer Incidence	1.3E-12	
	Genetic Effects	7.7E-14	
	Hazard Index		
WM Workers 21	Dose (FTE-rem)	1.4E-1	
	Cancer Fatalities	5.6E-5	
	Cancer Incidence	2.0E-4	
	Genetic Effects	8.4E-6	
	Exposure Index		
	Construction Fatalities		2.5E-3
	Construction Injuries		1.1
	Operation Fatalities		2.5E-3
	Operation Injuries		2.1

Table 3.1–94. Risks Associated with Routine Treatment of LLW at Ports Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3226	Dose (person-rem)	3.7E-7	
	Cancer Fatalities	1.8E-10	
	Cancer Incidence	6.3E-10	
	Genetic Effects	3.7E-11	
Noninvolved Worker MEI	Dose (rem)	2.1E-10	
	Cancer Fatalities	1.0E-13	
	Cancer Incidence	3.5E-13	
	Genetic Effects	2.1E-14	
	Hazard Index		
Offsite Population 639602	Dose (person-rem)	3.5E-6	
	Cancer Fatalities	1.8E-9	
	Cancer Incidence	6.0E-9	
	Genetic Effects	3.5E-10	
Offsite MEI	Dose (rem)	4.4E-10	
	Cancer Fatalities	2.2E-13	
	Cancer Incidence	7.5E-13	
	Genetic Effects	4.4E-14	
	Hazard Index		
WM Workers 1075	Dose (FTE-rem)	11	
	Cancer Fatalities	4.6E-3	
	Cancer Incidence	1.6E-2	
	Genetic Effects	6.8E-4	
	Exposure Index		
	Construction Fatalities		9.8E-2
	Construction Injuries		43
	Operation Fatalities		1.3E-1
	Operation Injuries		110

Table 3.1–95. Risks Associated with Routine Treatment of LLW at RFETS Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 6993	Dose (person-rem)	4.1E-5	
	Cancer Fatalities	2.0E-8	
	Cancer Incidence	6.9E-8	
	Genetic Effects	4.1E-9	
Noninvolved Worker MEI	Dose (rem)	2.5E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	4.2E-11	
	Genetic Effects	2.5E-12	
	Hazard Index		
Offsite Population 2171877	Dose (person-rem)	8.0E-4	
	Cancer Fatalities	4.0E-7	
	Cancer Incidence	1.4E-6	
	Genetic Effects	8.0E-8	
Offsite MEI	Dose (rem)	1.1E-8	
	Cancer Fatalities	5.4E-12	
	Cancer Incidence	1.8E-11	
	Genetic Effects	1.1E-12	
	Hazard Index		
WM Workers 344	Dose (FTE-rem)	2.9	
	Cancer Fatalities	1.2E-3	
	Cancer Incidence	4.0E-3	
	Genetic Effects	1.7E-4	
	Exposure Index		
	Construction Fatalities		3.8E-2
	Construction Injuries		17
	Operation Fatalities		4.2E-2
	Operation Injuries		35

Table 3.1–96. Risks Associated with Routine Treatment of LLW at SNL–NM Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 10576	Dose (person-rem)	6.1E-5	
	Cancer Fatalities	3.0E-8	
	Cancer Incidence	1.0E-7	
	Genetic Effects	6.1E-9	
Noninvolved Worker MEI	Dose (rem)	2.6E-8	
	Cancer Fatalities	1.3E-11	
	Cancer Incidence	4.3E-11	
	Genetic Effects	2.6E-12	
	Hazard Index		
Offsite Population 610714	Dose (person-rem)	3.6E-3	
	Cancer Fatalities	1.8E-6	
	Cancer Incidence	6.2E-6	
	Genetic Effects	3.6E-7	
Offsite MEI	Dose (rem)	1.4E-7	
	Cancer Fatalities	7.2E-11	
	Cancer Incidence	2.4E-10	
	Genetic Effects	1.4E-11	
	Hazard Index		
WM Workers 210	Dose (FTE-rem)	1.0	
	Cancer Fatalities	4.1E-4	
	Cancer Incidence	1.5E-3	
	Genetic Effects	6.2E-5	
	Exposure Index		
	Construction Fatalities		2.5E-2
	Construction Injuries		11
	Operation Fatalities		2.5E-2
	Operation Injuries		22

Table 3.1-97. Risks Associated with Routine Treatment of LLW at SRS Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 15996	Dose (person-rem)	2.6E-3	
	Cancer Fatalities	1.3E-6	
	Cancer Incidence	4.4E-6	
	Genetic Effects	2.6E-7	
Noninvolved Worker MEI	Dose (rem)	2.3E-6	
	Cancer Fatalities	1.1E-9	
	Cancer Incidence	3.8E-9	
	Genetic Effects	2.3E-10	
	Hazard Index		
Offsite Population 620618	Dose (person-rem)	3.7E-2	
	Cancer Fatalities	1.9E-5	
	Cancer Incidence	6.3E-5	
	Genetic Effects	3.7E-6	
Offsite MEI	Dose (rem)	3.5E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.9E-10	
	Genetic Effects	3.5E-11	
	Hazard Index		
WM Workers 1986	Dose (FTE-rem)	570	
	Cancer Fatalities	2.3E-1	
	Cancer Incidence	7.9E-1	
	Genetic Effects	3.4E-2	
	Exposure Index		
	Construction Fatalities		2.0E-1
	Construction Injuries		86
	Operation Fatalities		2.4E-1
	Operation Injuries		200

Table 3.1-98. Risks Associated with Routine Treatment of LLW at Y-12 Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 7699	Dose (person-rem)	5.7E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.7E-9	
	Genetic Effects	5.7E-10	
Noninvolved Worker MEI	Dose (rem)	1.9E-9	
	Cancer Fatalities	9.4E-13	
	Cancer Incidence	3.2E-12	
	Genetic Effects	1.9E-13	
	Hazard Index		
Offsite Population 895379	Dose (person-rem)	4.1E-5	
	Cancer Fatalities	2.0E-8	
	Cancer Incidence	6.9E-8	
	Genetic Effects	4.1E-9	
Offsite MEI	Dose (rem)	1.5E-9	
	Cancer Fatalities	7.5E-13	
	Cancer Incidence	2.6E-12	
	Genetic Effects	1.5E-13	
	Hazard Index		
WM Workers 853	Dose (FTE-rem)	13	
	Cancer Fatalities	5.3E-3	
	Cancer Incidence	1.8E-2	
	Genetic Effects	7.9E-4	
	Exposure Index		
	Construction Fatalities		7.1E-2
	Construction Injuries		31
	Operation Fatalities		1.0E-1
	Operation Injuries		88

Table 3.1-99. Risks Associated with Routine Treatment of LLW at ANL-E Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 5571	Dose (person-rem)	2.0E-5	
	Cancer Fatalities	9.8E-9	
	Cancer Incidence	3.3E-8	
	Genetic Effects	2.0E-9	
Noninvolved Worker MEI	Dose (rem)	2.0E-8	
	Cancer Fatalities	1.0E-11	
	Cancer Incidence	3.4E-11	
	Genetic Effects	2.0E-12	
	Hazard Index		
Offsite Population 7939785	Dose (person-rem)	5.0E-3	
	Cancer Fatalities	2.5E-6	
	Cancer Incidence	8.5E-6	
	Genetic Effects	5.0E-7	
Offsite MEI	Dose (rem)	2.8E-8	
	Cancer Fatalities	1.4E-11	
	Cancer Incidence	4.7E-11	
	Genetic Effects	2.8E-12	
	Hazard Index		
WM Workers 224	Dose (FTE-rem)	7.9E1	
	Cancer Fatalities	3.2E-2	
	Cancer Incidence	1.1E-1	
	Genetic Effects	4.8E-3	
	Exposure Index		
	Construction Fatalities		2.4E-2
	Construction Injuries		1.1E1
	Operation Fatalities		2.7E-2
	Operation Injuries		2.3E1

Table 3.1-100. Risks Associated with Routine Treatment of LLW at Hanford Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8674	Dose (person-rem)	9.7E-1	
	Cancer Fatalities	4.9E-4	
	Cancer Incidence	1.7E-3	
	Genetic Effects	9.7E-5	
Noninvolved Worker MEI	Dose (rem)	1.7E-3	
	Cancer Fatalities	8.5E-7	
	Cancer Incidence	2.9E-6	
	Genetic Effects	1.7E-7	
	Hazard Index		
Offsite Population 377645	Dose (person-rem)	9.4E1	
	Cancer Fatalities	4.7E-2	
	Cancer Incidence	1.6E-1	
	Genetic Effects	9.4E-3	
Offsite MEI	Dose (rem)	1.9E-3	
	Cancer Fatalities	9.6E-7	
	Cancer Incidence	3.3E-6	
	Genetic Effects	1.9E-7	
	Hazard Index		
WM Workers 1634	Dose (FTE-rem)	5.2E2	
	Cancer Fatalities	2.1E-1	
	Cancer Incidence	7.2E-1	
	Genetic Effects	3.1E-2	
	Exposure Index		
	Construction Fatalities		1.4E-1
	Construction Injuries		5.9E1
	Operation Fatalities		2.0E-1
	Operation Injuries		1.7E2

Table 3.1-101. Risks Associated with Routine Treatment of LLW at INEL Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8451	Dose (person-rem)	8.1E-4	
	Cancer Fatalities	4.0E-7	
	Cancer Incidence	1.4E-6	
	Genetic Effects	8.1E-8	
Noninvolved Worker MEI	Dose (rem)	6.7E-7	
	Cancer Fatalities	3.4E-10	
	Cancer Incidence	1.1E-9	
	Genetic Effects	6.7E-11	
Offsite Population 153061	Dose (person-rem)	2.7E-3	
	Cancer Fatalities	1.4E-6	
	Cancer Incidence	4.6E-6	
	Genetic Effects	2.7E-7	
Offsite MEI	Dose (rem)	3.3E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.7E-10	
	Genetic Effects	3.3E-11	
WM Workers 1809	Dose (FTE-rem)	4.2E2	
	Cancer Fatalities	1.7E-1	
	Cancer Incidence	5.8E-1	
	Genetic Effects	2.5E-2	
	Exposure Index		
	Construction Fatalities		1.5E-1
	Construction Injuries		6.7E1
	Operation Fatalities		2.2E-1
	Operation Injuries		1.9E2

Table 3.1-102. Risks Associated with Routine Treatment of LLW at KAPL-K Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3896	Dose (person-rem)	1.2E-2	
	Cancer Fatalities	6.2E-6	
	Cancer Incidence	2.1E-5	
	Genetic Effects	1.2E-6	
Noninvolved Worker MEI	Dose (rem)	5.8E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.8E-9	
	Genetic Effects	5.8E-10	
	Hazard Index		
Offsite Population 1290172	Dose (person-rem)	1.1	
	Cancer Fatalities	5.3E-4	
	Cancer Incidence	1.8E-3	
	Genetic Effects	1.1E-4	
Offsite MEI	Dose (rem)	2.4E-5	
	Cancer Fatalities	1.2E-8	
	Cancer Incidence	4.0E-8	
	Genetic Effects	2.4E-9	
	Hazard Index		
WM Workers 650	Dose (FTE-rem)	1.4E1	
	Cancer Fatalities	5.8E-3	
	Cancer Incidence	2.0E-2	
	Genetic Effects	8.7E-4	
	Exposure Index		
	Construction Fatalities		6.2E-2
	Construction Injuries		2.7E1
	Operation Fatalities		7.9E-2
	Operation Injuries		6.7E1

Table 3.1-103. Risks Associated with Routine Treatment of LLW at KCP Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 4410	Dose (person-rem)	2.4E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	4.1E-11	
	Genetic Effects	2.4E-12	
Noninvolved Worker MEI	Dose (rem)	1.7E-11	
	Cancer Fatalities	9.0E-15	
	Cancer Incidence	2.9E-14	
	Genetic Effects	0.00	
	Hazard Index		
Offsite Population 1729833	Dose (person-rem)	2.1E-6	
	Cancer Fatalities	1.1E-9	
	Cancer Incidence	3.6E-9	
	Genetic Effects	2.1E-10	
Offsite MEI	Dose (rem)	9.7E-11	
	Cancer Fatalities	4.8E-14	
	Cancer Incidence	1.6E-13	
	Genetic Effects	1.0E-14	
	Hazard Index		
WM Workers 11	Dose (FTE-rem)	7.3E-2	
	Cancer Fatalities	2.9E-5	
	Cancer Incidence	1.0E-4	
	Genetic Effects	4.4E-6	
	Exposure Index		
	Construction Fatalities		1.3E-3
	Construction Injuries		5.6E-1
	Operation Fatalities		1.3E-3
	Operation Injuries		1.1

Table 3.1-104. Risks Associated with Routine Treatment of LLW at K-25 Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3800	Dose (person-rem)	1.0E-6	
	Cancer Fatalities	5.0E-10	
	Cancer Incidence	1.7E-9	
	Genetic Effects	1.0E-10	
Noninvolved Worker MEI	Dose (rem)	9.2E-10	
	Cancer Fatalities	4.6E-13	
	Cancer Incidence	1.6E-12	
	Genetic Effects	9.2E-14	
	Hazard Index		
Offsite Population 871406	Dose (person-rem)	1.7E-5	
	Cancer Fatalities	8.6E-9	
	Cancer Incidence	2.9E-8	
	Genetic Effects	1.7E-9	
Offsite MEI	Dose (rem)	3.8E-10	
	Cancer Fatalities	1.9E-13	
	Cancer Incidence	6.4E-13	
	Genetic Effects	3.8E-14	
	Hazard Index		
WM Workers 582	Dose (FTE-rem)	8.8	
	Cancer Fatalities	3.5E-3	
	Cancer Incidence	1.2E-2	
	Genetic Effects	5.3E-4	
	Exposure Index		
	Construction Fatalities		5.0E-2
	Construction Injuries		2.2E1
	Operation Fatalities		7.0E-2
	Operation Injuries		6.0E1

Table 3.1–105. Risks Associated with Routine Treatment of LLW at LANL Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 11552	Dose (person-rem)	1.4	
	Cancer Fatalities	7.0E-4	
	Cancer Incidence	2.4E-3	
	Genetic Effects	1.4E-4	
Noninvolved Worker MEI	Dose (rem)	1.1E-3	
	Cancer Fatalities	5.3E-7	
	Cancer Incidence	1.8E-6	
	Genetic Effects	1.1E-7	
	Hazard Index		
Offsite Population 159152	Dose (person-rem)	1.6E1	
	Cancer Fatalities	7.8E-3	
	Cancer Incidence	2.7E-2	
	Genetic Effects	1.6E-3	
Offsite MEI	Dose (rem)	1.6E-3	
	Cancer Fatalities	8.2E-7	
	Cancer Incidence	2.8E-6	
	Genetic Effects	1.6E-7	
	Hazard Index		
WM Workers 2731	Dose (FTE-rem)	8.6E2	
	Cancer Fatalities	3.4E-1	
	Cancer Incidence	1.2	
	Genetic Effects	5.1E-2	
	Exposure Index		
	Construction Fatalities		2.6E-1
	Construction Injuries		1.1E2
	Operation Fatalities		3.3E-1
	Operation Injuries		2.8E2

Table 3.1-106. Risks Associated with Routine Treatment of LLW at LBL Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3940	Dose (person-rem)	5.4E-2	
	Cancer Fatalities	2.7E-5	
	Cancer Incidence	9.1E-5	
	Genetic Effects	5.4E-6	
Noninvolved Worker MEI	Dose (rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.1E-8	
	Genetic Effects	4.2E-9	
	Hazard Index		
Offsite Population 1586829	Dose (person-rem)	3.6E1	
	Cancer Fatalities	1.8E-2	
	Cancer Incidence	6.2E-2	
	Genetic Effects	3.6E-3	
Offsite MEI	Dose (rem)	5.7E-4	
	Cancer Fatalities	2.9E-7	
	Cancer Incidence	9.7E-7	
	Genetic Effects	5.7E-8	
	Hazard Index		
WM Workers 174	Dose (FTE-rem)	1.9E1	
	Cancer Fatalities	7.6E-3	
	Cancer Incidence	2.7E-2	
	Genetic Effects	1.1E-3	
	Exposure Index		
	Construction Fatalities		2.2E-2
	Construction Injuries		9.6
	Operation Fatalities		2.1E-2
	Operation Injuries		1.8E1

Table 3.1-107. Risks Associated with Routine Treatment of LLW at LLNL Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 9504	Dose (person-rem)	1.2E-1	
	Cancer Fatalities	6.0E-5	
	Cancer Incidence	2.0E-4	
	Genetic Effects	1.2E-5	
Noninvolved Worker MEI	Dose (rem)	4.1E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.0E-8	
	Genetic Effects	4.1E-9	
	Hazard Index		
Offsite Population 6324234	Dose (person-rem)	8.7	
	Cancer Fatalities	4.4E-3	
	Cancer Incidence	1.5E-2	
	Genetic Effects	8.7E-4	
Offsite MEI	Dose (rem)	1.4E-4	
	Cancer Fatalities	7.1E-8	
	Cancer Incidence	2.4E-7	
	Genetic Effects	1.4E-8	
	Hazard Index		
WM Workers 227	Dose (FTE-rem)	6.3	
	Cancer Fatalities	2.5E-3	
	Cancer Incidence	8.9E-3	
	Genetic Effects	3.8E-4	
	Exposure Index		
	Construction Fatalities		2.9E-2
	Construction Injuries		1.3E1
	Operation Fatalities		2.8E-2
	Operation Injuries		2.3E1

Table 3.1-108. Risks Associated with Routine Treatment of LLW at Mound Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1688	Dose (person-rem)	1.6E-6	
	Cancer Fatalities	8.0E-10	
	Cancer Incidence	2.7E-9	
	Genetic Effects	1.6E-10	
Noninvolved Worker MEI	Dose (rem)	2.5E-9	
	Cancer Fatalities	1.3E-12	
	Cancer Incidence	4.3E-12	
	Genetic Effects	2.5E-13	
	Hazard Index		
Offsite Population 3032983	Dose (person-rem)	2.1E-4	
	Cancer Fatalities	1.0E-7	
	Cancer Incidence	3.5E-7	
	Genetic Effects	2.1E-8	
Offsite MEI	Dose (rem)	1.2E-8	
	Cancer Fatalities	5.9E-12	
	Cancer Incidence	2.0E-11	
	Genetic Effects	1.2E-12	
	Hazard Index		
WM Workers 435	Dose (FTE-rem)	3.3	
	Cancer Fatalities	1.3E-3	
	Cancer Incidence	4.7E-3	
	Genetic Effects	2.0E-4	
	Exposure Index		
	Construction Fatalities		5.1E-2
	Construction Injuries		2.2E1
	Operation Fatalities		5.3E-2
	Operation Injuries		4.5E1

Table 3.1–109. Risks Associated with Routine Treatment of LLW at NTS Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3756	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
Noninvolved Worker MEI	Dose (rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
Offsite Population 14266	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
Offsite MEI	Dose (rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers 0	Dose (FTE-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Exposure Index		
	Construction Fatalities		0.00
	Construction Injuries		0.00
	Operation Fatalities		0.00
	Operation Injuries		0.00

Table 3.1-110. Risks Associated with Routine Treatment of LLW at ORNL Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3809	Dose (person-rem)	1.0E-3	
	Cancer Fatalities	5.0E-7	
	Cancer Incidence	1.7E-6	
	Genetic Effects	1.0E-7	
Noninvolved Worker MEI	Dose (rem)	9.1E-7	
	Cancer Fatalities	4.6E-10	
	Cancer Incidence	1.6E-9	
	Genetic Effects	9.1E-11	
	Hazard Index		
Offsite Population 881652	Dose (person-rem)	3.7E-2	
	Cancer Fatalities	1.9E-5	
	Cancer Incidence	6.3E-5	
	Genetic Effects	3.7E-6	
Offsite MEI	Dose (rem)	1.1E-6	
	Cancer Fatalities	5.7E-10	
	Cancer Incidence	1.9E-9	
	Genetic Effects	1.1E-10	
	Hazard Index		
WM Workers 4855	Dose (FTE-rem)	3.2E2	
	Cancer Fatalities	1.3E-1	
	Cancer Incidence	4.5E-1	
	Genetic Effects	1.9E-2	
	Exposure Index		
	Construction Fatalities		4.7E-1
	Construction Injuries		2.0E2
	Operation Fatalities		5.9E-1
	Operation Injuries		5.0E2

Table 3.1-111. Risks Associated with Routine Treatment of LLW at Pantex Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 2825	Dose (person-rem)	3.3E-5	
	Cancer Fatalities	1.6E-8	
	Cancer Incidence	5.6E-8	
	Genetic Effects	3.3E-9	
Noninvolved Worker MEI	Dose (rem)	6.3E-8	
	Cancer Fatalities	3.1E-11	
	Cancer Incidence	1.1E-10	
	Genetic Effects	6.3E-12	
	Hazard Index		
Offsite Population 265185	Dose (person-rem)	2.2E-4	
	Cancer Fatalities	1.1E-7	
	Cancer Incidence	3.7E-7	
	Genetic Effects	2.2E-8	
Offsite MEI	Dose (rem)	1.8E-8	
	Cancer Fatalities	9.2E-12	
	Cancer Incidence	3.1E-11	
	Genetic Effects	1.8E-12	
	Hazard Index		
WM Workers 675	Dose (FTE-rem)	6.4	
	Cancer Fatalities	2.6E-3	
	Cancer Incidence	9.0E-3	
	Genetic Effects	3.9E-4	
	Exposure Index		
	Construction Fatalities		6.1E-2
	Construction Injuries		2.7E1
	Operation Fatalities		8.2E-2
	Operation Injuries		6.9E1

Table 3.1-112. Risks Associated with Routine Treatment of LLW at PGDP Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1952	Dose (person-rem)	3.3E-6	
	Cancer Fatalities	1.7E-9	
	Cancer Incidence	5.7E-9	
	Genetic Effects	3.3E-10	
Noninvolved Worker MEI	Dose (rem)	4.1E-9	
	Cancer Fatalities	2.1E-12	
	Cancer Incidence	7.0E-12	
	Genetic Effects	4.1E-13	
	Hazard Index		
Offsite Population 500502	Dose (person-rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.2E-8	
	Genetic Effects	4.2E-9	
Offsite MEI	Dose (rem)	4.7E-9	
	Cancer Fatalities	2.4E-12	
	Cancer Incidence	8.0E-12	
	Genetic Effects	4.7E-13	
	Hazard Index		
WM Workers 497	Dose (FTE-rem)	3.7	
	Cancer Fatalities	1.5E-3	
	Cancer Incidence	5.2E-3	
	Genetic Effects	2.2E-4	
	Exposure Index		
	Construction Fatalities		4.9E-2
	Construction Injuries		2.2E1
	Operation Fatalities		6.0E-2
	Operation Injuries		5.1E1

Table 3.1–113. Risks Associated with Routine Treatment of LLW at Pinellas Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1167	Dose (person-rem)	4.2E-8	
	Cancer Fatalities	2.1E-11	
	Cancer Incidence	7.2E-11	
	Genetic Effects	4.2E-12	
Noninvolved Worker MEI	Dose (rem)	8.7E-11	
	Cancer Fatalities	4.4E-14	
	Cancer Incidence	1.5E-13	
	Genetic Effects	9.0E-15	
	Hazard Index		
Offsite Population 2532174	Dose (person-rem)	3.5E-5	
	Cancer Fatalities	1.8E-8	
	Cancer Incidence	6.0E-8	
	Genetic Effects	3.5E-9	
Offsite MEI	Dose (rem)	7.7E-10	
	Cancer Fatalities	3.8E-13	
	Cancer Incidence	1.3E-12	
	Genetic Effects	7.7E-14	
	Hazard Index		
WM Workers 21	Dose (FTE-rem)	1.4E-1	
	Cancer Fatalities	5.6E-5	
	Cancer Incidence	2.0E-4	
	Genetic Effects	8.4E-6	
	Exposure Index		
	Construction Fatalities		2.5E-3
	Construction Injuries		1.1
	Operation Fatalities		2.5E-3
	Operation Injuries		2.1

Table 3.1-114. Risks Associated with Routine Treatment of LLW at Ports Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3226	Dose (person-rem)	1.2	
	Cancer Fatalities	5.9E-4	
	Cancer Incidence	2.0E-3	
	Genetic Effects	1.2E-4	
Noninvolved Worker MEI	Dose (rem)	6.8E-4	
	Cancer Fatalities	3.4E-7	
	Cancer Incidence	1.2E-6	
	Genetic Effects	6.8E-8	
	Hazard Index		
Offsite Population 639602	Dose (person-rem)	3.8E1	
	Cancer Fatalities	1.9E-2	
	Cancer Incidence	6.4E-2	
	Genetic Effects	3.8E-3	
Offsite MEI	Dose (rem)	4.6E-3	
	Cancer Fatalities	2.3E-6	
	Cancer Incidence	7.9E-6	
	Genetic Effects	4.6E-7	
	Hazard Index		
WM Workers 3483	Dose (FTE-rem)	9.3E1	
	Cancer Fatalities	3.7E-2	
	Cancer Incidence	1.3E-1	
	Genetic Effects	5.6E-3	
	Exposure Index		
	Construction Fatalities		3.0E-1
	Construction Injuries		1.3E2
	Operation Fatalities		4.2E-1
	Operation Injuries		3.6E2

Table 3.1–115. Risks Associated with Routine Treatment of LLW at RFETS Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 6993	Dose (person-rem)	1.9E-2	
	Cancer Fatalities	9.5E-6	
	Cancer Incidence	3.2E-5	
	Genetic Effects	1.9E-6	
Noninvolved Worker MEI	Dose (rem)	1.1E-5	
	Cancer Fatalities	5.7E-9	
	Cancer Incidence	1.9E-8	
	Genetic Effects	1.1E-9	
	Hazard Index		
Offsite Population 2171877	Dose (person-rem)	3.7E-1	
	Cancer Fatalities	1.9E-4	
	Cancer Incidence	6.3E-4	
	Genetic Effects	3.7E-5	
Offsite MEI	Dose (rem)	5.1E-6	
	Cancer Fatalities	2.5E-9	
	Cancer Incidence	8.6E-9	
	Genetic Effects	5.1E-10	
	Hazard Index		
WM Workers 800	Dose (FTE-rem)	2.9	
	Cancer Fatalities	1.1E-3	
	Cancer Incidence	4.0E-3	
	Genetic Effects	1.7E-4	
	Exposure Index		
	Construction Fatalities		1.2E-1
	Construction Injuries		5.2E1
	Operation Fatalities		9.7E-2
	Operation Injuries		8.2E1

Table 3.1-116. Risks Associated with Routine Treatment of LLW at SNL-NM Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 10576	Dose (person-rem)	6.1E-5	
	Cancer Fatalities	3.0E-8	
	Cancer Incidence	1.0E-7	
	Genetic Effects	6.1E-9	
Noninvolved Worker MEI	Dose (rem)	2.6E-8	
	Cancer Fatalities	1.3E-11	
	Cancer Incidence	4.3E-11	
	Genetic Effects	2.6E-12	
	Hazard Index		
Offsite Population 610714	Dose (person-rem)	3.6E-3	
	Cancer Fatalities	1.8E-6	
	Cancer Incidence	6.2E-6	
	Genetic Effects	3.6E-7	
Offsite MEI	Dose (rem)	1.4E-7	
	Cancer Fatalities	7.2E-11	
	Cancer Incidence	2.4E-10	
	Genetic Effects	1.4E-11	
	Hazard Index		
WM Workers 210	Dose (FTE-rem)	1.0	
	Cancer Fatalities	4.1E-4	
	Cancer Incidence	1.5E-3	
	Genetic Effects	6.2E-5	
	Exposure Index		
	Construction Fatalities		2.5E-2
	Construction Injuries		1.1E1
	Operation Fatalities		2.5E-2
	Operation Injuries		2.2E1

Table 3.1-117. Risks Associated with Routine Treatment of LLW at SRS Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 15996	Dose (person-rem)	6.7E-2	
	Cancer Fatalities	3.3E-5	
	Cancer Incidence	1.1E-4	
	Genetic Effects	6.7E-6	
Noninvolved Worker MEI	Dose (rem)	5.9E-5	
	Cancer Fatalities	3.0E-8	
	Cancer Incidence	1.0E-7	
	Genetic Effects	5.9E-9	
	Hazard Index		
Offsite Population 620618	Dose (person-rem)	1.2	
	Cancer Fatalities	6.1E-4	
	Cancer Incidence	2.1E-3	
	Genetic Effects	1.2E-4	
Offsite MEI	Dose (rem)	1.2E-5	
	Cancer Fatalities	5.7E-9	
	Cancer Incidence	2.0E-8	
	Genetic Effects	1.2E-9	
	Hazard Index		
WM Workers 2598	Dose (FTE-rem)	6.9E2	
	Cancer Fatalities	2.8E-1	
	Cancer Incidence	9.6E-1	
	Genetic Effects	4.1E-2	
	Exposure Index		
	Construction Fatalities		2.4E-1
	Construction Injuries		1.1E2
	Operation Fatalities		3.1E-1
	Operation Injuries		2.7E2

Table 3.1-118. Risks Associated with Routine Treatment of LLW at Y-12 Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 7699	Dose (person-rem)	5.7E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.7E-9	
	Genetic Effects	5.7E-10	
Noninvolved Worker MEI	Dose (rem)	1.9E-9	
	Cancer Fatalities	9.4E-13	
	Cancer Incidence	3.2E-12	
	Genetic Effects	1.9E-13	
	Hazard Index		
Offsite Population 895379	Dose (person-rem)	4.1E-5	
	Cancer Fatalities	2.0E-8	
	Cancer Incidence	6.9E-8	
	Genetic Effects	4.1E-9	
Offsite MEI	Dose (rem)	1.5E-9	
	Cancer Fatalities	7.5E-13	
	Cancer Incidence	2.6E-12	
	Genetic Effects	1.5E-13	
	Hazard Index		
WM Workers 853	Dose (FTE-rem)	1.3E1	
	Cancer Fatalities	5.3E-3	
	Cancer Incidence	1.8E-2	
	Genetic Effects	7.9E-4	
	Exposure Index		
	Construction Fatalities		7.1E-2
	Construction Injuries		3.1E1
	Operation Fatalities		1.0E-1
	Operation Injuries		8.8E1

Table 3.1-119. Risks Associated with Routine Treatment of LLW at ANL-E Under Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 5571	Dose (person-rem)	2.0E-5	
	Cancer Fatalities	9.8E-9	
	Cancer Incidence	3.3E-8	
	Genetic Effects	2.0E-9	
Noninvolved Worker MEI	Dose (rem)	2.0E-8	
	Cancer Fatalities	1.0E-11	
	Cancer Incidence	3.4E-11	
	Genetic Effects	2.0E-12	
	Hazard Index		
Offsite Population 7939785	Dose (person-rem)	5.0E-3	
	Cancer Fatalities	2.5E-6	
	Cancer Incidence	8.5E-6	
	Genetic Effects	5.0E-7	
Offsite MEI	Dose (rem)	2.8E-8	
	Cancer Fatalities	1.4E-11	
	Cancer Incidence	4.7E-11	
	Genetic Effects	2.8E-12	
	Hazard Index		
WM Workers 224	Dose (FTE-rem)	7.9E1	
	Cancer Fatalities	3.2E-2	
	Cancer Incidence	1.1E-1	
	Genetic Effects	4.8E-3	
	Exposure Index		
	Construction Fatalities		2.4E-2
	Construction Injuries		1.1E1
	Operation Fatalities		2.7E-2
	Operation Injuries		2.3E1

Table 3.1-120. Risks Associated with Routine Treatment of LLW at Hanford Under Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8674	Dose (person-rem)	9.7E-1	
	Cancer Fatalities	4.9E-4	
	Cancer Incidence	1.7E-3	
	Genetic Effects	9.7E-5	
Noninvolved Worker MEI	Dose (rem)	1.7E-3	
	Cancer Fatalities	8.5E-7	
	Cancer Incidence	2.9E-6	
	Genetic Effects	1.7E-7	
	Hazard Index		
Offsite Population 377645	Dose (person-rem)	9.4E1	
	Cancer Fatalities	4.7E-2	
	Cancer Incidence	1.6E-1	
	Genetic Effects	9.4E-3	
Offsite MEI	Dose (rem)	1.9E-3	
	Cancer Fatalities	9.6E-7	
	Cancer Incidence	3.3E-6	
	Genetic Effects	1.9E-7	
	Hazard Index		
WM Workers 1634	Dose (FTE-rem)	5.2E2	
	Cancer Fatalities	2.1E-1	
	Cancer Incidence	7.2E-1	
	Genetic Effects	3.1E-2	
	Exposure Index		
	Construction Fatalities		1.4E-1
	Construction Injuries		5.9E1
	Operation Fatalities		2.0E-1
	Operation Injuries		1.7E2

Table 3.1–121. Risks Associated with Routine Treatment of LLW at INEL Under Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8451	Dose (person-rem)	2.3E-1	
	Cancer Fatalities	1.2E-4	
	Cancer Incidence	4.0E-4	
	Genetic Effects	2.3E-5	
Noninvolved Worker MEI	Dose (rem)	2.0E-4	
	Cancer Fatalities	1.0E-7	
	Cancer Incidence	3.4E-7	
	Genetic Effects	2.0E-8	
	Hazard Index		
Offsite Population 153061	Dose (person-rem)	8.2E-1	
	Cancer Fatalities	4.1E-4	
	Cancer Incidence	1.4E-3	
	Genetic Effects	8.2E-5	
Offsite MEI	Dose (rem)	1.0E-4	
	Cancer Fatalities	5.1E-8	
	Cancer Incidence	1.7E-7	
	Genetic Effects	1.0E-8	
	Hazard Index		
WM Workers 3954	Dose (FTE-rem)	1.3E3	
	Cancer Fatalities	5.3E-1	
	Cancer Incidence	1.9	
	Genetic Effects	8.0E-2	
	Exposure Index		
	Construction Fatalities		3.3E-1
	Construction Injuries		1.4E2
	Operation Fatalities		4.8E-1
	Operation Injuries		4.1E2

Table 3.1-122. Risks Associated with Routine Treatment of LLW at KAPL-K Under Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3896	Dose (person-rem)	1.2E-2	
	Cancer Fatalities	6.2E-6	
	Cancer Incidence	2.1E-5	
	Genetic Effects	1.2E-6	
Noninvolved Worker MEI	Dose (rem)	5.8E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.8E-9	
	Genetic Effects	5.8E-10	
	Hazard Index		
Offsite Population 1290172	Dose (person-rem)	1.1	
	Cancer Fatalities	5.3E-4	
	Cancer Incidence	1.8E-3	
	Genetic Effects	1.1E-4	
Offsite MEI	Dose (rem)	2.4E-5	
	Cancer Fatalities	1.2E-8	
	Cancer Incidence	4.0E-8	
	Genetic Effects	2.4E-9	
	Hazard Index		
WM Workers 650	Dose (FTE-rem)	1.4E1	
	Cancer Fatalities	5.8E-3	
	Cancer Incidence	2.0E-2	
	Genetic Effects	8.7E-4	
	Exposure Index		
	Construction Fatalities		6.2E-2
	Construction Injuries		2.7E1
	Operation Fatalities		7.9E-2
	Operation Injuries		6.7E1

Table 3.1–123. Risks Associated with Routine Treatment of LLW at KCP Under Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 4410	Dose (person-rem)	2.4E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	4.1E-11	
	Genetic Effects	2.4E-12	
Noninvolved Worker MEI	Dose (rem)	1.7E-11	
	Cancer Fatalities	9.0E-15	
	Cancer Incidence	2.9E-14	
	Genetic Effects	0.00	
	Hazard Index		
Offsite Population 1729833	Dose (person-rem)	2.1E-6	
	Cancer Fatalities	1.1E-9	
	Cancer Incidence	3.6E-9	
	Genetic Effects	2.1E-10	
Offsite MEI	Dose (rem)	9.7E-11	
	Cancer Fatalities	4.8E-14	
	Cancer Incidence	1.6E-13	
	Genetic Effects	1.0E-14	
	Hazard Index		
WM Workers 11	Dose (FTE-rem)	7.3E-2	
	Cancer Fatalities	2.9E-5	
	Cancer Incidence	1.0E-4	
	Genetic Effects	4.4E-6	
	Exposure Index		
	Construction Fatalities		1.3E-3
	Construction Injuries		5.6E-1
	Operation Fatalities		1.3E-3
	Operation Injuries		1.1

Table 3.1-124. Risks Associated with Routine Treatment of LLW at K-25 Under Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3800	Dose (person-rem)	1.0E-6	
	Cancer Fatalities	5.0E-10	
	Cancer Incidence	1.7E-9	
	Genetic Effects	1.0E-10	
Noninvolved Worker MEI	Dose (rem)	9.2E-10	
	Cancer Fatalities	4.6E-13	
	Cancer Incidence	1.6E-12	
	Genetic Effects	9.2E-14	
	Hazard Index		
Offsite Population 871406	Dose (person-rem)	1.7E-5	
	Cancer Fatalities	8.6E-9	
	Cancer Incidence	2.9E-8	
	Genetic Effects	1.7E-9	
Offsite MEI	Dose (rem)	3.8E-10	
	Cancer Fatalities	1.9E-13	
	Cancer Incidence	6.4E-13	
	Genetic Effects	3.8E-14	
	Hazard Index		
WM Workers 582	Dose (FTE-rem)	8.8	
	Cancer Fatalities	3.5E-3	
	Cancer Incidence	1.2E-2	
	Genetic Effects	5.3E-4	
	Exposure Index		
	Construction Fatalities		5.0E-2
	Construction Injuries		2.2E1
	Operation Fatalities		7.0E-2
	Operation Injuries		6.0E1

Table 3.1-125. Risks Associated with Routine Treatment of LLW at LANL Under Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 11552	Dose (person-rem)	2.8E-2	
	Cancer Fatalities	1.4E-5	
	Cancer Incidence	4.8E-5	
	Genetic Effects	2.8E-6	
Noninvolved Worker MEI	Dose (rem)	2.2E-5	
	Cancer Fatalities	1.1E-8	
	Cancer Incidence	3.7E-8	
	Genetic Effects	2.2E-9	
	Hazard Index		
Offsite Population 159152	Dose (person-rem)	4.2E-1	
	Cancer Fatalities	2.1E-4	
	Cancer Incidence	7.1E-4	
	Genetic Effects	4.2E-5	
Offsite MEI	Dose (rem)	4.4E-5	
	Cancer Fatalities	2.2E-8	
	Cancer Incidence	7.5E-8	
	Genetic Effects	4.4E-9	
	Hazard Index		
WM Workers 902	Dose (FTE-rem)	3.5E2	
	Cancer Fatalities	1.4E-1	
	Cancer Incidence	4.9E-1	
	Genetic Effects	2.1E-2	
	Exposure Index		
	Construction Fatalities		8.0E-2
	Construction Injuries		3.5E1
	Operation Fatalities		1.1E-1
	Operation Injuries		9.3E1

Table 3.1-126. Risks Associated with Routine Treatment of LLW at LBL Under Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3940	Dose (person-rem)	5.4E-2	
	Cancer Fatalities	2.7E-5	
	Cancer Incidence	9.1E-5	
	Genetic Effects	5.4E-6	
Noninvolved Worker MEI	Dose (rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.1E-8	
	Genetic Effects	4.2E-9	
	Hazard Index		
Offsite Population 1586829	Dose (person-rem)	3.6E1	
	Cancer Fatalities	1.8E-2	
	Cancer Incidence	6.2E-2	
	Genetic Effects	3.6E-3	
Offsite MEI	Dose (rem)	5.7E-4	
	Cancer Fatalities	2.9E-7	
	Cancer Incidence	9.7E-7	
	Genetic Effects	5.7E-8	
	Hazard Index		
WM Workers 174	Dose (FTE-rem)	1.9E1	
	Cancer Fatalities	7.6E-3	
	Cancer Incidence	2.7E-2	
	Genetic Effects	1.1E-3	
	Exposure Index		
	Construction Fatalities		2.2E-2
	Construction Injuries		9.6
	Operation Fatalities		2.1E-2
	Operation Injuries		1.8E1

Table 3.1–127. Risks Associated with Routine Treatment of LLW at LLNL Under Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 9504	Dose (person-rem)	1.2E-1	
	Cancer Fatalities	6.0E-5	
	Cancer Incidence	2.0E-4	
	Genetic Effects	1.2E-5	
Noninvolved Worker MEI	Dose (rem)	4.1E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.0E-8	
	Genetic Effects	4.1E-9	
	Hazard Index		
Offsite Population 6324234	Dose (person-rem)	8.7	
	Cancer Fatalities	4.4E-3	
	Cancer Incidence	1.5E-2	
	Genetic Effects	8.7E-4	
Offsite MEI	Dose (rem)	1.4E-4	
	Cancer Fatalities	7.1E-8	
	Cancer Incidence	2.4E-7	
	Genetic Effects	1.4E-8	
	Hazard Index		
WM Workers 227	Dose (FTE-rem)	6.3	
	Cancer Fatalities	2.5E-3	
	Cancer Incidence	8.9E-3	
	Genetic Effects	3.8E-4	
	Exposure Index		
	Construction Fatalities		2.9E-2
	Construction Injuries		1.3E1
	Operation Fatalities		2.8E-2
	Operation Injuries		2.3E1

Table 3.1-128. Risks Associated with Routine Treatment of LLW at Mound Under Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1688	Dose (person-rem)	1.6E-6	
	Cancer Fatalities	8.0E-10	
	Cancer Incidence	2.7E-9	
	Genetic Effects	1.6E-10	
Noninvolved Worker MEI	Dose (rem)	2.5E-9	
	Cancer Fatalities	1.3E-12	
	Cancer Incidence	4.3E-12	
	Genetic Effects	2.5E-13	
	Hazard Index		
Offsite Population 3032983	Dose (person-rem)	2.1E-4	
	Cancer Fatalities	1.0E-7	
	Cancer Incidence	3.5E-7	
	Genetic Effects	2.1E-8	
Offsite MEI	Dose (rem)	1.2E-8	
	Cancer Fatalities	5.9E-12	
	Cancer Incidence	2.0E-11	
	Genetic Effects	1.2E-12	
	Hazard Index		
WM Workers 435	Dose (FTE-rem)	3.3	
	Cancer Fatalities	1.3E-3	
	Cancer Incidence	4.7E-3	
	Genetic Effects	2.0E-4	
	Exposure Index		
	Construction Fatalities		5.1E-2
	Construction Injuries		2.2E1
	Operation Fatalities		5.3E-2
	Operation Injuries		4.5E1

Table 3.1-129. Risks Associated with Routine Treatment of LLW at NTS Under Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3756	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
Noninvolved Worker MEI	Dose (rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
Offsite Population 14266	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
Offsite MEI	Dose (rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers 0	Dose (FTE-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Exposure Index		
	Construction Fatalities		0.00
	Construction Injuries		0.00
	Operation Fatalities		0.00
	Operation Injuries		0.00

Table 3.1–130. Risks Associated with Routine Treatment of LLW at ORNL Under Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3809	Dose (person-rem)	1.4	
	Cancer Fatalities	6.8E-4	
	Cancer Incidence	2.3E-3	
	Genetic Effects	1.4E-4	
Noninvolved Worker MEI	Dose (rem)	1.2E-3	
	Cancer Fatalities	6.1E-7	
	Cancer Incidence	2.1E-6	
	Genetic Effects	1.2E-7	
	Hazard Index		
Offsite Population 881652	Dose (person-rem)	9.2E1	
	Cancer Fatalities	4.6E-2	
	Cancer Incidence	1.6E-1	
	Genetic Effects	9.2E-3	
Offsite MEI	Dose (rem)	2.9E-3	
	Cancer Fatalities	1.4E-6	
	Cancer Incidence	4.9E-6	
	Genetic Effects	2.9E-7	
	Hazard Index		
WM Workers 7524	Dose (FTE-rem)	4.0E2	
	Cancer Fatalities	1.6E-1	
	Cancer Incidence	5.6E-1	
	Genetic Effects	2.4E-2	
	Exposure Index		
	Construction Fatalities		7.0E-1
	Construction Injuries		3.1E2
	Operation Fatalities		9.1E-1
	Operation Injuries		7.7E2

Table 3.1-131. Risks Associated with Routine Treatment of LLW at Pantex Under Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 2825	Dose (person-rem)	3.3E-5	
	Cancer Fatalities	1.6E-8	
	Cancer Incidence	5.6E-8	
	Genetic Effects	3.3E-9	
Noninvolved Worker MEI	Dose (rem)	6.3E-8	
	Cancer Fatalities	3.1E-11	
	Cancer Incidence	1.1E-10	
	Genetic Effects	6.3E-12	
	Hazard Index		
Offsite Population 265185	Dose (person-rem)	2.2E-4	
	Cancer Fatalities	1.1E-7	
	Cancer Incidence	3.7E-7	
	Genetic Effects	2.2E-8	
Offsite MEI	Dose (rem)	1.8E-8	
	Cancer Fatalities	9.2E-12	
	Cancer Incidence	3.1E-11	
	Genetic Effects	1.8E-12	
	Hazard Index		
WM Workers 675	Dose (FTE-rem)	6.4	
	Cancer Fatalities	2.6E-3	
	Cancer Incidence	9.0E-3	
	Genetic Effects	3.9E-4	
	Exposure Index		
	Construction Fatalities		6.1E-2
	Construction Injuries		2.7E1
	Operation Fatalities		8.2E-2
	Operation Injuries		6.9E1

Table 3.1-132. Risks Associated with Routine Treatment of LLW at PGDP Under Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1952	Dose (person-rem)	3.3E-6	
	Cancer Fatalities	1.7E-9	
	Cancer Incidence	5.7E-9	
	Genetic Effects	3.3E-10	
Noninvolved Worker MEI	Dose (rem)	4.1E-9	
	Cancer Fatalities	2.1E-12	
	Cancer Incidence	7.0E-12	
	Genetic Effects	4.1E-13	
	Hazard Index		
Offsite Population 500502	Dose (person-rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.2E-8	
	Genetic Effects	4.2E-9	
Offsite MEI	Dose (rem)	4.7E-9	
	Cancer Fatalities	2.4E-12	
	Cancer Incidence	8.0E-12	
	Genetic Effects	4.7E-13	
	Hazard Index		
WM Workers 497	Dose (FTE-rem)	3.7	
	Cancer Fatalities	1.5E-3	
	Cancer Incidence	5.2E-3	
	Genetic Effects	2.2E-4	
	Exposure Index		
	Construction Fatalities		4.9E-2
	Construction Injuries		2.2E1
	Operation Fatalities		6.0E-2
	Operation Injuries		5.1E1

Table 3.1-133. Risks Associated with Routine Treatment of LLW at Pinellas Under Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1167	Dose (person-rem)	4.2E-8	
	Cancer Fatalities	2.1E-11	
	Cancer Incidence	7.2E-11	
	Genetic Effects	4.2E-12	
Noninvolved Worker MEI	Dose (rem)	8.7E-11	
	Cancer Fatalities	4.4E-14	
	Cancer Incidence	1.5E-13	
	Genetic Effects	9.0E-15	
	Hazard Index		
Offsite Population 2532174	Dose (person-rem)	3.5E-5	
	Cancer Fatalities	1.8E-8	
	Cancer Incidence	6.0E-8	
	Genetic Effects	3.5E-9	
Offsite MEI	Dose (rem)	7.7E-10	
	Cancer Fatalities	3.8E-13	
	Cancer Incidence	1.3E-12	
	Genetic Effects	7.7E-14	
	Hazard Index		
WM Workers 21	Dose (FTE-rem)	1.4E-1	
	Cancer Fatalities	5.6E-5	
	Cancer Incidence	2.0E-4	
	Genetic Effects	8.4E-6	
	Exposure Index		
	Construction Fatalities		2.5E-3
	Construction Injuries		1.1
	Operation Fatalities		2.5E-3
	Operation Injuries		2.1

Table 3.1-134. Risks Associated with Routine Treatment of LLW at Ports Under Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3226	Dose (person-rem)	3.7E-7	
	Cancer Fatalities	1.8E-10	
	Cancer Incidence	6.2E-10	
	Genetic Effects	3.7E-11	
Noninvolved Worker MEI	Dose (rem)	2.1E-10	
	Cancer Fatalities	1.0E-13	
	Cancer Incidence	3.5E-13	
	Genetic Effects	2.1E-14	
	Hazard Index		
Offsite Population 639602	Dose (person-rem)	3.5E-6	
	Cancer Fatalities	1.8E-9	
	Cancer Incidence	5.9E-9	
	Genetic Effects	3.5E-10	
Offsite MEI	Dose (rem)	4.4E-10	
	Cancer Fatalities	2.2E-13	
	Cancer Incidence	7.5E-13	
	Genetic Effects	4.4E-14	
	Hazard Index		
WM Workers 1087	Dose (FTE-rem)	1.1E1	
	Cancer Fatalities	4.6E-3	
	Cancer Incidence	1.6E-2	
	Genetic Effects	6.8E-4	
	Exposure Index		
	Construction Fatalities		1.0E-1
	Construction Injuries		4.4E1
	Operation Fatalities		1.3E-1
	Operation Injuries		1.1E2

Table 3.1-135. Risks Associated with Routine Treatment of LLW at RFETS Under Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 6993	Dose (person-rem)	4.1E-5	
	Cancer Fatalities	2.0E-8	
	Cancer Incidence	6.9E-8	
	Genetic Effects	4.1E-9	
Noninvolved Worker MEI	Dose (rem)	2.5E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	4.2E-11	
	Genetic Effects	2.5E-12	
	Hazard Index		
Offsite Population 2171877	Dose (person-rem)	8.0E-4	
	Cancer Fatalities	4.0E-7	
	Cancer Incidence	1.4E-6	
	Genetic Effects	8.0E-8	
Offsite MEI	Dose (rem)	1.1E-8	
	Cancer Fatalities	5.4E-12	
	Cancer Incidence	1.8E-11	
	Genetic Effects	1.1E-12	
	Hazard Index		
WM Workers 344	Dose (FTE-rem)	2.9	
	Cancer Fatalities	1.2E-3	
	Cancer Incidence	4.0E-3	
	Genetic Effects	1.7E-4	
	Exposure Index		
	Construction Fatalities		3.8E-2
	Construction Injuries		1.7E1
	Operation Fatalities		4.2E-2
	Operation Injuries		3.5E1

Table 3.1-136. Risks Associated with Routine Treatment of LLW at SNL-NM Under Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 10576	Dose (person-rem)	6.1E-5	
	Cancer Fatalities	3.0E-8	
	Cancer Incidence	1.0E-7	
	Genetic Effects	6.1E-9	
Noninvolved Worker MEI	Dose (rem)	2.6E-8	
	Cancer Fatalities	1.3E-11	
	Cancer Incidence	4.3E-11	
	Genetic Effects	2.6E-12	
	Hazard Index		
Offsite Population 610714	Dose (person-rem)	3.6E-3	
	Cancer Fatalities	1.8E-6	
	Cancer Incidence	6.2E-6	
	Genetic Effects	3.6E-7	
Offsite MEI	Dose (rem)	1.4E-7	
	Cancer Fatalities	7.2E-11	
	Cancer Incidence	2.4E-10	
	Genetic Effects	1.4E-11	
	Hazard Index		
WM Workers 210	Dose (FTE-rem)	1.0	
	Cancer Fatalities	4.1E-4	
	Cancer Incidence	1.5E-3	
	Genetic Effects	6.2E-5	
	Exposure Index		
	Construction Fatalities		2.5E-2
	Construction Injuries		1.1E1
	Operation Fatalities		2.5E-2
	Operation Injuries		2.2E1

Table 3.1-137. Risks Associated with Routine Treatment of LLW at SRS Under Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 15996	Dose (person-rem)	6.7E-2	
	Cancer Fatalities	3.3E-5	
	Cancer Incidence	1.1E-4	
	Genetic Effects	6.7E-6	
Noninvolved Worker MEI	Dose (rem)	5.9E-5	
	Cancer Fatalities	3.0E-8	
	Cancer Incidence	1.0E-7	
	Genetic Effects	5.9E-9	
	Hazard Index		
Offsite Population 620618	Dose (person-rem)	1.2	
	Cancer Fatalities	6.1E-4	
	Cancer Incidence	2.1E-3	
	Genetic Effects	1.2E-4	
Offsite MEI	Dose (rem)	1.2E-5	
	Cancer Fatalities	5.7E-9	
	Cancer Incidence	2.0E-8	
	Genetic Effects	1.2E-9	
	Hazard Index		
WM Workers 2598	Dose (FTE-rem)	6.9E2	
	Cancer Fatalities	2.8E-1	
	Cancer Incidence	9.6E-1	
	Genetic Effects	4.1E-2	
	Exposure Index		
	Construction Fatalities		2.4E-1
	Construction Injuries		1.1E2
	Operation Fatalities		3.1E-1
	Operation Injuries		2.7E2

Table 3.1-138. Risks Associated with Routine Treatment of LLW at Y-12 Under Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 7699	Dose (person-rem)	5.7E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.7E-9	
	Genetic Effects	5.7E-10	
Noninvolved Worker MEI	Dose (rem)	1.9E-9	
	Cancer Fatalities	9.4E-13	
	Cancer Incidence	3.2E-12	
	Genetic Effects	1.9E-13	
	Hazard Index		
Offsite Population 895379	Dose (person-rem)	4.1E-5	
	Cancer Fatalities	2.0E-8	
	Cancer Incidence	6.9E-8	
	Genetic Effects	4.1E-9	
Offsite MEI	Dose (rem)	1.5E-9	
	Cancer Fatalities	7.5E-13	
	Cancer Incidence	2.6E-12	
	Genetic Effects	1.5E-13	
	Hazard Index		
WM Workers 853	Dose (FTE-rem)	1.3E1	
	Cancer Fatalities	5.3E-3	
	Cancer Incidence	1.8E-2	
	Genetic Effects	7.9E-4	
	Exposure Index		
	Construction Fatalities		7.1E-2
	Construction Injuries		3.1E1
	Operation Fatalities		1.0E-1
	Operation Injuries		8.8E1

Table 3.1-139. Risks Associated with Routine Treatment of LLW at ANL-E Under Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 5571	Dose (person-rem)	2.0E-5	
	Cancer Fatalities	9.8E-9	
	Cancer Incidence	3.3E-8	
	Genetic Effects	2.0E-9	
Noninvolved Worker MEI	Dose (rem)	2.0E-8	
	Cancer Fatalities	1.0E-11	
	Cancer Incidence	3.4E-11	
	Genetic Effects	2.0E-12	
	Hazard Index		
Offsite Population 7939785	Dose (person-rem)	5.0E-3	
	Cancer Fatalities	2.5E-6	
	Cancer Incidence	8.5E-6	
	Genetic Effects	5.0E-7	
Offsite MEI	Dose (rem)	2.8E-8	
	Cancer Fatalities	1.4E-11	
	Cancer Incidence	4.7E-11	
	Genetic Effects	2.8E-12	
	Hazard Index		
WM Workers 224	Dose (FTE-rem)	7.9E1	
	Cancer Fatalities	3.2E-2	
	Cancer Incidence	1.1E-1	
	Genetic Effects	4.8E-3	
	Exposure Index		
	Construction Fatalities		2.4E-2
	Construction Injuries		1.1E1
	Operation Fatalities		2.7E-2
	Operation Injuries		2.3E1

Table 3.1-140. Risks Associated with Routine Treatment of LLW at Hanford Under Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8674	Dose (person-rem)	1.9E-4	
	Cancer Fatalities	9.6E-8	
	Cancer Incidence	3.3E-7	
	Genetic Effects	1.9E-8	
Noninvolved Worker MEI	Dose (rem)	3.3E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.6E-10	
	Genetic Effects	3.3E-11	
	Hazard Index		
Offsite Population 377645	Dose (person-rem)	5.4E-3	
	Cancer Fatalities	2.7E-6	
	Cancer Incidence	9.1E-6	
	Genetic Effects	5.4E-7	
Offsite MEI	Dose (rem)	1.1E-7	
	Cancer Fatalities	5.5E-11	
	Cancer Incidence	1.9E-10	
	Genetic Effects	1.1E-11	
	Hazard Index		
WM Workers 577	Dose (FTE-rem)	2.5E2	
	Cancer Fatalities	9.9E-2	
	Cancer Incidence	3.5E-1	
	Genetic Effects	1.5E-2	
	Exposure Index		
	Construction Fatalities		5.3E-2
	Construction Injuries		2.3E1
	Operation Fatalities		7.0E-2
	Operation Injuries		5.9E1

Table 3.1–141. Risks Associated with Routine Treatment of LLW at INEL Under Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8451	Dose (person-rem)	7.7E-4	
	Cancer Fatalities	3.9E-7	
	Cancer Incidence	1.3E-6	
	Genetic Effects	7.7E-8	
Noninvolved Worker MEI	Dose (rem)	6.4E-7	
	Cancer Fatalities	3.2E-10	
	Cancer Incidence	1.1E-9	
	Genetic Effects	6.4E-11	
	Hazard Index		
Offsite Population 153061	Dose (person-rem)	2.6E-3	
	Cancer Fatalities	1.3E-6	
	Cancer Incidence	4.4E-6	
	Genetic Effects	2.6E-7	
Offsite MEI	Dose (rem)	3.2E-7	
	Cancer Fatalities	1.6E-10	
	Cancer Incidence	5.4E-10	
	Genetic Effects	3.2E-11	
	Hazard Index		
WM Workers 1032	Dose (FTE-rem)	5.2E2	
	Cancer Fatalities	2.1E-1	
	Cancer Incidence	7.2E-1	
	Genetic Effects	3.1E-2	
	Exposure Index		
	Construction Fatalities		1.0E-1
	Construction Injuries		4.4E1
	Operation Fatalities		1.3E-1
	Operation Injuries		1.1E2

Table 3.1-142. Risks Associated with Routine Treatment of LLW at KAPL-K Under Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3896	Dose (person-rem)	1.2E-2	
	Cancer Fatalities	6.2E-6	
	Cancer Incidence	2.1E-5	
	Genetic Effects	1.2E-6	
Noninvolved Worker MEI	Dose (rem)	5.8E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.8E-9	
	Genetic Effects	5.8E-10	
	Hazard Index		
Offsite Population 1290172	Dose (person-rem)	1.1	
	Cancer Fatalities	5.3E-4	
	Cancer Incidence	1.8E-3	
	Genetic Effects	1.1E-4	
Offsite MEI	Dose (rem)	2.4E-5	
	Cancer Fatalities	1.2E-8	
	Cancer Incidence	4.0E-8	
	Genetic Effects	2.4E-9	
	Hazard Index		
WM Workers 650	Dose (FTE-rem)	1.4E1	
	Cancer Fatalities	5.8E-3	
	Cancer Incidence	2.0E-2	
	Genetic Effects	8.7E-4	
	Exposure Index		
	Construction Fatalities		6.2E-2
	Construction Injuries		2.7E1
	Operation Fatalities		7.9E-2
	Operation Injuries		6.7E1

Table 3.1-143. Risks Associated with Routine Treatment of LLW at KCP Under Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 4410	Dose (person-rem)	2.4E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	4.1E-11	
	Genetic Effects	2.4E-12	
Noninvolved Worker MEI	Dose (rem)	1.7E-11	
	Cancer Fatalities	9.0E-15	
	Cancer Incidence	2.9E-14	
	Genetic Effects	0.00	
Offsite Population 1729833	Dose (person-rem)	2.1E-6	
	Cancer Fatalities	1.1E-9	
	Cancer Incidence	3.6E-9	
	Genetic Effects	2.1E-10	
Offsite MEI	Dose (rem)	9.7E-11	
	Cancer Fatalities	4.8E-14	
	Cancer Incidence	1.6E-13	
	Genetic Effects	1.0E-14	
WM Workers 11	Hazard Index		
	Dose (FTE-rem)	7.3E-2	
	Cancer Fatalities	2.9E-5	
	Cancer Incidence	1.0E-4	
	Genetic Effects	4.4E-6	
	Exposure Index		
	Construction Fatalities		1.3E-3
	Construction Injuries		5.6E-1
	Operation Fatalities		1.3E-3
	Operation Injuries		1.1

Table 3.1-144. Risks Associated with Routine Treatment of LLW at K-25 Under Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3800	Dose (person-rem)	1.3E-5	
	Cancer Fatalities	6.7E-9	
	Cancer Incidence	2.3E-8	
	Genetic Effects	1.3E-9	
Noninvolved Worker MEI	Dose (rem)	1.2E-8	
	Cancer Fatalities	6.1E-12	
	Cancer Incidence	2.1E-11	
	Genetic Effects	1.2E-12	
	Hazard Index		
Offsite Population 871406	Dose (person-rem)	2.3E-4	
	Cancer Fatalities	1.1E-7	
	Cancer Incidence	3.9E-7	
	Genetic Effects	2.3E-8	
Offsite MEI	Dose (rem)	5.0E-9	
	Cancer Fatalities	2.5E-12	
	Cancer Incidence	8.6E-12	
	Genetic Effects	5.0E-13	
	Hazard Index		
WM Workers 867	Dose (FTE-rem)	8.9	
	Cancer Fatalities	3.6E-3	
	Cancer Incidence	1.3E-2	
	Genetic Effects	5.3E-4	
	Exposure Index		
	Construction Fatalities		7.8E-2
	Construction Injuries		3.4E1
	Operation Fatalities		1.1E-1
	Operation Injuries		8.9E1

Table 3.1–145. Risks Associated with Routine Treatment of LLW at LANL Under Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 11552	Dose (person-rem)	2.8E-2	
	Cancer Fatalities	1.4E-5	
	Cancer Incidence	4.8E-5	
	Genetic Effects	2.8E-6	
Noninvolved Worker MEI	Dose (rem)	2.2E-5	
	Cancer Fatalities	1.1E-8	
	Cancer Incidence	3.7E-8	
	Genetic Effects	2.2E-9	
	Hazard Index		
Offsite Population 159152	Dose (person-rem)	4.2E-1	
	Cancer Fatalities	2.1E-4	
	Cancer Incidence	7.1E-4	
	Genetic Effects	4.2E-5	
Offsite MEI	Dose (rem)	4.4E-5	
	Cancer Fatalities	2.2E-8	
	Cancer Incidence	7.5E-8	
	Genetic Effects	4.4E-9	
	Hazard Index		
WM Workers 902	Dose (FTE-rem)	3.5E2	
	Cancer Fatalities	1.4E-1	
	Cancer Incidence	4.9E-1	
	Genetic Effects	2.1E-2	
	Exposure Index		
	Construction Fatalities		8.0E-2
	Construction Injuries		3.5E1
	Operation Fatalities		1.1E-1
	Operation Injuries		9.3E1

Table 3.1-146. Risks Associated with Routine Treatment of LLW at LBL Under Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3940	Dose (person-rem)	5.4E-2	
	Cancer Fatalities	2.7E-5	
	Cancer Incidence	9.1E-5	
	Genetic Effects	5.4E-6	
Noninvolved Worker MEI	Dose (rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.1E-8	
	Genetic Effects	4.2E-9	
	Hazard Index		
Offsite Population 1586829	Dose (person-rem)	3.6E1	
	Cancer Fatalities	1.8E-2	
	Cancer Incidence	6.2E-2	
	Genetic Effects	3.6E-3	
Offsite MEI	Dose (rem)	5.7E-4	
	Cancer Fatalities	2.9E-7	
	Cancer Incidence	9.7E-7	
	Genetic Effects	5.7E-8	
	Hazard Index		
WM Workers 174	Dose (FTE-rem)	1.9E1	
	Cancer Fatalities	7.6E-3	
	Cancer Incidence	2.7E-2	
	Genetic Effects	1.1E-3	
	Exposure Index		
	Construction Fatalities		2.2E-2
	Construction Injuries		9.6
	Operation Fatalities		2.1E-2
	Operation Injuries		1.8E1

Table 3.1–147. Risks Associated with Routine Treatment of LLW at LLNL Under Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 9504	Dose (person-rem)	2.8E-1	
	Cancer Fatalities	1.4E-4	
	Cancer Incidence	4.7E-4	
	Genetic Effects	2.8E-5	
Noninvolved Worker MEI	Dose (rem)	9.4E-5	
	Cancer Fatalities	4.7E-8	
	Cancer Incidence	1.6E-7	
	Genetic Effects	9.4E-9	
	Hazard Index		
Offsite Population 6324234	Dose (person-rem)	2.0E1	
	Cancer Fatalities	1.0E-2	
	Cancer Incidence	3.4E-2	
	Genetic Effects	2.0E-3	
Offsite MEI	Dose (rem)	3.3E-4	
	Cancer Fatalities	1.6E-7	
	Cancer Incidence	5.5E-7	
	Genetic Effects	3.3E-8	
	Hazard Index		
WM Workers 227	Dose (FTE-rem)	6.4	
	Cancer Fatalities	2.5E-3	
	Cancer Incidence	8.9E-3	
	Genetic Effects	3.8E-4	
	Exposure Index		
	Construction Fatalities		2.9E-2
	Construction Injuries		1.3E1
	Operation Fatalities		2.8E-2
	Operation Injuries		2.3E1

Table 3.1-148. Risks Associated with Routine Treatment of LLW at Mound Under Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1688	Dose (person-rem)	1.6E-6	
	Cancer Fatalities	8.0E-10	
	Cancer Incidence	2.7E-9	
	Genetic Effects	1.6E-10	
Noninvolved Worker MEI	Dose (rem)	2.5E-9	
	Cancer Fatalities	1.3E-12	
	Cancer Incidence	4.3E-12	
	Genetic Effects	2.5E-13	
	Hazard Index		
Offsite Population 3032983	Dose (person-rem)	2.1E-4	
	Cancer Fatalities	1.0E-7	
	Cancer Incidence	3.5E-7	
	Genetic Effects	2.1E-8	
Offsite MEI	Dose (rem)	1.2E-8	
	Cancer Fatalities	5.9E-12	
	Cancer Incidence	2.0E-11	
	Genetic Effects	1.2E-12	
	Hazard Index		
WM Workers 435	Dose (FTE-rem)	3.3	
	Cancer Fatalities	1.3E-3	
	Cancer Incidence	4.7E-3	
	Genetic Effects	2.0E-4	
	Exposure Index		
	Construction Fatalities		5.1E-2
	Construction Injuries		2.2E1
	Operation Fatalities		5.3E-2
	Operation Injuries		4.5E1

Table 3.1-149. Risks Associated with Routine Treatment of LLW at ORNL Under Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3809	Dose (person-rem)	3.8E-4	
	Cancer Fatalities	1.9E-7	
	Cancer Incidence	6.4E-7	
	Genetic Effects	3.8E-8	
Noninvolved Worker MEI	Dose (rem)	3.4E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.9E-10	
	Genetic Effects	3.4E-11	
	Hazard Index		
Offsite Population 881652	Dose (person-rem)	1.1E-2	
	Cancer Fatalities	5.7E-6	
	Cancer Incidence	1.9E-5	
	Genetic Effects	1.1E-6	
Offsite MEI	Dose (rem)	3.5E-7	
	Cancer Fatalities	1.8E-10	
	Cancer Incidence	6.0E-10	
	Genetic Effects	3.5E-11	
	Hazard Index		
WM Workers 444	Dose (FTE-rem)	6.5E1	
	Cancer Fatalities	2.6E-2	
	Cancer Incidence	9.1E-2	
	Genetic Effects	3.9E-3	
	Exposure Index		
	Construction Fatalities		6.7E-2
	Construction Injuries		2.9E1
	Operation Fatalities		5.4E-2
	Operation Injuries		4.6E1

Table 3.1-150. Risks Associated with Routine Treatment of LLW at Pantex Under Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 2825	Dose (person-rem)	3.3E-5	
	Cancer Fatalities	1.6E-8	
	Cancer Incidence	5.6E-8	
	Genetic Effects	3.3E-9	
Noninvolved Worker MEI	Dose (rem)	6.3E-8	
	Cancer Fatalities	3.1E-11	
	Cancer Incidence	1.1E-10	
	Genetic Effects	6.3E-12	
	Hazard Index		
Offsite Population 265185	Dose (person-rem)	2.2E-4	
	Cancer Fatalities	1.1E-7	
	Cancer Incidence	3.7E-7	
	Genetic Effects	2.2E-8	
Offsite MEI	Dose (rem)	1.8E-8	
	Cancer Fatalities	9.2E-12	
	Cancer Incidence	3.1E-11	
	Genetic Effects	1.8E-12	
	Hazard Index		
WM Workers 675	Dose (FTE-rem)	6.4	
	Cancer Fatalities	2.6E-3	
	Cancer Incidence	9.0E-3	
	Genetic Effects	3.9E-4	
	Exposure Index		
	Construction Fatalities		6.1E-2
	Construction Injuries		2.7E1
	Operation Fatalities		8.2E-2
	Operation Injuries		6.9E1

Table 3.1-151. Risks Associated with Routine Treatment of LLW at PGDP Under Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1952	Dose (person-rem)	3.3E-6	
	Cancer Fatalities	1.7E-9	
	Cancer Incidence	5.6E-9	
	Genetic Effects	3.3E-10	
Noninvolved Worker MEI	Dose (rem)	4.1E-9	
	Cancer Fatalities	2.0E-12	
	Cancer Incidence	6.9E-12	
	Genetic Effects	4.1E-13	
	Hazard Index		
Offsite Population 500502	Dose (person-rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.1E-8	
	Genetic Effects	4.2E-9	
Offsite MEI	Dose (rem)	4.7E-9	
	Cancer Fatalities	2.3E-12	
	Cancer Incidence	8.0E-12	
	Genetic Effects	4.7E-13	
	Hazard Index		
WM Workers 503	Dose (FTE-rem)	3.7	
	Cancer Fatalities	1.5E-3	
	Cancer Incidence	5.2E-3	
	Genetic Effects	2.2E-4	
	Exposure Index		
	Construction Fatalities		5.1E-2
	Construction Injuries		2.2E1
	Operation Fatalities		6.1E-2
	Operation Injuries		5.2E1

Table 3.1-152. Risks Associated with Routine Treatment of LLW at Pinellas Under Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1167	Dose (person-rem)	4.2E-8	
	Cancer Fatalities	2.1E-11	
	Cancer Incidence	7.2E-11	
	Genetic Effects	4.2E-12	
Noninvolved Worker MEI	Dose (rem)	8.7E-11	
	Cancer Fatalities	4.4E-14	
	Cancer Incidence	1.5E-13	
	Genetic Effects	9.0E-15	
	Hazard Index		
Offsite Population 2532174	Dose (person-rem)	3.5E-5	
	Cancer Fatalities	1.8E-8	
	Cancer Incidence	6.0E-8	
	Genetic Effects	3.5E-9	
Offsite MEI	Dose (rem)	7.7E-10	
	Cancer Fatalities	3.8E-13	
	Cancer Incidence	1.3E-12	
	Genetic Effects	7.7E-14	
	Hazard Index		
WM Workers 21	Dose (FTE-rem)	1.4E-1	
	Cancer Fatalities	5.6E-5	
	Cancer Incidence	2.0E-4	
	Genetic Effects	8.4E-6	
	Exposure Index		
	Construction Fatalities		2.5E-3
	Construction Injuries		1.1
	Operation Fatalities		2.5E-3
	Operation Injuries		2.1

Table 3.1–153. Risks Associated with Routine Treatment of LLW at Ports Under Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3226	Dose (person-rem)	3.7E-7	
	Cancer Fatalities	1.8E-10	
	Cancer Incidence	6.3E-10	
	Genetic Effects	3.7E-11	
Noninvolved Worker MEI	Dose (rem)	2.1E-10	
	Cancer Fatalities	1.0E-13	
	Cancer Incidence	3.5E-13	
	Genetic Effects	2.1E-14	
	Hazard Index		
Offsite Population 639602	Dose (person-rem)	3.5E-6	
	Cancer Fatalities	1.8E-9	
	Cancer Incidence	6.0E-9	
	Genetic Effects	3.5E-10	
Offsite MEI	Dose (rem)	4.4E-10	
	Cancer Fatalities	2.2E-13	
	Cancer Incidence	7.5E-13	
	Genetic Effects	4.4E-14	
	Hazard Index		
WM Workers 1075	Dose (FTE-rem)	1.1E1	
	Cancer Fatalities	4.6E-3	
	Cancer Incidence	1.6E-2	
	Genetic Effects	6.8E-4	
	Exposure Index		
	Construction Fatalities		9.8E-2
	Construction Injuries		4.3E1
	Operation Fatalities		1.3E-1
	Operation Injuries		1.1E2

Table 3.1-154. Risks Associated with Routine Treatment of LLW at RFETS Under Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 6993	Dose (person-rem)	4.1E-5	
	Cancer Fatalities	2.0E-8	
	Cancer Incidence	6.9E-8	
	Genetic Effects	4.1E-9	
Noninvolved Worker MEI	Dose (rem)	2.5E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	4.2E-11	
	Genetic Effects	2.5E-12	
	Hazard Index		
Offsite Population 2171877	Dose (person-rem)	8.0E-4	
	Cancer Fatalities	4.0E-7	
	Cancer Incidence	1.4E-6	
	Genetic Effects	8.0E-8	
Offsite MEI	Dose (rem)	1.1E-8	
	Cancer Fatalities	5.4E-12	
	Cancer Incidence	1.8E-11	
	Genetic Effects	1.1E-12	
	Hazard Index		
WM Workers 344	Dose (FTE-rem)	2.9	
	Cancer Fatalities	1.2E-3	
	Cancer Incidence	4.0E-3	
	Genetic Effects	1.7E-4	
	Exposure Index		
	Construction Fatalities		3.8E-2
	Construction Injuries		1.7E1
	Operation Fatalities		4.2E-2
	Operation Injuries		3.5E1

Table 3.1-155. Risks Associated with Routine Treatment of LLW at SNL-NM Under Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 10576	Dose (person-rem)	6.1E-5	
	Cancer Fatalities	3.0E-8	
	Cancer Incidence	1.0E-7	
	Genetic Effects	6.1E-9	
Noninvolved Worker MEI	Dose (rem)	2.6E-8	
	Cancer Fatalities	1.3E-11	
	Cancer Incidence	4.3E-11	
	Genetic Effects	2.6E-12	
	Hazard Index		
Offsite Population 610714	Dose (person-rem)	3.6E-3	
	Cancer Fatalities	1.8E-6	
	Cancer Incidence	6.2E-6	
	Genetic Effects	3.6E-7	
Offsite MEI	Dose (rem)	1.4E-7	
	Cancer Fatalities	7.2E-11	
	Cancer Incidence	2.4E-10	
	Genetic Effects	1.4E-11	
	Hazard Index		
WM Workers 210	Dose (FTE-rem)	1.0	
	Cancer Fatalities	4.1E-4	
	Cancer Incidence	1.5E-3	
	Genetic Effects	6.2E-5	
	Exposure Index		
	Construction Fatalities		2.5E-2
	Construction Injuries		1.1E1
	Operation Fatalities		2.5E-2
	Operation Injuries		2.2E1

Table 3.1-156. Risks Associated with Routine Treatment of LLW at SRS Under Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 15996	Dose (person-rem)	2.6E-3	
	Cancer Fatalities	1.3E-6	
	Cancer Incidence	4.4E-6	
	Genetic Effects	2.6E-7	
Noninvolved Worker MEI	Dose (rem)	2.3E-6	
	Cancer Fatalities	1.1E-9	
	Cancer Incidence	3.8E-9	
	Genetic Effects	2.3E-10	
	Hazard Index		
Offsite Population 620618	Dose (person-rem)	3.7E-2	
	Cancer Fatalities	1.9E-5	
	Cancer Incidence	6.3E-5	
	Genetic Effects	3.7E-6	
Offsite MEI	Dose (rem)	3.5E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.9E-10	
	Genetic Effects	3.5E-11	
	Hazard Index		
WM Workers 1986	Dose (FTE-rem)	5.7E2	
	Cancer Fatalities	2.3E-1	
	Cancer Incidence	7.9E-1	
	Genetic Effects	3.4E-2	
	Exposure Index		
	Construction Fatalities		2.0E-1
	Construction Injuries		8.6E1
	Operation Fatalities		2.4E-1
	Operation Injuries		2.0E2

Table 3.1-157. Risks Associated with Routine Treatment of LLW at Y-12 Under Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 7699	Dose (person-rem)	2.4E-5	
	Cancer Fatalities	1.2E-8	
	Cancer Incidence	4.0E-8	
	Genetic Effects	2.4E-9	
Noninvolved Worker MEI	Dose (rem)	7.8E-9	
	Cancer Fatalities	3.9E-12	
	Cancer Incidence	1.3E-11	
	Genetic Effects	7.8E-13	
Offsite Population 895379	Dose (person-rem)	1.7E-4	
	Cancer Fatalities	8.4E-8	
	Cancer Incidence	2.9E-7	
	Genetic Effects	1.7E-8	
Offsite MEI	Dose (rem)	6.2E-9	
	Cancer Fatalities	3.1E-12	
	Cancer Incidence	1.1E-11	
	Genetic Effects	6.2E-13	
WM Workers 1222	Dose (FTE-rem)	1.3E1	
	Cancer Fatalities	5.3E-3	
	Cancer Incidence	1.9E-2	
	Genetic Effects	7.9E-4	
	Exposure Index		
	Construction Fatalities		1.1E-1
	Construction Injuries		4.9E1
	Operation Fatalities		1.5E-1
	Operation Injuries		1.3E2

Table 3.1-158. Risks Associated with Routine Treatment of LLW at ANL-E Under Regionalized Alternative 7

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 5571	Dose (person-rem)	2.0E-5	
	Cancer Fatalities	9.8E-9	
	Cancer Incidence	3.3E-8	
	Genetic Effects	2.0E-9	
Noninvolved Worker MEI	Dose (rem)	2.0E-8	
	Cancer Fatalities	1.0E-11	
	Cancer Incidence	3.4E-11	
	Genetic Effects	2.0E-12	
	Hazard Index		
Offsite Population 7939785	Dose (person-rem)	5.0E-3	
	Cancer Fatalities	2.5E-6	
	Cancer Incidence	8.5E-6	
	Genetic Effects	5.0E-7	
Offsite MEI	Dose (rem)	2.8E-8	
	Cancer Fatalities	1.4E-11	
	Cancer Incidence	4.7E-11	
	Genetic Effects	2.8E-12	
	Hazard Index		
WM Workers 224	Dose (FTE-rem)	79	
	Cancer Fatalities	3.2E-2	
	Cancer Incidence	1.1E-1	
	Genetic Effects	4.8E-3	
	Exposure Index		
	Construction Fatalities		2.4E-2
	Construction Injuries		11
	Operation Fatalities		2.7E-2
	Operation Injuries		23

Table 3.1-159. Risks Associated with Routine Treatment of LLW at Hanford Under Regionalized Alternative 7

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8674	Dose (person-rem)	3.0E-4	
	Cancer Fatalities	1.5E-7	
	Cancer Incidence	5.1E-7	
	Genetic Effects	3.0E-8	
Noninvolved Worker MEI	Dose (rem)	5.2E-7	
	Cancer Fatalities	2.6E-10	
	Cancer Incidence	8.8E-10	
	Genetic Effects	5.2E-11	
Offsite Population 377645	Dose (person-rem)	8.3E-3	
	Cancer Fatalities	4.2E-6	
	Cancer Incidence	1.4E-5	
	Genetic Effects	8.3E-7	
Offsite MEI	Dose (rem)	1.7E-7	
	Cancer Fatalities	8.5E-11	
	Cancer Incidence	2.9E-10	
	Genetic Effects	1.7E-11	
WM Workers 843	Dose (FTE-rem)	260	
	Cancer Fatalities	1.0E-1	
	Cancer Incidence	3.6E-1	
	Genetic Effects	1.6E-2	
	Exposure Index		
	Construction Fatalities		8.1E-2
	Construction Injuries		35
	Operation Fatalities		1.0E-1
	Operation Injuries		87

Table 3.1-160. Risks Associated with Routine Treatment of LLW at INEL Under Regionalized Alternative 7

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8451	Dose (person-rem)	7.7E-4	
	Cancer Fatalities	3.9E-7	
	Cancer Incidence	1.3E-6	
	Genetic Effects	7.7E-8	
Noninvolved Worker MEI	Dose (rem)	6.4E-7	
	Cancer Fatalities	3.2E-10	
	Cancer Incidence	1.1E-9	
	Genetic Effects	6.4E-11	
	Hazard Index		
Offsite Population 153061	Dose (person-rem)	2.6E-3	
	Cancer Fatalities	1.3E-6	
	Cancer Incidence	4.4E-6	
	Genetic Effects	2.6E-7	
Offsite MEI	Dose (rem)	3.2E-7	
	Cancer Fatalities	1.6E-10	
	Cancer Incidence	5.4E-10	
	Genetic Effects	3.2E-11	
	Hazard Index		
WM Workers 1032	Dose (FTE-rem)	520	
	Cancer Fatalities	2.1E-1	
	Cancer Incidence	7.2E-1	
	Genetic Effects	3.1E-2	
	Exposure Index		
	Construction Fatalities		1.0E-1
	Construction Injuries		44
	Operation Fatalities		1.3E-1
	Operation Injuries		110

Table 3.1-161. Risks Associated with Routine Treatment of LLW at KAPL-K Under Regionalized Alternative 7

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3896	Dose (person-rem)	1.2E-2	
	Cancer Fatalities	6.2E-6	
	Cancer Incidence	2.1E-5	
	Genetic Effects	1.2E-6	
Noninvolved Worker MEI	Dose (rem)	5.8E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.8E-9	
	Genetic Effects	5.8E-10	
	Hazard Index		
Offsite Population 1290172	Dose (person-rem)	1.1	
	Cancer Fatalities	5.3E-4	
	Cancer Incidence	1.8E-3	
	Genetic Effects	1.1E-4	
Offsite MEI	Dose (rem)	2.4E-5	
	Cancer Fatalities	1.2E-8	
	Cancer Incidence	4.0E-8	
	Genetic Effects	2.4E-9	
	Hazard Index		
WM Workers 650	Dose (FTE-rem)	14	
	Cancer Fatalities	5.8E-3	
	Cancer Incidence	2.0E-2	
	Genetic Effects	8.7E-4	
	Exposure Index		
	Construction Fatalities		6.2E-2
	Construction Injuries		27
	Operation Fatalities		7.9E-2
	Operation Injuries		67

Table 3.1-162. Risks Associated with Routine Treatment of LLW at KCP Under Regionalized Alternative 7

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 4410	Dose (person-rem)	2.4E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	4.1E-11	
	Genetic Effects	2.4E-12	
Noninvolved Worker MEI	Dose (rem)	1.7E-11	
	Cancer Fatalities	9.0E-15	
	Cancer Incidence	2.9E-14	
	Genetic Effects	0.00	
	Hazard Index		
Offsite Population 1729833	Dose (person-rem)	2.1E-6	
	Cancer Fatalities	1.1E-9	
	Cancer Incidence	3.6E-9	
	Genetic Effects	2.1E-10	
Offsite MEI	Dose (rem)	9.7E-11	
	Cancer Fatalities	4.8E-14	
	Cancer Incidence	1.6E-13	
	Genetic Effects	1.0E-14	
	Hazard Index		
WM Workers 11	Dose (FTE-rem)	7.3E-2	
	Cancer Fatalities	2.9E-5	
	Cancer Incidence	1.0E-4	
	Genetic Effects	4.4E-6	
	Exposure Index		
	Construction Fatalities		1.3E-3
	Construction Injuries		5.6E-1
	Operation Fatalities		1.3E-3
	Operation Injuries		1.1

Table 3.1-163. Risks Associated with Routine Treatment of LLW at K-25 Under Regionalized Alternative 7

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3800	Dose (person-rem)	1.3E-5	
	Cancer Fatalities	6.7E-9	
	Cancer Incidence	2.3E-8	
	Genetic Effects	1.3E-9	
Noninvolved Worker MEI	Dose (rem)	1.2E-8	
	Cancer Fatalities	6.1E-12	
	Cancer Incidence	2.1E-11	
	Genetic Effects	1.2E-12	
	Hazard Index		
Offsite Population 871406	Dose (person-rem)	2.3E-4	
	Cancer Fatalities	1.1E-7	
	Cancer Incidence	3.9E-7	
	Genetic Effects	2.3E-8	
Offsite MEI	Dose (rem)	5.0E-9	
	Cancer Fatalities	2.5E-12	
	Cancer Incidence	8.6E-12	
	Genetic Effects	5.0E-13	
	Hazard Index		
WM Workers 867	Dose (FTE-rem)	8.9	
	Cancer Fatalities	3.6E-3	
	Cancer Incidence	1.3E-2	
	Genetic Effects	5.3E-4	
	Exposure Index		
	Construction Fatalities		7.8E-2
	Construction Injuries		34
	Operation Fatalities		1.1E-1
	Operation Injuries		89

Table 3.1-164. Risks Associated with Routine Treatment of LLW at LANL Under Regionalized Alternative 7

Receptor	Endpoint	Radionuclides	Hazardous Chemicals	
			Carcinogens	Noncarcinogens
Onsite Population 11552	Dose (person-rem)	2.8E-2		
	Cancer Fatalities	1.4E-5		
	Cancer Incidence	4.8E-5		
	Genetic Effects	2.8E-6		
Onsite MEI	Dose (rem)	2.2E-5		
	Cancer Fatalities	1.1E-8		
	Cancer Incidence	3.7E-8		
	Genetic Effects	2.2E-9		
	Hazard Index			
Offsite Population 159152	Dose (person-rem)	4.2E-1		
	Cancer Fatalities	2.1E-4		
	Cancer Incidence	7.1E-4		
	Genetic Effects	4.2E-5		
Offsite MEI	Dose (rem)	4.4E-5		
	Cancer Fatalities	2.2E-8		
	Cancer Incidence	7.5E-8		
	Genetic Effects	4.4E-9		
	Hazard Index			
TSD Workers 902	Dose (FTE-rem)	3.5E2		
	Cancer Fatalities	1.4E-1		
	Cancer Incidence	4.9E-1		
	Genetic Effects	2.1E-2		
	Exposure Index			
	Construction Fatalities			
	Construction Injuries			
	Operation Fatalities			
	Operation Injuries			

Table 3.1-165. Risks Associated with Routine Treatment of LLW at LBL Under Regionalized Alternative 7

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3940	Dose (person-rem)	5.4E-2	
	Cancer Fatalities	2.7E-5	
	Cancer Incidence	9.1E-5	
	Genetic Effects	5.4E-6	
Noninvolved Worker MEI	Dose (rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.1E-8	
	Genetic Effects	4.2E-9	
	Hazard Index		
Offsite Population 1586829	Dose (person-rem)	36	
	Cancer Fatalities	1.8E-2	
	Cancer Incidence	6.2E-2	
	Genetic Effects	3.6E-3	
Offsite MEI	Dose (rem)	5.7E-4	
	Cancer Fatalities	2.9E-7	
	Cancer Incidence	9.7E-7	
	Genetic Effects	5.7E-8	
	Hazard Index		
WM Workers 174	Dose (FTE-rem)	19	
	Cancer Fatalities	7.6E-3	
	Cancer Incidence	2.7E-2	
	Genetic Effects	1.1E-3	
	Exposure Index		
	Construction Fatalities		2.2E-2
	Construction Injuries		9.6
	Operation Fatalities		2.1E-2
	Operation Injuries		18

Table 3.1–166. Risks Associated with Routine Treatment of LLW at LLNL Under Regionalized Alternative 7

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 9504	Dose (person-rem)	2.8E-1	
	Cancer Fatalities	1.4E-4	
	Cancer Incidence	4.7E-4	
	Genetic Effects	2.8E-5	
Noninvolved Worker MEI	Dose (rem)	9.4E-5	
	Cancer Fatalities	4.7E-8	
	Cancer Incidence	1.6E-7	
	Genetic Effects	9.4E-9	
	Hazard Index		
Offsite Population 6324234	Dose (person-rem)	20	
	Cancer Fatalities	1.0E-2	
	Cancer Incidence	3.4E-2	
	Genetic Effects	2.0E-3	
Offsite MEI	Dose (rem)	3.3E-4	
	Cancer Fatalities	1.6E-7	
	Cancer Incidence	5.5E-7	
	Genetic Effects	3.3E-8	
	Hazard Index		
WM Workers 227	Dose (FTE-rem)	6.4	
	Cancer Fatalities	2.5E-3	
	Cancer Incidence	8.9E-3	
	Genetic Effects	3.8E-4	
	Exposure Index		
	Construction Fatalities		2.9E-2
	Construction Injuries		13
	Operation Fatalities		2.8E-2
	Operation Injuries		23

Table 3.1-167. Risks Associated with Routine Treatment of LLW at Mound Under Regionalized Alternative 7

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1688	Dose (person-rem)	1.6E-6	
	Cancer Fatalities	8.0E-10	
	Cancer Incidence	2.7E-9	
	Genetic Effects	1.6E-10	
Noninvolved Worker MEI	Dose (rem)	2.5E-9	
	Cancer Fatalities	1.3E-12	
	Cancer Incidence	4.3E-12	
	Genetic Effects	2.5E-13	
	Hazard Index		
Offsite Population 3032983	Dose (person-rem)	2.1E-4	
	Cancer Fatalities	1.0E-7	
	Cancer Incidence	3.5E-7	
	Genetic Effects	2.1E-8	
Offsite MEI	Dose (rem)	1.2E-8	
	Cancer Fatalities	5.9E-12	
	Cancer Incidence	2.0E-11	
	Genetic Effects	1.2E-12	
	Hazard Index		
WM Workers 435	Dose (FTE-rem)	3.3	
	Cancer Fatalities	1.3E-3	
	Cancer Incidence	4.7E-3	
	Genetic Effects	2.0E-4	
	Exposure Index		
	Construction Fatalities		5.1E-2
	Construction Injuries		22
	Operation Fatalities		5.3E-2
	Operation Injuries		45

Table 3.1–168. Risks Associated with Routine Treatment of LLW at ORNL Under Regionalized Alternative 7

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3809	Dose (person-rem)	3.8E-4	
	Cancer Fatalities	1.9E-7	
	Cancer Incidence	6.4E-7	
	Genetic Effects	3.8E-8	
Noninvolved Worker MEI	Dose (rem)	3.4E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.9E-10	
	Genetic Effects	3.4E-11	
	Hazard Index		
Offsite Population 881652	Dose (person-rem)	1.1E-2	
	Cancer Fatalities	5.7E-6	
	Cancer Incidence	1.9E-5	
	Genetic Effects	1.1E-6	
Offsite MEI	Dose (rem)	3.5E-7	
	Cancer Fatalities	1.8E-10	
	Cancer Incidence	6.0E-10	
	Genetic Effects	3.5E-11	
	Hazard Index		
WM Workers 444	Dose (FTE-rem)	65	
	Cancer Fatalities	2.6E-2	
	Cancer Incidence	9.1E-2	
	Genetic Effects	3.9E-3	
	Exposure Index		
	Construction Fatalities		6.7E-2
	Construction Injuries		29
	Operation Fatalities		5.4E-2
	Operation Injuries		46

Table 3.1–169. Risks Associated with Routine Treatment of LLW at Pantex Under Regionalized Alternative 7

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 2825	Dose (person-rem)	3.3E-5	
	Cancer Fatalities	1.6E-8	
	Cancer Incidence	5.6E-8	
	Genetic Effects	3.3E-9	
Noninvolved Worker MEI	Dose (rem)	6.3E-8	
	Cancer Fatalities	3.1E-11	
	Cancer Incidence	1.1E-10	
	Genetic Effects	6.3E-12	
	Hazard Index		
Offsite Population 265185	Dose (person-rem)	2.2E-4	
	Cancer Fatalities	1.1E-7	
	Cancer Incidence	3.7E-7	
	Genetic Effects	2.2E-8	
Offsite MEI	Dose (rem)	1.8E-8	
	Cancer Fatalities	9.2E-12	
	Cancer Incidence	3.1E-11	
	Genetic Effects	1.8E-12	
	Hazard Index		
WM Workers 675	Dose (FTE-rem)	6.4	
	Cancer Fatalities	2.6E-3	
	Cancer Incidence	9.0E-3	
	Genetic Effects	3.9E-4	
	Exposure Index		
	Construction Fatalities		6.1E-2
	Construction Injuries		27
	Operation Fatalities		8.2E-2
	Operation Injuries		69

Table 3.1-170. Risks Associated with Routine Treatment of LLW at PGDP Under Regionalized Alternative 7

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1952	Dose (person-rem)	3.3E-6	
	Cancer Fatalities	1.7E-9	
	Cancer Incidence	5.6E-9	
	Genetic Effects	3.3E-10	
Noninvolved Worker MEI	Dose (rem)	4.1E-9	
	Cancer Fatalities	2.0E-12	
	Cancer Incidence	6.9E-12	
	Genetic Effects	4.1E-13	
	Hazard Index		
Offsite Population 500502	Dose (person-rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.1E-8	
	Genetic Effects	4.2E-9	
Offsite MEI	Dose (rem)	4.7E-9	
	Cancer Fatalities	2.3E-12	
	Cancer Incidence	8.0E-12	
	Genetic Effects	4.7E-13	
	Hazard Index		
WM Workers 503	Dose (FTE-rem)	3.7	
	Cancer Fatalities	1.5E-3	
	Cancer Incidence	5.2E-3	
	Genetic Effects	2.2E-4	
	Exposure Index		
	Construction Fatalities		5.1E-2
	Construction Injuries		22
	Operation Fatalities		6.1E-2
	Operation Injuries		52

Table 3.1-171. Risks Associated with Routine Treatment of LLW at Pinellas Under Regionalized Alternative 7

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1167	Dose (person-rem)	4.2E-8	
	Cancer Fatalities	2.1E-11	
	Cancer Incidence	7.2E-11	
	Genetic Effects	4.2E-12	
Noninvolved Worker MEI	Dose (rem)	8.7E-11	
	Cancer Fatalities	4.4E-14	
	Cancer Incidence	1.5E-13	
	Genetic Effects	9.0E-15	
	Hazard Index		
Offsite Population 2532174	Dose (person-rem)	3.5E-5	
	Cancer Fatalities	1.8E-8	
	Cancer Incidence	6.0E-8	
	Genetic Effects	3.5E-9	
Offsite MEI	Dose (rem)	7.7E-10	
	Cancer Fatalities	3.8E-13	
	Cancer Incidence	1.3E-12	
	Genetic Effects	7.7E-14	
	Hazard Index		
WM Workers 21	Dose (FTE-rem)	1.4E-1	
	Cancer Fatalities	5.6E-5	
	Cancer Incidence	2.0E-4	
	Genetic Effects	8.4E-6	
	Exposure Index		
	Construction Fatalities		2.5E-3
	Construction Injuries		1.1
	Operation Fatalities		2.5E-3
	Operation Injuries		2.1

Table 3.1-172. Risks Associated with Routine Treatment of LLW at Ports Under Regionalized Alternative 7

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3226	Dose (person-rem)	3.7E-7	
	Cancer Fatalities	1.8E-10	
	Cancer Incidence	6.3E-10	
	Genetic Effects	3.7E-11	
Noninvolved Worker MEI	Dose (rem)	2.1E-10	
	Cancer Fatalities	1.0E-13	
	Cancer Incidence	3.5E-13	
	Genetic Effects	2.1E-14	
	Hazard Index		
Offsite Population 639602	Dose (person-rem)	3.5E-6	
	Cancer Fatalities	1.8E-9	
	Cancer Incidence	6.0E-9	
	Genetic Effects	3.5E-10	
Offsite MEI	Dose (rem)	4.4E-10	
	Cancer Fatalities	2.2E-13	
	Cancer Incidence	7.5E-13	
	Genetic Effects	4.4E-14	
	Hazard Index		
WM Workers 1075	Dose (FTE-rem)	11	
	Cancer Fatalities	4.6E-3	
	Cancer Incidence	1.6E-2	
	Genetic Effects	6.8E-4	
	Exposure Index		
	Construction Fatalities		9.8E-2
	Construction Injuries		43
	Operation Fatalities		1.3E-1
	Operation Injuries		110

Table 3.1-173. Risks Associated with Routine Treatment of LLW at RFETS Under Regionalized Alternative 7

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 6993	Dose (person-rem)	4.1E-5	
	Cancer Fatalities	2.0E-8	
	Cancer Incidence	6.9E-8	
	Genetic Effects	4.1E-9	
Noninvolved Worker MEI	Dose (rem)	2.5E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	4.2E-11	
	Genetic Effects	2.5E-12	
	Hazard Index		
Offsite Population 2171877	Dose (person-rem)	8.0E-4	
	Cancer Fatalities	4.0E-7	
	Cancer Incidence	1.4E-6	
	Genetic Effects	8.0E-8	
Offsite MEI	Dose (rem)	1.1E-8	
	Cancer Fatalities	5.4E-12	
	Cancer Incidence	1.8E-11	
	Genetic Effects	1.1E-12	
	Hazard Index		
WM Workers 344	Dose (FTE-rem)	2.9	
	Cancer Fatalities	1.2E-3	
	Cancer Incidence	4.0E-3	
	Genetic Effects	1.7E-4	
	Exposure Index		
	Construction Fatalities		3.8E-2
	Construction Injuries		17
	Operation Fatalities		4.2E-2
	Operation Injuries		35

Table 3.1-174. Risks Associated with Routine Treatment of LLW at SNL-NM Under Regionalized Alternative 7

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 10576	Dose (person-rem)	6.1E-5	
	Cancer Fatalities	3.0E-8	
	Cancer Incidence	1.0E-7	
	Genetic Effects	6.1E-9	
Noninvolved Worker MEI	Dose (rem)	2.6E-8	
	Cancer Fatalities	1.3E-11	
	Cancer Incidence	4.3E-11	
	Genetic Effects	2.6E-12	
	Hazard Index		
Offsite Population 610714	Dose (person-rem)	3.6E-3	
	Cancer Fatalities	1.8E-6	
	Cancer Incidence	6.2E-6	
	Genetic Effects	3.6E-7	
Offsite MEI	Dose (rem)	1.4E-7	
	Cancer Fatalities	7.2E-11	
	Cancer Incidence	2.4E-10	
	Genetic Effects	1.4E-11	
	Hazard Index		
WM Workers 210	Dose (FTE-rem)	1.0	
	Cancer Fatalities	4.1E-4	
	Cancer Incidence	1.5E-3	
	Genetic Effects	6.2E-5	
	Exposure Index		
	Construction Fatalities		2.5E-2
	Construction Injuries		11
	Operation Fatalities		2.5E-2
	Operation Injuries		22

Table 3.1-175. Risks Associated with Routine Treatment of LLW at SRS Under Regionalized Alternative 7

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 15996	Dose (person-rem)	2.6E-3	
	Cancer Fatalities	1.3E-6	
	Cancer Incidence	4.4E-6	
	Genetic Effects	2.6E-7	
Noninvolved Worker MEI	Dose (rem)	2.3E-6	
	Cancer Fatalities	1.1E-9	
	Cancer Incidence	3.8E-9	
	Genetic Effects	2.3E-10	
	Hazard Index		
Offsite Population 620618	Dose (person-rem)	3.7E-2	
	Cancer Fatalities	1.9E-5	
	Cancer Incidence	6.3E-5	
	Genetic Effects	3.7E-6	
Offsite MEI	Dose (rem)	3.5E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.9E-10	
	Genetic Effects	3.5E-11	
	Hazard Index		
WM Workers 1986	Dose (FTE-rem)	570	
	Cancer Fatalities	2.3E-1	
	Cancer Incidence	7.9E-1	
	Genetic Effects	3.4E-2	
	Exposure Index		
	Construction Fatalities		2.0E-1
	Construction Injuries		86
	Operation Fatalities		2.4E-1
	Operation Injuries		200

Table 3.1–176. Risks Associated with Routine Treatment of LLW at ANL-E Under Centralized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 5571	Dose (person-rem)	2.0E-5	
	Cancer Fatalities	9.8E-9	
	Cancer Incidence	3.3E-8	
	Genetic Effects	2.0E-9	
Noninvolved Worker MEI	Dose (rem)	2.0E-8	
	Cancer Fatalities	1.0E-11	
	Cancer Incidence	3.4E-11	
	Genetic Effects	2.0E-12	
	Hazard Index		
Offsite Population 7939785	Dose (person-rem)	5.0E-3	
	Cancer Fatalities	2.5E-6	
	Cancer Incidence	8.5E-6	
	Genetic Effects	5.0E-7	
Offsite MEI	Dose (rem)	2.8E-8	
	Cancer Fatalities	1.4E-11	
	Cancer Incidence	4.7E-11	
	Genetic Effects	2.8E-12	
	Hazard Index		
WM Workers 224	Dose (FTE-rem)	7.9E1	
	Cancer Fatalities	3.2E-2	
	Cancer Incidence	1.1E-1	
	Genetic Effects	4.8E-3	
	Exposure Index		
	Construction Fatalities		2.4E-2
	Construction Injuries		1.1E1
	Operation Fatalities		2.7E-2
	Operation Injuries		2.3E1

Table 3.1-177. Risks Associated with Routine Treatment of LLW at Hanford Under Centralized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8674	Dose (person-rem)	1.9E-4	
	Cancer Fatalities	9.6E-8	
	Cancer Incidence	3.3E-7	
	Genetic Effects	1.9E-8	
Noninvolved Worker MEI	Dose (rem)	3.3E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.6E-10	
	Genetic Effects	3.3E-11	
	Hazard Index		
Offsite Population 377645	Dose (person-rem)	5.4E-3	
	Cancer Fatalities	2.7E-6	
	Cancer Incidence	9.1E-6	
	Genetic Effects	5.4E-7	
Offsite MEI	Dose (rem)	1.1E-7	
	Cancer Fatalities	5.5E-11	
	Cancer Incidence	1.9E-10	
	Genetic Effects	1.1E-11	
	Hazard Index		
WM Workers 577	Dose (FTE-rem)	2.5E2	
	Cancer Fatalities	9.9E-2	
	Cancer Incidence	3.5E-1	
	Genetic Effects	1.5E-2	
	Exposure Index		
	Construction Fatalities		5.3E-2
	Construction Injuries		2.3E1
	Operation Fatalities		7.0E-2
	Operation Injuries		5.9E1

Table 3.1-178. Risks Associated with Routine Treatment of LLW at INEL Under Centralized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8451	Dose (person-rem)	7.7E-4	
	Cancer Fatalities	3.9E-7	
	Cancer Incidence	1.3E-6	
	Genetic Effects	7.7E-8	
Noninvolved Worker MEI	Dose (rem)	6.4E-7	
	Cancer Fatalities	3.2E-10	
	Cancer Incidence	1.1E-9	
	Genetic Effects	6.4E-11	
	Hazard Index		
Offsite Population 153061	Dose (person-rem)	2.6E-3	
	Cancer Fatalities	1.3E-6	
	Cancer Incidence	4.4E-6	
	Genetic Effects	2.6E-7	
Offsite MEI	Dose (rem)	3.2E-7	
	Cancer Fatalities	1.6E-10	
	Cancer Incidence	5.4E-10	
	Genetic Effects	3.2E-11	
	Hazard Index		
WM Workers 1032	Dose (FTE-rem)	5.2E2	
	Cancer Fatalities	2.1E-1	
	Cancer Incidence	7.2E-1	
	Genetic Effects	3.1E-2	
	Exposure Index		
	Construction Fatalities		1.0E-1
	Construction Injuries		4.4E1
	Operation Fatalities		1.3E-1
	Operation Injuries		1.1E2

Table 3.1-179. Risks Associated with Routine Treatment of LLW at KAPL-K Under Centralized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3896	Dose (person-rem)	1.2E-2	
	Cancer Fatalities	6.2E-6	
	Cancer Incidence	2.1E-5	
	Genetic Effects	1.2E-6	
Noninvolved Worker MEI	Dose (rem)	5.8E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.8E-9	
	Genetic Effects	5.8E-10	
	Hazard Index		
Offsite Population 1290172	Dose (person-rem)	1.1	
	Cancer Fatalities	5.3E-4	
	Cancer Incidence	1.8E-3	
	Genetic Effects	1.1E-4	
Offsite MEI	Dose (rem)	2.4E-5	
	Cancer Fatalities	1.2E-8	
	Cancer Incidence	4.0E-8	
	Genetic Effects	2.4E-9	
	Hazard Index		
WM Workers 650	Dose (FTE-rem)	1.4E1	
	Cancer Fatalities	5.8E-3	
	Cancer Incidence	2.0E-2	
	Genetic Effects	8.7E-4	
	Exposure Index		
	Construction Fatalities		6.2E-2
	Construction Injuries		2.7E1
	Operation Fatalities		7.9E-2
	Operation Injuries		6.7E1

Table 3.1–180. Risks Associated with Routine Treatment of LLW at KCP Under Centralized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 4410	Dose (person-rem)	2.4E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	4.1E-11	
	Genetic Effects	2.4E-12	
Noninvolved Worker MEI	Dose (rem)	1.7E-11	
	Cancer Fatalities	9.0E-15	
	Cancer Incidence	2.9E-14	
	Genetic Effects	0.00	
	Hazard Index		
Offsite Population 1729833	Dose (person-rem)	2.1E-6	
	Cancer Fatalities	1.1E-9	
	Cancer Incidence	3.6E-9	
	Genetic Effects	2.1E-10	
Offsite MEI	Dose (rem)	9.7E-11	
	Cancer Fatalities	4.8E-14	
	Cancer Incidence	1.6E-13	
	Genetic Effects	1.0E-14	
	Hazard Index		
WM Workers 11	Dose (FTE-rem)	7.3E-2	
	Cancer Fatalities	2.9E-5	
	Cancer Incidence	1.0E-4	
	Genetic Effects	4.4E-6	
	Exposure Index		
	Construction Fatalities		1.3E-3
	Construction Injuries		5.6E-1
	Operation Fatalities		1.3E-3
	Operation Injuries		1.1

Table 3.1-181. Risks Associated with Routine Treatment of LLW at K-25 Under Centralized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3800	Dose (person-rem)	1.3E-5	
	Cancer Fatalities	6.7E-9	
	Cancer Incidence	2.3E-8	
	Genetic Effects	1.3E-9	
Noninvolved Worker MEI	Dose (rem)	1.2E-8	
	Cancer Fatalities	6.1E-12	
	Cancer Incidence	2.1E-11	
	Genetic Effects	1.2E-12	
	Hazard Index		
Offsite Population 871406	Dose (person-rem)	2.3E-4	
	Cancer Fatalities	1.1E-7	
	Cancer Incidence	3.9E-7	
	Genetic Effects	2.3E-8	
Offsite MEI	Dose (rem)	5.0E-9	
	Cancer Fatalities	2.5E-12	
	Cancer Incidence	8.6E-12	
	Genetic Effects	5.0E-13	
	Hazard Index		
WM Workers 867	Dose (FTE-rem)	8.9	
	Cancer Fatalities	3.6E-3	
	Cancer Incidence	1.3E-2	
	Genetic Effects	5.3E-4	
	Exposure Index		
	Construction Fatalities		7.8E-2
	Construction Injuries		3.4E1
	Operation Fatalities		1.1E-1
	Operation Injuries		8.9E1

Table 3.1-182. Risks Associated with Routine Treatment of LLW at LANL Under Centralized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 11552	Dose (person-rem)	2.8E-2	
	Cancer Fatalities	1.4E-5	
	Cancer Incidence	4.8E-5	
	Genetic Effects	2.8E-6	
Noninvolved Worker MEI	Dose (rem)	2.2E-5	
	Cancer Fatalities	1.1E-8	
	Cancer Incidence	3.7E-8	
	Genetic Effects	2.2E-9	
	Hazard Index		
Offsite Population 159152	Dose (person-rem)	4.2E-1	
	Cancer Fatalities	2.1E-4	
	Cancer Incidence	7.1E-4	
	Genetic Effects	4.2E-5	
Offsite MEI	Dose (rem)	4.4E-5	
	Cancer Fatalities	2.2E-8	
	Cancer Incidence	7.5E-8	
	Genetic Effects	4.4E-9	
	Hazard Index		
WM Workers 902	Dose (FTE-rem)	3.5E2	
	Cancer Fatalities	1.4E-1	
	Cancer Incidence	4.9E-1	
	Genetic Effects	2.1E-2	
	Exposure Index		
	Construction Fatalities		8.0E-2
	Construction Injuries		3.5E1
	Operation Fatalities		1.1E-1
	Operation Injuries		9.3E1

Table 3.1-183. Risks Associated with Routine Treatment of LLW at LBL Under Centralized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3940	Dose (person-rem)	5.4E-2	
	Cancer Fatalities	2.7E-5	
	Cancer Incidence	9.1E-5	
	Genetic Effects	5.4E-6	
Noninvolved Worker MEI	Dose (rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.1E-8	
	Genetic Effects	4.2E-9	
	Hazard Index		
Offsite Population 1586829	Dose (person-rem)	3.6E1	
	Cancer Fatalities	1.8E-2	
	Cancer Incidence	6.2E-2	
	Genetic Effects	3.6E-3	
Offsite MEI	Dose (rem)	5.7E-4	
	Cancer Fatalities	2.9E-7	
	Cancer Incidence	9.7E-7	
	Genetic Effects	5.7E-8	
	Hazard Index		
WM Workers 174	Dose (FTE-rem)	1.9E1	
	Cancer Fatalities	7.6E-3	
	Cancer Incidence	2.7E-2	
	Genetic Effects	1.1E-3	
	Exposure Index		
	Construction Fatalities		2.2E-2
	Construction Injuries		9.6
	Operation Fatalities		2.1E-2
	Operation Injuries		1.8E1

Table 3.1-184. Risks Associated with Routine Treatment of LLW at LLNL Under Centralized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 9504	Dose (person-rem)	2.8E-1	
	Cancer Fatalities	1.4E-4	
	Cancer Incidence	4.7E-4	
	Genetic Effects	2.8E-5	
Noninvolved Worker MEI	Dose (rem)	9.4E-5	
	Cancer Fatalities	4.7E-8	
	Cancer Incidence	1.6E-7	
	Genetic Effects	9.4E-9	
	Hazard Index		
Offsite Population 6324234	Dose (person-rem)	2.0E1	
	Cancer Fatalities	1.0E-2	
	Cancer Incidence	3.4E-2	
	Genetic Effects	2.0E-3	
Offsite MEI	Dose (rem)	3.3E-4	
	Cancer Fatalities	1.6E-7	
	Cancer Incidence	5.5E-7	
	Genetic Effects	3.3E-8	
	Hazard Index		
WM Workers 227	Dose (FTE-rem)	6.4	
	Cancer Fatalities	2.5E-3	
	Cancer Incidence	8.9E-3	
	Genetic Effects	3.8E-4	
	Exposure Index		
	Construction Fatalities		2.9E-2
	Construction Injuries		1.3E1
	Operation Fatalities		2.8E-2
	Operation Injuries		2.3E1

Table 3.1–185. Risks Associated with Routine Treatment of LLW at Mound Under Centralized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1688	Dose (person-rem)	1.6E-6	
	Cancer Fatalities	8.0E-10	
	Cancer Incidence	2.7E-9	
	Genetic Effects	1.6E-10	
Noninvolved Worker MEI	Dose (rem)	2.5E-9	
	Cancer Fatalities	1.3E-12	
	Cancer Incidence	4.3E-12	
	Genetic Effects	2.5E-13	
	Hazard Index		
Offsite Population 3032983	Dose (person-rem)	2.1E-4	
	Cancer Fatalities	1.0E-7	
	Cancer Incidence	3.5E-7	
	Genetic Effects	2.1E-8	
Offsite MEI	Dose (rem)	1.2E-8	
	Cancer Fatalities	5.9E-12	
	Cancer Incidence	2.0E-11	
	Genetic Effects	1.2E-12	
	Hazard Index		
WM Workers 435	Dose (FTE-rem)	3.3	
	Cancer Fatalities	1.3E-3	
	Cancer Incidence	4.7E-3	
	Genetic Effects	2.0E-4	
	Exposure Index		
	Construction Fatalities		5.1E-2
	Construction Injuries		2.2E1
	Operation Fatalities		5.3E-2
	Operation Injuries		4.5E1

Table 3.1–186. Risks Associated with Routine Treatment of LLW at ORNL Under Centralized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3809	Dose (person-rem)	3.8E-4	
	Cancer Fatalities	1.9E-7	
	Cancer Incidence	6.4E-7	
	Genetic Effects	3.8E-8	
Noninvolved Worker MEI	Dose (rem)	3.4E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.9E-10	
	Genetic Effects	3.4E-11	
	Hazard Index		
Offsite Population 881652	Dose (person-rem)	1.1E-2	
	Cancer Fatalities	5.7E-6	
	Cancer Incidence	1.9E-5	
	Genetic Effects	1.1E-6	
Offsite MEI	Dose (rem)	3.5E-7	
	Cancer Fatalities	1.8E-10	
	Cancer Incidence	6.0E-10	
	Genetic Effects	3.5E-11	
	Hazard Index		
WM Workers 444	Dose (FTE-rem)	6.5E1	
	Cancer Fatalities	2.6E-2	
	Cancer Incidence	9.1E-2	
	Genetic Effects	3.9E-3	
	Exposure Index		
	Construction Fatalities		6.7E-2
	Construction Injuries		2.9E1
	Operation Fatalities		5.4E-2
	Operation Injuries		4.6E1

Table 3.1–187. Risks Associated with Routine Treatment of LLW at Pantex Under Centralized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 2825	Dose (person-rem)	3.3E-5	
	Cancer Fatalities	1.6E-8	
	Cancer Incidence	5.6E-8	
	Genetic Effects	3.3E-9	
Noninvolved Worker MEI	Dose (rem)	6.3E-8	
	Cancer Fatalities	3.1E-11	
	Cancer Incidence	1.1E-10	
	Genetic Effects	6.3E-12	
	Hazard Index		
Offsite Population 265185	Dose (person-rem)	2.2E-4	
	Cancer Fatalities	1.1E-7	
	Cancer Incidence	3.7E-7	
	Genetic Effects	2.2E-8	
Offsite MEI	Dose (rem)	1.8E-8	
	Cancer Fatalities	9.2E-12	
	Cancer Incidence	3.1E-11	
	Genetic Effects	1.8E-12	
	Hazard Index		
WM Workers 675	Dose (FTE-rem)	6.4	
	Cancer Fatalities	2.6E-3	
	Cancer Incidence	9.0E-3	
	Genetic Effects	3.9E-4	
	Exposure Index		
	Construction Fatalities		6.1E-2
	Construction Injuries		2.7E1
	Operation Fatalities		8.2E-2
	Operation Injuries		6.9E1

Table 3.1-188. Risks Associated with Routine Treatment of LLW at PGDP Under Centralized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1952	Dose (person-rem)	3.3E-6	
	Cancer Fatalities	1.7E-9	
	Cancer Incidence	5.6E-9	
	Genetic Effects	3.3E-10	
Noninvolved Worker MEI	Dose (rem)	4.1E-9	
	Cancer Fatalities	2.0E-12	
	Cancer Incidence	6.9E-12	
	Genetic Effects	4.1E-13	
	Hazard Index		
Offsite Population 500502	Dose (person-rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.1E-8	
	Genetic Effects	4.2E-9	
Offsite MEI	Dose (rem)	4.7E-9	
	Cancer Fatalities	2.3E-12	
	Cancer Incidence	8.0E-12	
	Genetic Effects	4.7E-13	
	Hazard Index		
WM Workers 503	Dose (FTE-rem)	3.7	
	Cancer Fatalities	1.5E-3	
	Cancer Incidence	5.2E-3	
	Genetic Effects	2.2E-4	
	Exposure Index		
	Construction Fatalities		5.1E-2
	Construction Injuries		2.2E1
	Operation Fatalities		6.1E-2
	Operation Injuries		5.2E1

Table 3.1–189. Risks Associated with Routine Treatment of LLW at Pinellas Under Centralized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1167	Dose (person-rem)	4.2E-8	
	Cancer Fatalities	2.1E-11	
	Cancer Incidence	7.2E-11	
	Genetic Effects	4.2E-12	
Noninvolved Worker MEI	Dose (rem)	8.7E-11	
	Cancer Fatalities	4.4E-14	
	Cancer Incidence	1.5E-13	
	Genetic Effects	9.0E-15	
	Hazard Index		
Offsite Population 2532174	Dose (person-rem)	3.5E-5	
	Cancer Fatalities	1.8E-8	
	Cancer Incidence	6.0E-8	
	Genetic Effects	3.5E-9	
Offsite MEI	Dose (rem)	7.7E-10	
	Cancer Fatalities	3.8E-13	
	Cancer Incidence	1.3E-12	
	Genetic Effects	7.7E-14	
	Hazard Index		
WM Workers 21	Dose (FTE-rem)	1.4E-1	
	Cancer Fatalities	5.6E-5	
	Cancer Incidence	2.0E-4	
	Genetic Effects	8.4E-6	
	Exposure Index		
	Construction Fatalities		2.5E-3
	Construction Injuries		1.1
	Operation Fatalities		2.5E-3
	Operation Injuries		2.1

Table 3.1–190. Risks Associated with Routine Treatment of LLW at Ports Under Centralized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3226	Dose (person-rem)	3.7E-7	
	Cancer Fatalities	1.8E-10	
	Cancer Incidence	6.3E-10	
	Genetic Effects	3.7E-11	
Noninvolved Worker MEI	Dose (rem)	2.1E-10	
	Cancer Fatalities	1.0E-13	
	Cancer Incidence	3.5E-13	
	Genetic Effects	2.1E-14	
	Hazard Index		
Offsite Population 639602	Dose (person-rem)	3.5E-6	
	Cancer Fatalities	1.8E-9	
	Cancer Incidence	6.0E-9	
	Genetic Effects	3.5E-10	
Offsite MEI	Dose (rem)	4.4E-10	
	Cancer Fatalities	2.2E-13	
	Cancer Incidence	7.5E-13	
	Genetic Effects	4.4E-14	
	Hazard Index		
WM Workers 1075	Dose (FTE-rem)	1.1E1	
	Cancer Fatalities	4.6E-3	
	Cancer Incidence	1.6E-2	
	Genetic Effects	6.8E-4	
	Exposure Index		
	Construction Fatalities		9.8E-2
	Construction Injuries		4.3E1
	Operation Fatalities		1.3E-1
	Operation Injuries		1.1E2

Table 3.1-191. Risks Associated with Routine Treatment of LLW at RFETS Under Centralized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 6993	Dose (person-rem)	4.1E-5	
	Cancer Fatalities	2.0E-8	
	Cancer Incidence	6.9E-8	
	Genetic Effects	4.1E-9	
Noninvolved Worker MEI	Dose (rem)	2.5E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	4.2E-11	
	Genetic Effects	2.5E-12	
	Hazard Index		
Offsite Population 2171877	Dose (person-rem)	8.0E-4	
	Cancer Fatalities	4.0E-7	
	Cancer Incidence	1.4E-6	
	Genetic Effects	8.0E-8	
Offsite MEI	Dose (rem)	1.1E-8	
	Cancer Fatalities	5.4E-12	
	Cancer Incidence	1.8E-11	
	Genetic Effects	1.1E-12	
	Hazard Index		
WM Workers 344	Dose (FTE-rem)	2.9	
	Cancer Fatalities	1.2E-3	
	Cancer Incidence	4.0E-3	
	Genetic Effects	1.7E-4	
	Exposure Index		
	Construction Fatalities		3.8E-2
	Construction Injuries		1.7E1
	Operation Fatalities		4.2E-2
	Operation Injuries		3.5E1

Table 3.1–192. Risks Associated with Routine Treatment of LLW at SNL–NM Under Centralized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 10576	Dose (person-rem)	6.1E-5	
	Cancer Fatalities	3.0E-8	
	Cancer Incidence	1.0E-7	
	Genetic Effects	6.1E-9	
Noninvolved Worker MEI	Dose (rem)	2.6E-8	
	Cancer Fatalities	1.3E-11	
	Cancer Incidence	4.3E-11	
	Genetic Effects	2.6E-12	
	Hazard Index		
Offsite Population 610714	Dose (person-rem)	3.6E-3	
	Cancer Fatalities	1.8E-6	
	Cancer Incidence	6.2E-6	
	Genetic Effects	3.6E-7	
Offsite MEI	Dose (rem)	1.4E-7	
	Cancer Fatalities	7.2E-11	
	Cancer Incidence	2.4E-10	
	Genetic Effects	1.4E-11	
	Hazard Index		
WM Workers 210	Dose (FTE-rem)	1.0	
	Cancer Fatalities	4.1E-4	
	Cancer Incidence	1.5E-3	
	Genetic Effects	6.2E-5	
	Exposure Index		
	Construction Fatalities		2.5E-2
	Construction Injuries		1.1E1
	Operation Fatalities		2.5E-2
	Operation Injuries		2.2E1

Table 3.1–193. Risks Associated with Routine Treatment of LLW at SRS Under Centralized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 15996	Dose (person-rem)	2.6E-3	
	Cancer Fatalities	1.3E-6	
	Cancer Incidence	4.4E-6	
	Genetic Effects	2.6E-7	
Noninvolved Worker MEI	Dose (rem)	2.3E-6	
	Cancer Fatalities	1.1E-9	
	Cancer Incidence	3.9E-9	
	Genetic Effects	2.3E-10	
	Hazard Index		
Offsite Population 620618	Dose (person-rem)	3.7E-2	
	Cancer Fatalities	1.9E-5	
	Cancer Incidence	6.3E-5	
	Genetic Effects	3.7E-6	
Offsite MEI	Dose (rem)	3.5E-7	
	Cancer Fatalities	1.8E-10	
	Cancer Incidence	5.9E-10	
	Genetic Effects	3.5E-11	
	Hazard Index		
WM Workers 2008	Dose (FTE-rem)	5.7E2	
	Cancer Fatalities	2.3E-1	
	Cancer Incidence	8.0E-1	
	Genetic Effects	3.4E-2	
	Exposure Index		
	Construction Fatalities		2.0E-1
	Construction Injuries		8.7E1
	Operation Fatalities		2.4E-1
	Operation Injuries		2.1E2

Table 3.1-194. Risks Associated with Routine Treatment of LLW at Y-12 Under Centralized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 7699	Dose (person-rem)	2.4E-5	
	Cancer Fatalities	1.2E-8	
	Cancer Incidence	4.0E-8	
	Genetic Effects	2.4E-9	
Noninvolved Worker MEI	Dose (rem)	7.8E-9	
	Cancer Fatalities	3.9E-12	
	Cancer Incidence	1.3E-11	
	Genetic Effects	7.8E-13	
	Hazard Index		
Offsite Population 895379	Dose (person-rem)	1.7E-4	
	Cancer Fatalities	8.4E-8	
	Cancer Incidence	2.9E-7	
	Genetic Effects	1.7E-8	
Offsite MEI	Dose (rem)	6.2E-9	
	Cancer Fatalities	3.1E-12	
	Cancer Incidence	1.1E-11	
	Genetic Effects	6.2E-13	
	Hazard Index		
WM Workers 1222	Dose (FTE-rem)	1.3E1	
	Cancer Fatalities	5.3E-3	
	Cancer Incidence	1.9E-2	
	Genetic Effects	7.9E-4	
	Exposure Index		
	Construction Fatalities		1.1E-1
	Construction Injuries		4.9E1
	Operation Fatalities		1.5E-1
	Operation Injuries		1.3E2

Table 3.1–195. Risks Associated with Routine Treatment of LLW at ANL-E Under Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 5571	Dose (person-rem)	2.0E-5	
	Cancer Fatalities	9.8E-9	
	Cancer Incidence	3.3E-8	
	Genetic Effects	2.0E-9	
Noninvolved Worker MEI	Dose (rem)	2.0E-8	
	Cancer Fatalities	1.0E-11	
	Cancer Incidence	3.4E-11	
	Genetic Effects	2.0E-12	
	Hazard Index		
Offsite Population 7939785	Dose (person-rem)	5.0E-3	
	Cancer Fatalities	2.5E-6	
	Cancer Incidence	8.5E-6	
	Genetic Effects	5.0E-7	
Offsite MEI	Dose (rem)	2.8E-8	
	Cancer Fatalities	1.4E-11	
	Cancer Incidence	4.7E-11	
	Genetic Effects	2.8E-12	
	Hazard Index		
WM Workers 224	Dose (FTE-rem)	7.9E1	
	Cancer Fatalities	3.2E-2	
	Cancer Incidence	1.1E-1	
	Genetic Effects	4.8E-3	
	Exposure Index		
	Construction Fatalities		2.4E-2
	Construction Injuries		1.1E1
	Operation Fatalities		2.7E-2
	Operation Injuries		2.3E1

Table 3.1-196. Risks Associated with Routine Treatment of LLW at Hanford Under Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8674	Dose (person-rem)	3.0E-4	
	Cancer Fatalities	1.5E-7	
	Cancer Incidence	5.1E-7	
	Genetic Effects	3.0E-8	
Noninvolved Worker MEI	Dose (rem)	5.2E-7	
	Cancer Fatalities	2.6E-10	
	Cancer Incidence	8.8E-10	
	Genetic Effects	5.2E-11	
	Hazard Index		
Offsite Population 377645	Dose (person-rem)	8.3E-3	
	Cancer Fatalities	4.2E-6	
	Cancer Incidence	1.4E-5	
	Genetic Effects	8.3E-7	
Offsite MEI	Dose (rem)	1.7E-7	
	Cancer Fatalities	8.5E-11	
	Cancer Incidence	2.9E-10	
	Genetic Effects	1.7E-11	
	Hazard Index		
WM Workers 843	Dose (FTE-rem)	2.6E2	
	Cancer Fatalities	1.0E-1	
	Cancer Incidence	3.6E-1	
	Genetic Effects	1.6E-2	
	Exposure Index		
	Construction Fatalities		8.1E-2
	Construction Injuries		3.5E1
	Operation Fatalities		1.0E-1
	Operation Injuries		8.7E1

Table 3.1–197. Risks Associated with Routine Treatment of LLW at INEL Under Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8451	Dose (person-rem)	7.7E-4	
	Cancer Fatalities	3.9E-7	
	Cancer Incidence	1.3E-6	
	Genetic Effects	7.7E-8	
Noninvolved Worker MEI	Dose (rem)	6.4E-7	
	Cancer Fatalities	3.2E-10	
	Cancer Incidence	1.1E-9	
	Genetic Effects	6.4E-11	
	Hazard Index		
Offsite Population 153061	Dose (person-rem)	2.6E-3	
	Cancer Fatalities	1.3E-6	
	Cancer Incidence	4.4E-6	
	Genetic Effects	2.6E-7	
Offsite MEI	Dose (rem)	3.2E-7	
	Cancer Fatalities	1.6E-10	
	Cancer Incidence	5.4E-10	
	Genetic Effects	3.2E-11	
	Hazard Index		
WM Workers 1032	Dose (FTE-rem)	5.2E2	
	Cancer Fatalities	2.1E-1	
	Cancer Incidence	7.2E-1	
	Genetic Effects	3.1E-2	
	Exposure Index		
	Construction Fatalities		1.0E-1
	Construction Injuries		4.4E1
	Operation Fatalities		1.3E-1
	Operation Injuries		1.1E2

Table 3.1-198. Risks Associated with Routine Treatment of LLW at KAPL-K Under Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3896	Dose (person-rem)	1.2E-2	
	Cancer Fatalities	6.2E-6	
	Cancer Incidence	2.1E-5	
	Genetic Effects	1.2E-6	
Noninvolved Worker MEI	Dose (rem)	5.8E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.8E-9	
	Genetic Effects	5.8E-10	
	Hazard Index		
Offsite Population 1290172	Dose (person-rem)	1.1	
	Cancer Fatalities	5.3E-4	
	Cancer Incidence	1.8E-3	
	Genetic Effects	1.1E-4	
Offsite MEI	Dose (rem)	2.4E-5	
	Cancer Fatalities	1.2E-8	
	Cancer Incidence	4.0E-8	
	Genetic Effects	2.4E-9	
	Hazard Index		
WM Workers 650	Dose (FTE-rem)	1.4E1	
	Cancer Fatalities	5.8E-3	
	Cancer Incidence	2.0E-2	
	Genetic Effects	8.7E-4	
	Exposure Index		
	Construction Fatalities		6.2E-2
	Construction Injuries		2.7E1
	Operation Fatalities		7.9E-2
	Operation Injuries		6.7E1

Table 3.1-199. Risks Associated with Routine Treatment of LLW at KCP Under Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 4410	Dose (person-rem)	2.4E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	4.1E-11	
	Genetic Effects	2.4E-12	
Noninvolved Worker MEI	Dose (rem)	1.7E-11	
	Cancer Fatalities	9.0E-15	
	Cancer Incidence	2.9E-14	
	Genetic Effects	0.00	
	Hazard Index		
Offsite Population 1729833	Dose (person-rem)	2.1E-6	
	Cancer Fatalities	1.1E-9	
	Cancer Incidence	3.6E-9	
	Genetic Effects	2.1E-10	
Offsite MEI	Dose (rem)	9.7E-11	
	Cancer Fatalities	4.8E-14	
	Cancer Incidence	1.6E-13	
	Genetic Effects	1.0E-14	
	Hazard Index		
WM Workers 11	Dose (FTE-rem)	7.3E-2	
	Cancer Fatalities	2.9E-5	
	Cancer Incidence	1.0E-4	
	Genetic Effects	4.4E-6	
	Exposure Index		
	Construction Fatalities		1.3E-3
	Construction Injuries		5.6E-1
	Operation Fatalities		1.3E-3
	Operation Injuries		1.1

Table 3.1-200. Risks Associated with Routine Treatment of LLW at K-25 Under Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3800	Dose (person-rem)	1.3E-5	
	Cancer Fatalities	6.7E-9	
	Cancer Incidence	2.3E-8	
	Genetic Effects	1.3E-9	
Noninvolved Worker MEI	Dose (rem)	1.2E-8	
	Cancer Fatalities	6.1E-12	
	Cancer Incidence	2.1E-11	
	Genetic Effects	1.2E-12	
	Hazard Index		
Offsite Population 871406	Dose (person-rem)	2.3E-4	
	Cancer Fatalities	1.1E-7	
	Cancer Incidence	3.9E-7	
	Genetic Effects	2.3E-8	
Offsite MEI	Dose (rem)	5.0E-9	
	Cancer Fatalities	2.5E-12	
	Cancer Incidence	8.6E-12	
	Genetic Effects	5.0E-13	
	Hazard Index		
WM Workers 867	Dose (FTE-rem)	8.9	
	Cancer Fatalities	3.6E-3	
	Cancer Incidence	1.3E-2	
	Genetic Effects	5.3E-4	
	Exposure Index		
	Construction Fatalities		7.8E-2
	Construction Injuries		3.4E1
	Operation Fatalities		1.1E-1
	Operation Injuries		8.9E1

Table 3.1–201. Risks Associated with Routine Treatment of LLW at LANL Under Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 11552	Dose (person-rem)	2.8E-2	
	Cancer Fatalities	1.4E-5	
	Cancer Incidence	4.8E-5	
	Genetic Effects	2.8E-6	
Noninvolved Worker MEI	Dose (rem)	2.2E-5	
	Cancer Fatalities	1.1E-8	
	Cancer Incidence	3.7E-8	
	Genetic Effects	2.2E-9	
	Hazard Index		
Offsite Population 159152	Dose (person-rem)	4.2E-1	
	Cancer Fatalities	2.1E-4	
	Cancer Incidence	7.1E-4	
	Genetic Effects	4.2E-5	
Offsite MEI	Dose (rem)	4.4E-5	
	Cancer Fatalities	2.2E-8	
	Cancer Incidence	7.5E-8	
	Genetic Effects	4.4E-9	
	Hazard Index		
WM Workers 902	Dose (FTE-rem)	3.5E2	
	Cancer Fatalities	1.4E-1	
	Cancer Incidence	4.9E-1	
	Genetic Effects	2.1E-2	
	Exposure Index		
	Construction Fatalities		8.0E-2
	Construction Injuries		3.5E1
	Operation Fatalities		1.1E-1
	Operation Injuries		9.3E1

Table 3.1-202. Risks Associated with Routine Treatment of LLW at LBL Under Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3940	Dose (person-rem)	5.4E-2	
	Cancer Fatalities	2.7E-5	
	Cancer Incidence	9.1E-5	
	Genetic Effects	5.4E-6	
Noninvolved Worker MEI	Dose (rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.1E-8	
	Genetic Effects	4.2E-9	
	Hazard Index		
Offsite Population 1586829	Dose (person-rem)	3.6E1	
	Cancer Fatalities	1.8E-2	
	Cancer Incidence	6.2E-2	
	Genetic Effects	3.6E-3	
Offsite MEI	Dose (rem)	5.7E-4	
	Cancer Fatalities	2.9E-7	
	Cancer Incidence	9.7E-7	
	Genetic Effects	5.7E-8	
	Hazard Index		
WM Workers 174	Dose (FTE-rem)	1.9E1	
	Cancer Fatalities	7.6E-3	
	Cancer Incidence	2.7E-2	
	Genetic Effects	1.1E-3	
	Exposure Index		
	Construction Fatalities		2.2E-2
	Construction Injuries		9.6
	Operation Fatalities		2.1E-2
	Operation Injuries		1.8E1

Table 3.1–203. Risks Associated with Routine Treatment of LLW at LLNL Under Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 9504	Dose (person-rem)	2.8E-1	
	Cancer Fatalities	1.4E-4	
	Cancer Incidence	4.7E-4	
	Genetic Effects	2.8E-5	
Noninvolved Worker MEI	Dose (rem)	9.4E-5	
	Cancer Fatalities	4.7E-8	
	Cancer Incidence	1.6E-7	
	Genetic Effects	9.4E-9	
	Hazard Index		
Offsite Population 6324234	Dose (person-rem)	2.0E1	
	Cancer Fatalities	1.0E-2	
	Cancer Incidence	3.4E-2	
	Genetic Effects	2.0E-3	
Offsite MEI	Dose (rem)	3.3E-4	
	Cancer Fatalities	1.6E-7	
	Cancer Incidence	5.5E-7	
	Genetic Effects	3.3E-8	
	Hazard Index		
WM Workers 227	Dose (FTE-rem)	6.4	
	Cancer Fatalities	2.5E-3	
	Cancer Incidence	8.9E-3	
	Genetic Effects	3.8E-4	
	Exposure Index		
	Construction Fatalities		2.9E-2
	Construction Injuries		1.3E1
	Operation Fatalities		2.8E-2
	Operation Injuries		2.3E1

Table 3.1-204. Risks Associated with Routine Treatment of LLW at Mound Under Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1688	Dose (person-rem)	1.6E-6	
	Cancer Fatalities	8.0E-10	
	Cancer Incidence	2.7E-9	
	Genetic Effects	1.6E-10	
Noninvolved Worker MEI	Dose (rem)	2.5E-9	
	Cancer Fatalities	1.3E-12	
	Cancer Incidence	4.3E-12	
	Genetic Effects	2.5E-13	
	Hazard Index		
Offsite Population 3032983	Dose (person-rem)	2.1E-4	
	Cancer Fatalities	1.0E-7	
	Cancer Incidence	3.5E-7	
	Genetic Effects	2.1E-8	
Offsite MEI	Dose (rem)	1.2E-8	
	Cancer Fatalities	5.9E-12	
	Cancer Incidence	2.0E-11	
	Genetic Effects	1.2E-12	
	Hazard Index		
WM Workers 435	Dose (FTE-rem)	3.3	
	Cancer Fatalities	1.3E-3	
	Cancer Incidence	4.7E-3	
	Genetic Effects	2.0E-4	
	Exposure Index		
	Construction Fatalities		5.1E-2
	Construction Injuries		2.2E1
	Operation Fatalities		5.3E-2
	Operation Injuries		4.5E1

Table 3.1-205. Risks Associated with Routine Treatment of LLW at NTS Under Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3756	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
Noninvolved Worker MEI	Dose (rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
Offsite Population 14266	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
Offsite MEI	Dose (rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers 0	Dose (FTE-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Exposure Index		
	Construction Fatalities		0.00
	Construction Injuries		0.00
	Operation Fatalities		0.00
	Operation Injuries		0.00

Table 3.1-206. Risks Associated with Routine Treatment of LLW at ORNL Under Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3809	Dose (person-rem)	3.8E-4	
	Cancer Fatalities	1.9E-7	
	Cancer Incidence	6.4E-7	
	Genetic Effects	3.8E-8	
Noninvolved Worker MEI	Dose (rem)	3.4E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.9E-10	
	Genetic Effects	3.4E-11	
	Hazard Index		
Offsite Population 881652	Dose (person-rem)	1.1E-2	
	Cancer Fatalities	5.7E-6	
	Cancer Incidence	1.9E-5	
	Genetic Effects	1.1E-6	
Offsite MEI	Dose (rem)	3.5E-7	
	Cancer Fatalities	1.8E-10	
	Cancer Incidence	6.0E-10	
	Genetic Effects	3.5E-11	
	Hazard Index		
WM Workers 444	Dose (FTE-rem)	6.5E1	
	Cancer Fatalities	2.6E-2	
	Cancer Incidence	9.1E-2	
	Genetic Effects	3.9E-3	
	Exposure Index		
	Construction Fatalities		6.7E-2
	Construction Injuries		2.9E1
	Operation Fatalities		5.4E-2
	Operation Injuries		4.6E1

Table 3.1-207. Risks Associated with Routine Treatment of LLW at Pantex Under Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 2825	Dose (person-rem)	3.3E-5	
	Cancer Fatalities	1.6E-8	
	Cancer Incidence	5.6E-8	
	Genetic Effects	3.3E-9	
Noninvolved Worker MEI	Dose (rem)	6.3E-8	
	Cancer Fatalities	3.1E-11	
	Cancer Incidence	1.1E-10	
	Genetic Effects	6.3E-12	
	Hazard Index		
Offsite Population 265185	Dose (person-rem)	2.2E-4	
	Cancer Fatalities	1.1E-7	
	Cancer Incidence	3.7E-7	
	Genetic Effects	2.2E-8	
Offsite MEI	Dose (rem)	1.8E-8	
	Cancer Fatalities	9.2E-12	
	Cancer Incidence	3.1E-11	
	Genetic Effects	1.8E-12	
	Hazard Index		
WM Workers 675	Dose (FTE-rem)	6.4	
	Cancer Fatalities	2.6E-3	
	Cancer Incidence	9.0E-3	
	Genetic Effects	3.9E-4	
	Exposure Index		
	Construction Fatalities		6.1E-2
	Construction Injuries		2.7E1
	Operation Fatalities		8.2E-2
	Operation Injuries		6.9E1

Table 3.1–208. Risks Associated with Routine Treatment of LLW at PGDP Under Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1952	Dose (person-rem)	3.3E-6	
	Cancer Fatalities	1.7E-9	
	Cancer Incidence	5.6E-9	
	Genetic Effects	3.3E-10	
Noninvolved Worker MEI	Dose (rem)	4.1E-9	
	Cancer Fatalities	2.0E-12	
	Cancer Incidence	6.9E-12	
	Genetic Effects	4.1E-13	
	Hazard Index		
Offsite Population 500502	Dose (person-rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.1E-8	
	Genetic Effects	4.2E-9	
Offsite MEI	Dose (rem)	4.7E-9	
	Cancer Fatalities	2.3E-12	
	Cancer Incidence	8.0E-12	
	Genetic Effects	4.7E-13	
	Hazard Index		
WM Workers 503	Dose (FTE-rem)	3.7	
	Cancer Fatalities	1.5E-3	
	Cancer Incidence	5.2E-3	
	Genetic Effects	2.2E-4	
	Exposure Index		
	Construction Fatalities		5.1E-2
	Construction Injuries		2.2E1
	Operation Fatalities		6.1E-2
	Operation Injuries		5.2E1

Table 3.1–209. Risks Associated with Routine Treatment of LLW at Pinellas Under Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1167	Dose (person-rem)	4.2E-8	
	Cancer Fatalities	2.1E-11	
	Cancer Incidence	7.2E-11	
	Genetic Effects	4.2E-12	
Noninvolved Worker MEI	Dose (rem)	8.7E-11	
	Cancer Fatalities	4.4E-14	
	Cancer Incidence	1.5E-13	
	Genetic Effects	9.0E-15	
	Hazard Index		
Offsite Population 2532174	Dose (person-rem)	3.5E-5	
	Cancer Fatalities	1.8E-8	
	Cancer Incidence	6.0E-8	
	Genetic Effects	3.5E-9	
Offsite MEI	Dose (rem)	7.7E-10	
	Cancer Fatalities	3.8E-13	
	Cancer Incidence	1.3E-12	
	Genetic Effects	7.7E-14	
	Hazard Index		
WM Workers 21	Dose (FTE-rem)	1.4E-1	
	Cancer Fatalities	5.6E-5	
	Cancer Incidence	2.0E-4	
	Genetic Effects	8.4E-6	
	Exposure Index		
	Construction Fatalities		2.5E-3
	Construction Injuries		1.1
	Operation Fatalities		2.5E-3
	Operation Injuries		2.1

Table 3.1–210. Risks Associated with Routine Treatment of LLW at Ports Under Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3226	Dose (person-rem)	3.7E-7	
	Cancer Fatalities	1.8E-10	
	Cancer Incidence	6.3E-10	
	Genetic Effects	3.7E-11	
Noninvolved Worker MEI	Dose (rem)	2.1E-10	
	Cancer Fatalities	1.0E-13	
	Cancer Incidence	3.5E-13	
	Genetic Effects	2.1E-14	
	Hazard Index		
Offsite Population 639602	Dose (person-rem)	3.5E-6	
	Cancer Fatalities	1.8E-9	
	Cancer Incidence	6.0E-9	
	Genetic Effects	3.5E-10	
Offsite MEI	Dose (rem)	4.4E-10	
	Cancer Fatalities	2.2E-13	
	Cancer Incidence	7.5E-13	
	Genetic Effects	4.4E-14	
	Hazard Index		
WM Workers 1075	Dose (FTE-rem)	1.1E1	
	Cancer Fatalities	4.6E-3	
	Cancer Incidence	1.6E-2	
	Genetic Effects	6.8E-4	
	Exposure Index		
	Construction Fatalities		9.8E-2
	Construction Injuries		4.3E1
	Operation Fatalities		1.3E-1
	Operation Injuries		1.1E2

Table 3.1–211. Risks Associated with Routine Treatment of LLW at RFETS Under Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 6993	Dose (person-rem)	4.1E-5	
	Cancer Fatalities	2.0E-8	
	Cancer Incidence	6.9E-8	
	Genetic Effects	4.1E-9	
Noninvolved Worker MEI	Dose (rem)	2.5E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	4.2E-11	
	Genetic Effects	2.5E-12	
	Hazard Index		
Offsite Population 2171877	Dose (person-rem)	8.0E-4	
	Cancer Fatalities	4.0E-7	
	Cancer Incidence	1.4E-6	
	Genetic Effects	8.0E-8	
Offsite MEI	Dose (rem)	1.1E-8	
	Cancer Fatalities	5.4E-12	
	Cancer Incidence	1.8E-11	
	Genetic Effects	1.1E-12	
	Hazard Index		
WM Workers 344	Dose (FTE-rem)	2.9	
	Cancer Fatalities	1.2E-3	
	Cancer Incidence	4.0E-3	
	Genetic Effects	1.7E-4	
	Exposure Index		
	Construction Fatalities		3.8E-2
	Construction Injuries		1.7E1
	Operation Fatalities		4.2E-2
	Operation Injuries		3.5E1

Table 3.1–212. Risks Associated with Routine Treatment of LLW at SNL–NM Under Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 10576	Dose (person-rem)	6.1E-5	
	Cancer Fatalities	3.0E-8	
	Cancer Incidence	1.0E-7	
	Genetic Effects	6.1E-9	
Noninvolved Worker MEI	Dose (rem)	2.6E-8	
	Cancer Fatalities	1.3E-11	
	Cancer Incidence	4.3E-11	
	Genetic Effects	2.6E-12	
	Hazard Index		
Offsite Population 610714	Dose (person-rem)	3.6E-3	
	Cancer Fatalities	1.8E-6	
	Cancer Incidence	6.2E-6	
	Genetic Effects	3.6E-7	
Offsite MEI	Dose (rem)	1.4E-7	
	Cancer Fatalities	7.2E-11	
	Cancer Incidence	2.4E-10	
	Genetic Effects	1.4E-11	
	Hazard Index		
WM Workers 210	Dose (FTE-rem)	1.0	
	Cancer Fatalities	4.1E-4	
	Cancer Incidence	1.5E-3	
	Genetic Effects	6.2E-5	
	Exposure Index		
	Construction Fatalities		2.5E-2
	Construction Injuries		1.1E1
	Operation Fatalities		2.5E-2
	Operation Injuries		2.2E1

Table 3.1–213. Risks Associated with Routine Treatment of LLW at SRS Under Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 15996	Dose (person-rem)	2.6E-3	
	Cancer Fatalities	1.3E-6	
	Cancer Incidence	4.4E-6	
	Genetic Effects	2.6E-7	
Noninvolved Worker MEI	Dose (rem)	2.3E-6	
	Cancer Fatalities	1.1E-9	
	Cancer Incidence	3.9E-9	
	Genetic Effects	2.3E-10	
	Hazard Index		
Offsite Population 620618	Dose (person-rem)	3.7E-2	
	Cancer Fatalities	1.9E-5	
	Cancer Incidence	6.3E-5	
	Genetic Effects	3.7E-6	
Offsite MEI	Dose (rem)	3.5E-7	
	Cancer Fatalities	1.8E-10	
	Cancer Incidence	5.9E-10	
	Genetic Effects	3.5E-11	
	Hazard Index		
WM Workers 2008	Dose (FTE-rem)	5.7E2	
	Cancer Fatalities	2.3E-1	
	Cancer Incidence	8.0E-1	
	Genetic Effects	3.4E-2	
	Exposure Index		
	Construction Fatalities		2.0E-1
	Construction Injuries		8.7E1
	Operation Fatalities		2.4E-1
	Operation Injuries		2.1E2

Table 3.1-214. Risks Associated with Routine Treatment of LLW at Y-12 Under Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 7699	Dose (person-rem)	2.4E-5	
	Cancer Fatalities	1.2E-8	
	Cancer Incidence	4.0E-8	
	Genetic Effects	2.4E-9	
Noninvolved Worker MEI	Dose (rem)	7.8E-9	
	Cancer Fatalities	3.9E-12	
	Cancer Incidence	1.3E-11	
	Genetic Effects	7.8E-13	
	Hazard Index		
Offsite Population 895379	Dose (person-rem)	1.7E-4	
	Cancer Fatalities	8.4E-8	
	Cancer Incidence	2.9E-7	
	Genetic Effects	1.7E-8	
Offsite MEI	Dose (rem)	6.2E-9	
	Cancer Fatalities	3.1E-12	
	Cancer Incidence	1.1E-11	
	Genetic Effects	6.2E-13	
	Hazard Index		
WM Workers 1222	Dose (FTE-rem)	1.3E1	
	Cancer Fatalities	5.3E-3	
	Cancer Incidence	1.9E-2	
	Genetic Effects	7.9E-4	
	Exposure Index		
	Construction Fatalities		1.1E-1
	Construction Injuries		4.9E1
	Operation Fatalities		1.5E-1
	Operation Injuries		1.3E2

Table 3.1-215. Risks Associated with Routine Treatment of LLW at ANL-E Under Centralized Alternatives 3 and 4 (Only Disposal Differs Between These Alternatives)

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 5571	Dose (person-rem)	2.0E-5	
	Cancer Fatalities	9.8E-9	
	Cancer Incidence	3.3E-8	
	Genetic Effects	2.0E-9	
Noninvolved Worker MEI	Dose (rem)	2.0E-8	
	Cancer Fatalities	1.0E-11	
	Cancer Incidence	3.4E-11	
	Genetic Effects	2.0E-12	
	Hazard Index		
Offsite Population 7939785	Dose (person-rem)	5.0E-3	
	Cancer Fatalities	2.5E-6	
	Cancer Incidence	8.5E-6	
	Genetic Effects	5.0E-7	
Offsite MEI	Dose (rem)	2.8E-8	
	Cancer Fatalities	1.4E-11	
	Cancer Incidence	4.7E-11	
	Genetic Effects	2.8E-12	
	Hazard Index		
WM Workers 224	Dose (FTE-rem)	7.9E1	
	Cancer Fatalities	3.2E-2	
	Cancer Incidence	1.1E-1	
	Genetic Effects	4.8E-3	
	Exposure Index		
	Construction Fatalities		2.4E-2
	Construction Injuries		1.1E1
	Operation Fatalities		2.7E-2
	Operation Injuries		2.3E1

Table 3.1–216. Risks Associated with Routine Treatment of LLW at Hanford Under Centralized Alternatives 3 and 4 (Only Disposal Differs Between These Alternatives)

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8674	Dose (person-rem)	1.2	
	Cancer Fatalities	6.1E-4	
	Cancer Incidence	2.1E-3	
	Genetic Effects	1.2E-4	
Noninvolved Worker MEI	Dose (rem)	2.1E-3	
	Cancer Fatalities	1.1E-6	
	Cancer Incidence	3.6E-6	
	Genetic Effects	2.1E-7	
	Hazard Index		
Offsite Population 377645	Dose (person-rem)	1.0E2	
	Cancer Fatalities	5.0E-2	
	Cancer Incidence	1.7E-1	
	Genetic Effects	1.0E-2	
Offsite MEI	Dose (rem)	2.1E-3	
	Cancer Fatalities	1.0E-6	
	Cancer Incidence	3.5E-6	
	Genetic Effects	2.1E-7	
	Hazard Index		
WM Workers 1634	Dose (FTE-rem)	5.2E2	
	Cancer Fatalities	2.1E-1	
	Cancer Incidence	7.2E-1	
	Genetic Effects	3.1E-2	
	Exposure Index		
	Construction Fatalities		1.4E-1
	Construction Injuries		5.9E1
	Operation Fatalities		2.0E-1
	Operation Injuries		1.7E2

Table 3.1-217. Risks Associated with Routine Treatment of LLW at INEL Under Centralized Alternatives 3 and 4 (Only Disposal Differs Between These Alternatives)

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8451	Dose (person-rem)	8.1E-4	
	Cancer Fatalities	4.0E-7	
	Cancer Incidence	1.4E-6	
	Genetic Effects	8.1E-8	
Noninvolved Worker MEI	Dose (rem)	6.7E-7	
	Cancer Fatalities	3.4E-10	
	Cancer Incidence	1.1E-9	
	Genetic Effects	6.7E-11	
	Hazard Index		
Offsite Population 153061	Dose (person-rem)	2.7E-3	
	Cancer Fatalities	1.4E-6	
	Cancer Incidence	4.6E-6	
	Genetic Effects	2.7E-7	
Offsite MEI	Dose (rem)	3.3E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.7E-10	
	Genetic Effects	3.3E-11	
	Hazard Index		
WM Workers 1809	Dose (FTE-rem)	4.2E2	
	Cancer Fatalities	1.7E-1	
	Cancer Incidence	5.8E-1	
	Genetic Effects	2.5E-2	
	Exposure Index		
	Construction Fatalities		1.5E-1
	Construction Injuries		6.7E1
	Operation Fatalities		2.2E-1
	Operation Injuries		1.9E2

Table 3.1–218. Risks Associated with Routine Treatment of LLW at KAPL–K Under Centralized Alternatives 3 and 4 (Only Disposal Differs Between These Alternatives)

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3896	Dose (person-rem)	1.2E-2	
	Cancer Fatalities	6.2E-6	
	Cancer Incidence	2.1E-5	
	Genetic Effects	1.2E-6	
Noninvolved Worker MEI	Dose (rem)	5.8E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.8E-9	
	Genetic Effects	5.8E-10	
	Hazard Index		
Offsite Population 1290172	Dose (person-rem)	1.1	
	Cancer Fatalities	5.3E-4	
	Cancer Incidence	1.8E-3	
	Genetic Effects	1.1E-4	
Offsite MEI	Dose (rem)	2.4E-5	
	Cancer Fatalities	1.2E-8	
	Cancer Incidence	4.0E-8	
	Genetic Effects	2.4E-9	
	Hazard Index		
WM Workers 650	Dose (FTE-rem)	1.4E1	
	Cancer Fatalities	5.8E-3	
	Cancer Incidence	2.0E-2	
	Genetic Effects	8.7E-4	
	Exposure Index		
	Construction Fatalities		6.2E-2
	Construction Injuries		2.7E1
	Operation Fatalities		7.9E-2
	Operation Injuries		6.7E1

Table 3.1-219. Risks Associated with Routine Treatment of LLW at KCP Under Centralized Alternatives 3 and 4 (Only Disposal Differs Between These Alternatives)

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 4410	Dose (person-rem)	2.4E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	4.1E-11	
	Genetic Effects	2.4E-12	
Noninvolved Worker MEI	Dose (rem)	1.7E-11	
	Cancer Fatalities	9.0E-15	
	Cancer Incidence	2.9E-14	
	Genetic Effects	0.00	
	Hazard Index		
Offsite Population 1729833	Dose (person-rem)	2.1E-6	
	Cancer Fatalities	1.1E-9	
	Cancer Incidence	3.6E-9	
	Genetic Effects	2.1E-10	
Offsite MEI	Dose (rem)	9.7E-11	
	Cancer Fatalities	4.8E-14	
	Cancer Incidence	1.6E-13	
	Genetic Effects	1.0E-14	
	Hazard Index		
WM Workers 11	Dose (FTE-rem)	7.3E-2	
	Cancer Fatalities	2.9E-5	
	Cancer Incidence	1.0E-4	
	Genetic Effects	4.4E-6	
	Exposure Index		
	Construction Fatalities		1.3E-3
	Construction Injuries		5.6E-1
	Operation Fatalities		1.3E-3
	Operation Injuries		1.1

Table 3.1-220. Risks Associated with Routine Treatment of LLW at K-25 Under Centralized Alternatives 3 and 4 (Only Disposal Differs Between These Alternatives)

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3800	Dose (person-rem)	1.0E-6	
	Cancer Fatalities	5.0E-10	
	Cancer Incidence	1.7E-9	
	Genetic Effects	1.0E-10	
Noninvolved Worker MEI	Dose (rem)	9.2E-10	
	Cancer Fatalities	4.6E-13	
	Cancer Incidence	1.6E-12	
	Genetic Effects	9.2E-14	
	Hazard Index		
Offsite Population 871406	Dose (person-rem)	1.7E-5	
	Cancer Fatalities	8.6E-9	
	Cancer Incidence	2.9E-8	
	Genetic Effects	1.7E-9	
Offsite MEI	Dose (rem)	3.8E-10	
	Cancer Fatalities	1.9E-13	
	Cancer Incidence	6.4E-13	
	Genetic Effects	3.8E-14	
	Hazard Index		
WM Workers 582	Dose (FTE-rem)	8.8	
	Cancer Fatalities	3.5E-3	
	Cancer Incidence	1.2E-2	
	Genetic Effects	5.3E-4	
	Exposure Index		
	Construction Fatalities		5.0E-2
	Construction Injuries		2.2E1
	Operation Fatalities		7.0E-2
	Operation Injuries		6.0E1

Table 3.1-221. Risks Associated with Routine Treatment of LLW at LANL Under Centralized Alternatives 3 and 4 (Only Disposal Differs Between These Alternatives)

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 11552	Dose (person-rem)	1.4	
	Cancer Fatalities	7.0E-4	
	Cancer Incidence	2.4E-3	
	Genetic Effects	1.4E-4	
Noninvolved Worker MEI	Dose (rem)	1.1E-3	
	Cancer Fatalities	5.3E-7	
	Cancer Incidence	1.8E-6	
	Genetic Effects	1.1E-7	
	Hazard Index		
Offsite Population 159152	Dose (person-rem)	1.6E1	
	Cancer Fatalities	7.8E-3	
	Cancer Incidence	2.7E-2	
	Genetic Effects	1.6E-3	
Offsite MEI	Dose (rem)	1.6E-3	
	Cancer Fatalities	8.2E-7	
	Cancer Incidence	2.8E-6	
	Genetic Effects	1.6E-7	
	Hazard Index		
WM Workers 2731	Dose (FTE-rem)	8.6E2	
	Cancer Fatalities	3.4E-1	
	Cancer Incidence	1.2	
	Genetic Effects	5.1E-2	
	Exposure Index		
	Construction Fatalities		2.6E-1
	Construction Injuries		1.1E2
	Operation Fatalities		3.3E-1
	Operation Injuries		2.8E2

Table 3.1-222. Risks Associated with Routine Treatment of LLW at LBL Under Centralized Alternatives 3 and 4 (Only Disposal Differs Between These Alternatives)

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3940	Dose (person-rem)	5.4E-2	
	Cancer Fatalities	2.7E-5	
	Cancer Incidence	9.1E-5	
	Genetic Effects	5.4E-6	
Noninvolved Worker MEI	Dose (rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.1E-8	
	Genetic Effects	4.2E-9	
	Hazard Index		
Offsite Population 1586829	Dose (person-rem)	3.6E1	
	Cancer Fatalities	1.8E-2	
	Cancer Incidence	6.2E-2	
	Genetic Effects	3.6E-3	
Offsite MEI	Dose (rem)	5.7E-4	
	Cancer Fatalities	2.9E-7	
	Cancer Incidence	9.7E-7	
	Genetic Effects	5.7E-8	
	Hazard Index		
WM Workers 174	Dose (FTE-rem)	1.9E1	
	Cancer Fatalities	7.6E-3	
	Cancer Incidence	2.7E-2	
	Genetic Effects	1.1E-3	
	Exposure Index		
	Construction Fatalities		2.2E-2
	Construction Injuries		9.6
	Operation Fatalities		2.1E-2
	Operation Injuries		1.8E1

Table 3.1–223. Risks Associated with Routine Treatment of LLW at LLNL Under Centralized Alternatives 3 and 4 (Only Disposal Differs Between These Alternatives)

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 9504	Dose (person-rem)	1.2E-1	
	Cancer Fatalities	6.0E-5	
	Cancer Incidence	2.0E-4	
	Genetic Effects	1.2E-5	
Noninvolved Worker MEI	Dose (rem)	4.1E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.0E-8	
	Genetic Effects	4.1E-9	
	Hazard Index		
Offsite Population 6324234	Dose (person-rem)	8.7	
	Cancer Fatalities	4.4E-3	
	Cancer Incidence	1.5E-2	
	Genetic Effects	8.7E-4	
Offsite MEI	Dose (rem)	1.4E-4	
	Cancer Fatalities	7.1E-8	
	Cancer Incidence	2.4E-7	
	Genetic Effects	1.4E-8	
	Hazard Index		
WM Workers 227	Dose (FTE-rem)	6.3	
	Cancer Fatalities	2.5E-3	
	Cancer Incidence	8.9E-3	
	Genetic Effects	3.8E-4	
	Exposure Index		
	Construction Fatalities		2.9E-2
	Construction Injuries		1.3E1
	Operation Fatalities		2.8E-2
	Operation Injuries		2.3E1

Table 3.1-224. Risks Associated with Routine Treatment of LLW at Mound Under Centralized Alternatives 3 and 4 (Only Disposal Differs Between These Alternatives)

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1688	Dose (person-rem)	1.6E-6	
	Cancer Fatalities	8.0E-10	
	Cancer Incidence	2.7E-9	
	Genetic Effects	1.6E-10	
Noninvolved Worker MEI	Dose (rem)	2.5E-9	
	Cancer Fatalities	1.3E-12	
	Cancer Incidence	4.3E-12	
	Genetic Effects	2.5E-13	
	Hazard Index		
Offsite Population 3032983	Dose (person-rem)	2.1E-4	
	Cancer Fatalities	1.0E-7	
	Cancer Incidence	3.5E-7	
	Genetic Effects	2.1E-8	
Offsite MEI	Dose (rem)	1.2E-8	
	Cancer Fatalities	5.9E-12	
	Cancer Incidence	2.0E-11	
	Genetic Effects	1.2E-12	
	Hazard Index		
WM Workers 435	Dose (FTE-rem)	3.3	
	Cancer Fatalities	1.3E-3	
	Cancer Incidence	4.7E-3	
	Genetic Effects	2.0E-4	
	Exposure Index		
	Construction Fatalities		5.1E-2
	Construction Injuries		2.2E1
	Operation Fatalities		5.3E-2
	Operation Injuries		4.5E1

Table 3.1-225. Risks Associated with Routine Treatment of LLW at NTS Under Centralized Alternatives 3 and 4 (Only Disposal Differs Between These Alternatives)

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3756	Dose (person-rem)	2.0E-1	
	Cancer Fatalities	1.0E-4	
	Cancer Incidence	3.4E-4	
	Genetic Effects	2.0E-5	
Noninvolved Worker MEI	Dose (rem)	9.3E-4	
	Cancer Fatalities	4.7E-7	
	Cancer Incidence	1.6E-6	
	Genetic Effects	9.3E-8	
	Hazard Index		
Offsite Population 14266	Dose (person-rem)	8.2E-2	
	Cancer Fatalities	4.1E-5	
	Cancer Incidence	1.4E-4	
	Genetic Effects	8.2E-6	
Offsite MEI	Dose (rem)	2.1E-5	
	Cancer Fatalities	1.0E-8	
	Cancer Incidence	3.5E-8	
	Genetic Effects	2.1E-9	
	Hazard Index		
WM Workers 0	Dose (FTE-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Exposure Index		
	Construction Fatalities		0.00
	Construction Injuries		0.00
	Operation Fatalities		0.00
	Operation Injuries		0.00

Table 3.1-226. Risks Associated with Routine Treatment of LLW at ORNL Under Centralized Alternatives 3 and 4 (Only Disposal Differs Between These Alternatives)

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3809	Dose (person-rem)	1.0E-3	
	Cancer Fatalities	5.0E-7	
	Cancer Incidence	1.7E-6	
	Genetic Effects	1.0E-7	
Noninvolved Worker MEI	Dose (rem)	9.1E-7	
	Cancer Fatalities	4.6E-10	
	Cancer Incidence	1.6E-9	
	Genetic Effects	9.1E-11	
	Hazard Index		
Offsite Population 881652	Dose (person-rem)	3.7E-2	
	Cancer Fatalities	1.9E-5	
	Cancer Incidence	6.3E-5	
	Genetic Effects	3.7E-6	
Offsite MEI	Dose (rem)	1.1E-6	
	Cancer Fatalities	5.7E-10	
	Cancer Incidence	1.9E-9	
	Genetic Effects	1.1E-10	
	Hazard Index		
WM Workers 4855	Dose (FTE-rem)	3.2E2	
	Cancer Fatalities	1.3E-1	
	Cancer Incidence	4.5E-1	
	Genetic Effects	1.9E-2	
	Exposure Index		
	Construction Fatalities		4.7E-1
	Construction Injuries		2.0E2
	Operation Fatalities		5.9E-1
	Operation Injuries		5.0E2

Table 3.1-227. Risks Associated with Routine Treatment of LLW at Pantex Under Centralized Alternatives 3 and 4 (Only Disposal Differs Between These Alternatives)

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 2825	Dose (person-rem)	3.3E-5	
	Cancer Fatalities	1.6E-8	
	Cancer Incidence	5.6E-8	
	Genetic Effects	3.3E-9	
Noninvolved Worker MEI	Dose (rem)	6.3E-8	
	Cancer Fatalities	3.1E-11	
	Cancer Incidence	1.1E-10	
	Genetic Effects	6.3E-12	
	Hazard Index		
Offsite Population 265185	Dose (person-rem)	2.2E-4	
	Cancer Fatalities	1.1E-7	
	Cancer Incidence	3.7E-7	
	Genetic Effects	2.2E-8	
Offsite MEI	Dose (rem)	1.8E-8	
	Cancer Fatalities	9.2E-12	
	Cancer Incidence	3.1E-11	
	Genetic Effects	1.8E-12	
	Hazard Index		
WM Workers, 675	Dose (FTE-rem)	6.4	
	Cancer Fatalities	2.6E-3	
	Cancer Incidence	9.0E-3	
	Genetic Effects	3.9E-4	
	Exposure Index		
	Construction Fatalities		6.1E-2
	Construction Injuries		2.7E1
	Operation Fatalities		8.2E-2
	Operation Injuries		6.9E1

Table 3.1-228. Risks Associated with Routine Treatment of LLW at PGDP Under Centralized Alternatives 3 and 4 (Only Disposal Differs Between These Alternatives)

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1952	Dose (person-rem)	3.3E-6	
	Cancer Fatalities	1.7E-9	
	Cancer Incidence	5.7E-9	
	Genetic Effects	3.3E-10	
Noninvolved Worker MEI	Dose (rem)	4.1E-9	
	Cancer Fatalities	2.1E-12	
	Cancer Incidence	7.0E-12	
	Genetic Effects	4.1E-13	
	Hazard Index		
Offsite Population 500502	Dose (person-rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.2E-8	
	Genetic Effects	4.2E-9	
Offsite MEI	Dose (rem)	4.7E-9	
	Cancer Fatalities	2.4E-12	
	Cancer Incidence	8.0E-12	
	Genetic Effects	4.7E-13	
	Hazard Index		
WM Workers 497	Dose (FTE-rem)	3.7	
	Cancer Fatalities	1.5E-3	
	Cancer Incidence	5.2E-3	
	Genetic Effects	2.2E-4	
	Exposure Index		
	Construction Fatalities		4.9E-2
	Construction Injuries		2.2E1
	Operation Fatalities		6.0E-2
	Operation Injuries		5.1E1

Table 3.1-229. Risks Associated with Routine Treatment of LLW at Pinellas Under Centralized Alternatives 3 and 4 (Only Disposal Differs Between These Alternatives)

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1167	Dose (person-rem)	4.2E-8	
	Cancer Fatalities	2.1E-11	
	Cancer Incidence	7.2E-11	
	Genetic Effects	4.2E-12	
Noninvolved Worker MEI	Dose (rem)	8.7E-11	
	Cancer Fatalities	4.4E-14	
	Cancer Incidence	1.5E-13	
	Genetic Effects	9.0E-15	
	Hazard Index		
Offsite Population 2532174	Dose (person-rem)	3.5E-5	
	Cancer Fatalities	1.8E-8	
	Cancer Incidence	6.0E-8	
	Genetic Effects	3.5E-9	
Offsite MEI	Dose (rem)	7.7E-10	
	Cancer Fatalities	3.8E-13	
	Cancer Incidence	1.3E-12	
	Genetic Effects	7.7E-14	
	Hazard Index		
WM Workers 21	Dose (FTE-rem)	1.4E-1	
	Cancer Fatalities	5.6E-5	
	Cancer Incidence	2.0E-4	
	Genetic Effects	8.4E-6	
	Exposure Index		
	Construction Fatalities		2.5E-3
	Construction Injuries		1.1
	Operation Fatalities		2.5E-3
	Operation Injuries		2.1

Table 3.1–230. Risks Associated with Routine Treatment of LLW at Ports Under Centralized Alternatives 3 and 4 (Only Disposal Differs Between These Alternatives)

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3226	Dose (person-rem)	1.2	
	Cancer Fatalities	5.9E-4	
	Cancer Incidence	2.0E-3	
	Genetic Effects	1.2E-4	
Noninvolved Worker MEI	Dose (rem)	6.8E-4	
	Cancer Fatalities	3.4E-7	
	Cancer Incidence	1.2E-6	
	Genetic Effects	6.8E-8	
	Hazard Index		
Offsite Population 639602	Dose (person-rem)	3.8E1	
	Cancer Fatalities	1.9E-2	
	Cancer Incidence	6.4E-2	
	Genetic Effects	3.8E-3	
Offsite MEI	Dose (rem)	4.6E-3	
	Cancer Fatalities	2.3E-6	
	Cancer Incidence	7.9E-6	
	Genetic Effects	4.6E-7	
	Hazard Index		
WM Workers 3481	Dose (FTE-rem)	9.2E1	
	Cancer Fatalities	3.7E-2	
	Cancer Incidence	1.3E-1	
	Genetic Effects	5.5E-3	
	Exposure Index		
	Construction Fatalities		3.0E-1
	Construction Injuries		1.3E2
	Operation Fatalities		4.2E-1
	Operation Injuries		3.6E2

Table 3.1-231. Risks Associated with Routine Treatment of LLW at RFETS Under Centralized Alternatives 3 and 4 (Only Disposal Differs Between These Alternatives)

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 6993	Dose (person-rem)	1.9E-2	
	Cancer Fatalities	9.5E-6	
	Cancer Incidence	3.2E-5	
	Genetic Effects	1.9E-6	
Noninvolved Worker MEI	Dose (rem)	1.1E-5	
	Cancer Fatalities	5.7E-9	
	Cancer Incidence	1.9E-8	
	Genetic Effects	1.1E-9	
	Hazard Index		
Offsite Population 2171877	Dose (person-rem)	3.7E-1	
	Cancer Fatalities	1.9E-4	
	Cancer Incidence	6.3E-4	
	Genetic Effects	3.7E-5	
Offsite MEI	Dose (rem)	5.1E-6	
	Cancer Fatalities	2.5E-9	
	Cancer Incidence	8.6E-9	
	Genetic Effects	5.1E-10	
	Hazard Index		
WM Workers 800	Dose (FTE-rem)	2.9	
	Cancer Fatalities	1.1E-3	
	Cancer Incidence	4.0E-3	
	Genetic Effects	1.7E-4	
	Exposure Index		
	Construction Fatalities		1.2E-1
	Construction Injuries		5.2E1
	Operation Fatalities		9.7E-2
	Operation Injuries		8.2E1

Table 3.1–232. Risks Associated with Routine Treatment of LLW at SNL–NM Under Centralized Alternatives 3 and 4 (Only Disposal Differs Between These Alternatives)

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 10576	Dose (person-rem)	6.1E-5	
	Cancer Fatalities	3.0E-8	
	Cancer Incidence	1.0E-7	
	Genetic Effects	6.1E-9	
Noninvolved Worker MEI	Dose (rem)	2.6E-8	
	Cancer Fatalities	1.3E-11	
	Cancer Incidence	4.3E-11	
	Genetic Effects	2.6E-12	
	Hazard Index		
Offsite Population 610714	Dose (person-rem)	3.6E-3	
	Cancer Fatalities	1.8E-6	
	Cancer Incidence	6.2E-6	
	Genetic Effects	3.6E-7	
Offsite MEI	Dose (rem)	1.4E-7	
	Cancer Fatalities	7.2E-11	
	Cancer Incidence	2.4E-10	
	Genetic Effects	1.4E-11	
	Hazard Index		
WM Workers 232	Dose (FTE-rem)	5.4E1	
	Cancer Fatalities	2.2E-2	
	Cancer Incidence	7.6E-2	
	Genetic Effects	3.3E-3	
	Exposure Index		
	Construction Fatalities		2.7E-2
	Construction Injuries		1.2E1
	Operation Fatalities		2.8E-2
	Operation Injuries		2.4E1

Table 3.1-233. Risks Associated with Routine Treatment of LLW at SRS Under Centralized Alternatives 3 and 4 (Only Disposal Differs Between These Alternatives)

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 15996	Dose (person-rem)	6.7E-2	
	Cancer Fatalities	3.3E-5	
	Cancer Incidence	1.1E-4	
	Genetic Effects	6.7E-6	
Noninvolved Worker MEI	Dose (rem)	5.9E-5	
	Cancer Fatalities	3.0E-8	
	Cancer Incidence	1.0E-7	
	Genetic Effects	5.9E-9	
	Hazard Index		
Offsite Population 620618	Dose (person-rem)	1.2	
	Cancer Fatalities	6.1E-4	
	Cancer Incidence	2.1E-3	
	Genetic Effects	1.2E-4	
Offsite MEI	Dose (rem)	1.2E-5	
	Cancer Fatalities	5.7E-9	
	Cancer Incidence	2.0E-8	
	Genetic Effects	1.2E-9	
	Hazard Index		
WM Workers 2598	Dose (FTE-rem)	6.9E2	
	Cancer Fatalities	2.8E-1	
	Cancer Incidence	9.6E-1	
	Genetic Effects	4.1E-2	
	Exposure Index		
	Construction Fatalities		2.4E-1
	Construction Injuries		1.1E2
	Operation Fatalities		3.1E-1
	Operation Injuries		2.7E2

Table 3.1-234. Risks Associated with Routine Treatment of LLW at Y-12 Under Centralized Alternatives 3 and 4 (Only Disposal Differs Between These Alternatives)

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 7699	Dose (person-rem)	5.7E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.7E-9	
	Genetic Effects	5.7E-10	
Noninvolved Worker MEI	Dose (rem)	1.9E-9	
	Cancer Fatalities	9.4E-13	
	Cancer Incidence	3.2E-12	
	Genetic Effects	1.9E-13	
	Hazard Index		
Offsite Population 895379	Dose (person-rem)	4.1E-5	
	Cancer Fatalities	2.0E-8	
	Cancer Incidence	6.9E-8	
	Genetic Effects	4.1E-9	
Offsite MEI	Dose (rem)	1.5E-9	
	Cancer Fatalities	7.5E-13	
	Cancer Incidence	2.6E-12	
	Genetic Effects	1.5E-13	
	Hazard Index		
WM Workers 853	Dose (FTE-rem)	1.3E1	
	Cancer Fatalities	5.3E-3	
	Cancer Incidence	1.8E-2	
	Genetic Effects	7.9E-4	
	Exposure Index		
	Construction Fatalities		7.1E-2
	Construction Injuries		3.1E1
	Operation Fatalities		1.0E-1
	Operation Injuries		8.8E1

Table 3.1-235. Risks Associated with Routine Treatment of LLW at ANL-E Under Centralized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 5571	Dose (person-rem)	2.0E-5	
	Cancer Fatalities	9.8E-9	
	Cancer Incidence	3.3E-8	
	Genetic Effects	2.0E-9	
Noninvolved Worker MEI	Dose (rem)	2.0E-8	
	Cancer Fatalities	1.0E-11	
	Cancer Incidence	3.4E-11	
	Genetic Effects	2.0E-12	
	Hazard Index		
Offsite Population 7939785	Dose (person-rem)	5.0E-3	
	Cancer Fatalities	2.5E-6	
	Cancer Incidence	8.5E-6	
	Genetic Effects	5.0E-7	
Offsite MEI	Dose (rem)	2.8E-8	
	Cancer Fatalities	1.4E-11	
	Cancer Incidence	4.7E-11	
	Genetic Effects	2.8E-12	
	Hazard Index		
WM Workers 224	Dose (FTE-rem)	7.9E1	
	Cancer Fatalities	3.2E-2	
	Cancer Incidence	1.1E-1	
	Genetic Effects	4.8E-3	
	Exposure Index		
	Construction Fatalities		2.4E-2
	Construction Injuries		1.1E1
	Operation Fatalities		2.7E-2
	Operation Injuries		2.3E1

Table 3.1–236. Risks Associated with Routine Treatment of LLW at Hanford Under Centralized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8674	Dose (person-rem)	1.9	
	Cancer Fatalities	9.7E-4	
	Cancer Incidence	3.3E-3	
	Genetic Effects	1.9E-4	
Noninvolved Worker MEI	Dose (rem)	3.4E-3	
	Cancer Fatalities	1.7E-6	
	Cancer Incidence	5.8E-6	
	Genetic Effects	3.4E-7	
	Hazard Index		
Offsite Population 377645	Dose (person-rem)	1.5E2	
	Cancer Fatalities	7.5E-2	
	Cancer Incidence	2.5E-1	
	Genetic Effects	1.5E-2	
Offsite MEI	Dose (rem)	3.1E-3	
	Cancer Fatalities	1.5E-6	
	Cancer Incidence	5.2E-6	
	Genetic Effects	3.1E-7	
	Hazard Index		
WM Workers 9856	Dose (FTE-rem)	3.8E3	
	Cancer Fatalities	1.5	
	Cancer Incidence	5.3	
	Genetic Effects	2.3E-1	
	Exposure Index		
	Construction Fatalities		9.3E-1
	Construction Injuries		4.1E2
	Operation Fatalities		1.2
	Operation Injuries		1.0E3

Table 3.1–237. Risks Associated with Routine Treatment of LLW at INEL Under Centralized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 8451	Dose (person-rem)	4.8E-4	
	Cancer Fatalities	2.4E-7	
	Cancer Incidence	8.1E-7	
	Genetic Effects	4.8E-8	
Noninvolved Worker MEI	Dose (rem)	4.0E-7	
	Cancer Fatalities	2.0E-10	
	Cancer Incidence	6.8E-10	
	Genetic Effects	4.0E-11	
	Hazard Index		
Offsite Population 153061	Dose (person-rem)	1.6E-3	
	Cancer Fatalities	8.0E-7	
	Cancer Incidence	2.7E-6	
	Genetic Effects	1.6E-7	
Offsite MEI	Dose (rem)	2.0E-7	
	Cancer Fatalities	9.9E-11	
	Cancer Incidence	3.4E-10	
	Genetic Effects	2.0E-11	
	Hazard Index		
WM Workers 677	Dose (FTE-rem)	4.1E2	
	Cancer Fatalities	1.7E-1	
	Cancer Incidence	5.8E-1	
	Genetic Effects	2.5E-2	
	Exposure Index		
	Construction Fatalities		7.2E-2
	Construction Injuries		3.1E1
	Operation Fatalities		8.2E-2
	Operation Injuries		7.0E1

Table 3.1–238. Risks Associated with Routine Treatment of LLW at KAPL–K Under Centralized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3896	Dose (person-rem)	1.2E-2	
	Cancer Fatalities	6.2E-6	
	Cancer Incidence	2.1E-5	
	Genetic Effects	1.2E-6	
Noninvolved Worker MEI	Dose (rem)	5.8E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.8E-9	
	Genetic Effects	5.8E-10	
	Hazard Index		
Offsite Population 1290172	Dose (person-rem)	1.1	
	Cancer Fatalities	5.3E-4	
	Cancer Incidence	1.8E-3	
	Genetic Effects	1.1E-4	
Offsite MEI	Dose (rem)	2.4E-5	
	Cancer Fatalities	1.2E-8	
	Cancer Incidence	4.0E-8	
	Genetic Effects	2.4E-9	
	Hazard Index		
WM Workers 650	Dose (FTE-rem)	1.4E1	
	Cancer Fatalities	5.8E-3	
	Cancer Incidence	2.0E-2	
	Genetic Effects	8.7E-4	
	Exposure Index		
	Construction Fatalities		6.2E-2
	Construction Injuries		2.7E1
	Operation Fatalities		7.9E-2
	Operation Injuries		6.7E1

Table 3.1–239. Risks Associated with Routine Treatment of LLW at KCP Under Centralized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 4410	Dose (person-rem)	2.4E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	4.1E-11	
	Genetic Effects	2.4E-12	
Noninvolved Worker MEI	Dose (rem)	1.7E-11	
	Cancer Fatalities	9.0E-15	
	Cancer Incidence	2.9E-14	
	Genetic Effects	0.00	
	Hazard Index		
Offsite Population 1729833	Dose (person-rem)	2.1E-6	
	Cancer Fatalities	1.1E-9	
	Cancer Incidence	3.6E-9	
	Genetic Effects	2.1E-10	
Offsite MEI	Dose (rem)	9.7E-11	
	Cancer Fatalities	4.8E-14	
	Cancer Incidence	1.6E-13	
	Genetic Effects	1.0E-14	
	Hazard Index		
WM Workers 11	Dose (FTE-rem)	7.3E-2	
	Cancer Fatalities	2.9E-5	
	Cancer Incidence	1.0E-4	
	Genetic Effects	4.4E-6	
	Exposure Index		
	Construction Fatalities		1.3E-3
	Construction Injuries		5.6E-1
	Operation Fatalities		1.3E-3
	Operation Injuries		1.1

Table 3.1-240. Risks Associated with Routine Treatment of LLW at K-25 Under Centralized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3800	Dose (person-rem)	1.0E-6	
	Cancer Fatalities	5.0E-10	
	Cancer Incidence	1.7E-9	
	Genetic Effects	1.0E-10	
Noninvolved Worker MEI	Dose (rem)	9.2E-10	
	Cancer Fatalities	4.6E-13	
	Cancer Incidence	1.6E-12	
	Genetic Effects	9.2E-14	
	Hazard Index		
Offsite Population 871406	Dose (person-rem)	1.7E-5	
	Cancer Fatalities	8.6E-9	
	Cancer Incidence	2.9E-8	
	Genetic Effects	1.7E-9	
Offsite MEI	Dose (rem)	3.8E-10	
	Cancer Fatalities	1.9E-13	
	Cancer Incidence	6.4E-13	
	Genetic Effects	3.8E-14	
	Hazard Index		
WM Workers 582	Dose (FTE-rem)	8.8	
	Cancer Fatalities	3.5E-3	
	Cancer Incidence	1.2E-2	
	Genetic Effects	5.3E-4	
	Exposure Index		
	Construction Fatalities		5.0E-2
	Construction Injuries		2.2E1
	Operation Fatalities		7.0E-2
	Operation Injuries		6.0E1

Table 3.1-241. Risks Associated with Routine Treatment of LLW at LANL Under Centralized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 11552	Dose (person-rem)	2.8E-2	
	Cancer Fatalities	1.4E-5	
	Cancer Incidence	4.8E-5	
	Genetic Effects	2.8E-6	
Noninvolved Worker MEI	Dose (rem)	2.2E-5	
	Cancer Fatalities	1.1E-8	
	Cancer Incidence	3.7E-8	
	Genetic Effects	2.2E-9	
	Hazard Index		
Offsite Population 159152	Dose (person-rem)	4.2E-1	
	Cancer Fatalities	2.1E-4	
	Cancer Incidence	7.1E-4	
	Genetic Effects	4.2E-5	
Offsite MEI	Dose (rem)	4.4E-5	
	Cancer Fatalities	2.2E-8	
	Cancer Incidence	7.5E-8	
	Genetic Effects	4.4E-9	
	Hazard Index		
WM Workers 902	Dose (FTE-rem)	3.5E2	
	Cancer Fatalities	1.4E-1	
	Cancer Incidence	4.9E-1	
	Genetic Effects	2.1E-2	
	Exposure Index		
	Construction Fatalities		8.0E-2
	Construction Injuries		3.5E1
	Operation Fatalities		1.1E-1
	Operation Injuries		9.3E1

Table 3.1-242. Risks Associated with Routine Treatment of LLW at LBL Under Centralized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3940	Dose (person-rem)	5.4E-2	
	Cancer Fatalities	2.7E-5	
	Cancer Incidence	9.1E-5	
	Genetic Effects	5.4E-6	
Noninvolved Worker MEI	Dose (rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.1E-8	
	Genetic Effects	4.2E-9	
	Hazard Index		
Offsite Population 1586829	Dose (person-rem)	3.6E1	
	Cancer Fatalities	1.8E-2	
	Cancer Incidence	6.2E-2	
	Genetic Effects	3.6E-3	
Offsite MEI	Dose (rem)	5.7E-4	
	Cancer Fatalities	2.9E-7	
	Cancer Incidence	9.7E-7	
	Genetic Effects	5.7E-8	
	Hazard Index		
WM Workers 174	Dose (FTE-rem)	1.9E1	
	Cancer Fatalities	7.6E-3	
	Cancer Incidence	2.7E-2	
	Genetic Effects	1.1E-3	
	Exposure Index		
	Construction Fatalities		2.2E-2
	Construction Injuries		9.6
	Operation Fatalities		2.1E-2
	Operation Injuries		1.8E1

Table 3.1–243. Risks Associated with Routine Treatment of LLW at LLNL Under Centralized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 9504	Dose (person-rem)	1.2E-1	
	Cancer Fatalities	6.0E-5	
	Cancer Incidence	2.0E-4	
	Genetic Effects	1.2E-5	
Noninvolved Worker MEI	Dose (rem)	4.1E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.0E-8	
	Genetic Effects	4.1E-9	
	Hazard Index		
Offsite Population 6324234	Dose (person-rem)	8.7	
	Cancer Fatalities	4.4E-3	
	Cancer Incidence	1.5E-2	
	Genetic Effects	8.7E-4	
Offsite MEI	Dose (rem)	1.4E-4	
	Cancer Fatalities	7.1E-8	
	Cancer Incidence	2.4E-7	
	Genetic Effects	1.4E-8	
	Hazard Index		
WM Workers 227	Dose (FTE-rem)	6.3	
	Cancer Fatalities	2.5E-3	
	Cancer Incidence	8.9E-3	
	Genetic Effects	3.8E-4	
	Exposure Index		
	Construction Fatalities		2.9E-2
	Construction Injuries		1.3E1
	Operation Fatalities		2.8E-2
	Operation Injuries		2.3E1

Table 3.1-244. Risks Associated with Routine Treatment of LLW at Mound Under Centralized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1688	Dose (person-rem)	1.6E-6	
	Cancer Fatalities	8.0E-10	
	Cancer Incidence	2.7E-9	
	Genetic Effects	1.6E-10	
Noninvolved Worker MEI	Dose (rem)	2.5E-9	
	Cancer Fatalities	1.3E-12	
	Cancer Incidence	4.3E-12	
	Genetic Effects	2.5E-13	
	Hazard Index		
Offsite Population 3032983	Dose (person-rem)	2.1E-4	
	Cancer Fatalities	1.0E-7	
	Cancer Incidence	3.5E-7	
	Genetic Effects	2.1E-8	
Offsite MEI	Dose (rem)	1.2E-8	
	Cancer Fatalities	5.9E-12	
	Cancer Incidence	2.0E-11	
	Genetic Effects	1.2E-12	
	Hazard Index		
WM Workers 435	Dose (FTE-rem)	3.3	
	Cancer Fatalities	1.3E-3	
	Cancer Incidence	4.7E-3	
	Genetic Effects	2.0E-4	
	Exposure Index		
	Construction Fatalities		5.1E-2
	Construction Injuries		2.2E1
	Operation Fatalities		5.3E-2
	Operation Injuries		4.5E1

Table 3.1-245. Risks Associated with Routine Treatment of LLW at ORNL Under Centralized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3809	Dose (person-rem)	3.8E-4	
	Cancer Fatalities	1.9E-7	
	Cancer Incidence	6.4E-7	
	Genetic Effects	3.8E-8	
Noninvolved Worker MEI	Dose (rem)	3.4E-7	
	Cancer Fatalities	1.7E-10	
	Cancer Incidence	5.9E-10	
	Genetic Effects	3.4E-11	
	Hazard Index		
Offsite Population 881652	Dose (person-rem)	1.1E-2	
	Cancer Fatalities	5.7E-6	
	Cancer Incidence	1.9E-5	
	Genetic Effects	1.1E-6	
Offsite MEI	Dose (rem)	3.5E-7	
	Cancer Fatalities	1.8E-10	
	Cancer Incidence	6.0E-10	
	Genetic Effects	3.5E-11	
	Hazard Index		
WM Workers 444	Dose (FTE-rem)	6.5E1	
	Cancer Fatalities	2.6E-2	
	Cancer Incidence	9.1E-2	
	Genetic Effects	3.9E-3	
	Exposure Index		
	Construction Fatalities		6.7E-2
	Construction Injuries		2.9E1
	Operation Fatalities		5.4E-2
	Operation Injuries		4.6E1

Table 3.1–246. Risks Associated with Routine Treatment of LLW at Pantex Under Centralized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 2825	Dose (person-rem)	3.3E-5	
	Cancer Fatalities	1.6E-8	
	Cancer Incidence	5.6E-8	
	Genetic Effects	3.3E-9	
Noninvolved Worker MEI	Dose (rem)	6.3E-8	
	Cancer Fatalities	3.1E-11	
	Cancer Incidence	1.1E-10	
	Genetic Effects	6.3E-12	
	Hazard Index		
Offsite Population 265185	Dose (person-rem)	2.2E-4	
	Cancer Fatalities	1.1E-7	
	Cancer Incidence	3.7E-7	
	Genetic Effects	2.2E-8	
Offsite MEI	Dose (rem)	1.8E-8	
	Cancer Fatalities	9.2E-12	
	Cancer Incidence	3.1E-11	
	Genetic Effects	1.8E-12	
	Hazard Index		
WM Workers 675	Dose (FTE-rem)	6.4	
	Cancer Fatalities	2.6E-3	
	Cancer Incidence	9.0E-3	
	Genetic Effects	3.9E-4	
	Exposure Index		
	Construction Fatalities		6.1E-2
	Construction Injuries		2.7E1
	Operation Fatalities		8.2E-2
	Operation Injuries		6.9E1

Table 3.1-247. Risks Associated with Routine Treatment of LLW at PGDP Under Centralized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1952	Dose (person-rem)	3.3E-6	
	Cancer Fatalities	1.7E-9	
	Cancer Incidence	5.7E-9	
	Genetic Effects	3.3E-10	
Noninvolved Worker MEI	Dose (rem)	4.1E-9	
	Cancer Fatalities	2.1E-12	
	Cancer Incidence	7.0E-12	
	Genetic Effects	4.1E-13	
	Hazard Index		
Offsite Population 500502	Dose (person-rem)	4.2E-5	
	Cancer Fatalities	2.1E-8	
	Cancer Incidence	7.2E-8	
	Genetic Effects	4.2E-9	
Offsite MEI	Dose (rem)	4.7E-9	
	Cancer Fatalities	2.4E-12	
	Cancer Incidence	8.0E-12	
	Genetic Effects	4.7E-13	
	Hazard Index		
WM Workers 497	Dose (FTE-rem)	3.7	
	Cancer Fatalities	1.5E-3	
	Cancer Incidence	5.2E-3	
	Genetic Effects	2.2E-4	
	Exposure Index		
	Construction Fatalities		4.9E-2
	Construction Injuries		2.2E1
	Operation Fatalities		6.0E-2
	Operation Injuries		5.1E1

Table 3.1–248. Risks Associated with Routine Treatment of LLW at Pinellas Under Centralized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 1167	Dose (person-rem)	4.2E-8	
	Cancer Fatalities	2.1E-11	
	Cancer Incidence	7.2E-11	
	Genetic Effects	4.2E-12	
Noninvolved Worker MEI	Dose (rem)	8.7E-11	
	Cancer Fatalities	4.4E-14	
	Cancer Incidence	1.5E-13	
	Genetic Effects	9.0E-15	
	Hazard Index		
Offsite Population 2532174	Dose (person-rem)	3.5E-5	
	Cancer Fatalities	1.8E-8	
	Cancer Incidence	6.0E-8	
	Genetic Effects	3.5E-9	
Offsite MEI	Dose (rem)	7.7E-10	
	Cancer Fatalities	3.8E-13	
	Cancer Incidence	1.3E-12	
	Genetic Effects	7.7E-14	
	Hazard Index		
WM Workers 21	Dose (FTE-rem)	1.4E-1	
	Cancer Fatalities	5.6E-5	
	Cancer Incidence	2.0E-4	
	Genetic Effects	8.4E-6	
	Exposure Index		
	Construction Fatalities		2.5E-3
	Construction Injuries		1.1
	Operation Fatalities		2.5E-3
	Operation Injuries		2.1

Table 3.1-249. Risks Associated with Routine Treatment of LLW at Ports Under Centralized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 3226	Dose (person-rem)	3.7E-7	
	Cancer Fatalities	1.8E-10	
	Cancer Incidence	6.2E-10	
	Genetic Effects	3.7E-11	
Noninvolved Worker MEI	Dose (rem)	2.1E-10	
	Cancer Fatalities	1.0E-13	
	Cancer Incidence	3.5E-13	
	Genetic Effects	2.1E-14	
	Hazard Index		
Offsite Population 639602	Dose (person-rem)	3.5E-6	
	Cancer Fatalities	1.8E-9	
	Cancer Incidence	5.9E-9	
	Genetic Effects	3.5E-10	
Offsite MEI	Dose (rem)	4.4E-10	
	Cancer Fatalities	2.2E-13	
	Cancer Incidence	7.5E-13	
	Genetic Effects	4.4E-14	
	Hazard Index		
WM Workers 1087	Dose (FTE-rem)	1.1E1	
	Cancer Fatalities	4.6E-3	
	Cancer Incidence	1.6E-2	
	Genetic Effects	6.8E-4	
	Exposure Index		
	Construction Fatalities		1.0E-1
	Construction Injuries		4.4E1
	Operation Fatalities		1.3E-1
	Operation Injuries		1.1E2

Table 3.1–250. Risks Associated with Routine Treatment of LLW at RFETS Under Centralized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 6993	Dose (person-rem)	4.1E-5	
	Cancer Fatalities	2.0E-8	
	Cancer Incidence	6.9E-8	
	Genetic Effects	4.1E-9	
Noninvolved Worker MEI	Dose (rem)	2.5E-8	
	Cancer Fatalities	1.2E-11	
	Cancer Incidence	4.2E-11	
	Genetic Effects	2.5E-12	
	Hazard Index		
Offsite Population 2171877	Dose (person-rem)	8.0E-4	
	Cancer Fatalities	4.0E-7	
	Cancer Incidence	1.4E-6	
	Genetic Effects	8.0E-8	
Offsite MEI	Dose (rem)	1.1E-8	
	Cancer Fatalities	5.4E-12	
	Cancer Incidence	1.8E-11	
	Genetic Effects	1.1E-12	
	Hazard Index		
WM Workers 344	Dose (FTE-rem)	2.9	
	Cancer Fatalities	1.2E-3	
	Cancer Incidence	4.0E-3	
	Genetic Effects	1.7E-4	
	Exposure Index		
	Construction Fatalities		3.8E-2
	Construction Injuries		1.7E1
	Operation Fatalities		4.2E-2
	Operation Injuries		3.5E1

Table 3.1–251. Risks Associated with Routine Treatment of LLW at SNL–NM Under Centralized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 10576	Dose (person-rem)	6.1E-5	
	Cancer Fatalities	3.0E-8	
	Cancer Incidence	1.0E-7	
	Genetic Effects	6.1E-9	
Noninvolved Worker MEI	Dose (rem)	2.6E-8	
	Cancer Fatalities	1.3E-11	
	Cancer Incidence	4.3E-11	
	Genetic Effects	2.6E-12	
	Hazard Index		
Offsite Population 610714	Dose (person-rem)	3.6E-3	
	Cancer Fatalities	1.8E-6	
	Cancer Incidence	6.2E-6	
	Genetic Effects	3.6E-7	
Offsite MEI	Dose (rem)	1.4E-7	
	Cancer Fatalities	7.2E-11	
	Cancer Incidence	2.4E-10	
	Genetic Effects	1.4E-11	
	Hazard Index		
WM Workers 210	Dose (FTE-rem)	1.0	
	Cancer Fatalities	4.1E-4	
	Cancer Incidence	1.5E-3	
	Genetic Effects	6.2E-5	
	Exposure Index		
	Construction Fatalities		2.5E-2
	Construction Injuries		1.1E1
	Operation Fatalities		2.5E-2
	Operation Injuries		2.2E1

Table 3.1-252. Risks Associated with Routine Treatment of LLW at SRS Under Centralized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 15996	Dose (person-rem)	2.2E-3	
	Cancer Fatalities	1.1E-6	
	Cancer Incidence	3.7E-6	
	Genetic Effects	2.2E-7	
Noninvolved Worker MEI	Dose (rem)	1.9E-6	
	Cancer Fatalities	9.5E-10	
	Cancer Incidence	3.2E-9	
	Genetic Effects	1.9E-10	
	Hazard Index		
Offsite Population 620618	Dose (person-rem)	2.5E-2	
	Cancer Fatalities	1.2E-5	
	Cancer Incidence	4.2E-5	
	Genetic Effects	2.5E-6	
Offsite MEI	Dose (rem)	2.3E-7	
	Cancer Fatalities	1.2E-10	
	Cancer Incidence	3.9E-10	
	Genetic Effects	2.3E-11	
	Hazard Index		
WM Workers 1986	Dose (FTE-rem)	5.7E2	
	Cancer Fatalities	2.3E-1	
	Cancer Incidence	7.9E-1	
	Genetic Effects	3.4E-2	
	Exposure Index		
	Construction Fatalities		2.0E-1
	Construction Injuries		8.6E1
	Operation Fatalities		2.4E-1
	Operation Injuries		2.0E2

Table 3.1–253. Risks Associated with Routine Treatment of LLW at Y-12 Under Centralized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Noninvolved Worker Population 7699	Dose (person-rem)	5.7E-6	
	Cancer Fatalities	2.9E-9	
	Cancer Incidence	9.7E-9	
	Genetic Effects	5.7E-10	
Noninvolved Worker MEI	Dose (rem)	1.9E-9	
	Cancer Fatalities	9.4E-13	
	Cancer Incidence	3.2E-12	
	Genetic Effects	1.9E-13	
	Hazard Index		
Offsite Population 895379	Dose (person-rem)	4.1E-5	
	Cancer Fatalities	2.0E-8	
	Cancer Incidence	6.9E-8	
	Genetic Effects	4.1E-9	
Offsite MEI	Dose (rem)	1.5E-9	
	Cancer Fatalities	7.5E-13	
	Cancer Incidence	2.6E-12	
	Genetic Effects	1.5E-13	
	Hazard Index		
WM Workers 853	Dose (FTE-rem)	1.3E1	
	Cancer Fatalities	5.3E-3	
	Cancer Incidence	1.8E-2	
	Genetic Effects	7.9E-4	
	Exposure Index		
	Construction Fatalities		7.1E-2
	Construction Injuries		3.1E1
	Operation Fatalities		1.0E-1
	Operation Injuries		8.8E1

Table 3.1-254. Risks Associated With Disposing LLW at Hanford Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 18)	Dose (person-rem)	1.1E1	
	Cancer Fatalities	5.6E-3	
	Cancer Incidence	1.9E-2	
	Genetic Effects	1.1E-3	
	Hazard Index		
All Lifetimes	Dose (person-rem)	1.5E2	
	Cancer Fatalities	7.4E-2	
	Cancer Incidence	2.5E-1	
	Genetic Effects	1.5E-2	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.7E3	
	Cancer Fatalities	6.7E-1	
	Cancer Incidence	2.3	
	Genetic Effects	1.0E-1	
	Exposure Index		
	Operation Fatalities		4.8E-2
	Operation Injuries		2.1E1
	Construction Fatalities		3.9E-1
	Construction Injuries		3.3E2

Table 3.1–255. Risks Associated With Disposing LLW at INEL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.6E3	
	Cancer Fatalities	6.4E-1	
	Cancer Incidence	2.2	
	Genetic Effects	9.6E-2	
	Exposure Index		
	Operation Fatalities		1.9E-2
	Operation Injuries		8.2
	Construction Fatalities		1.9E-1
	Construction Injuries		1.7E2

Table 3.1–256. Risks Associated With Disposing LLW at LANL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	2.1E3	
	Cancer Fatalities	8.3E-1	
	Cancer Incidence	2.9	
	Genetic Effects	1.2E-1	
	Exposure Index		
	Operation Fatalities		5.7E-2
	Operation Injuries		2.5E1
	Construction Fatalities		3.2E-1
	Construction Injuries		2.7E2

Table 3.1–257. Risks Associated With Disposing LLW at NTS Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	2.0E2	
	Cancer Fatalities	8.0E-2	
	Cancer Incidence	2.8E-1	
	Genetic Effects	1.2E-2	
	Exposure Index		
	Operation Fatalities		4.7E-2
	Operation Injuries		2.1E1
	Construction Fatalities		3.6E-1
	Construction Injuries		3.0E2

Table 3.1–258. Risks Associated With Disposing LLW at ORNL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 22)	Dose (person-rem)	1.7E-4	
	Cancer Fatalities	8.2E-8	
	Cancer Incidence	2.8E-7	
	Genetic Effects	1.7E-8	
	Hazard Index		
All Lifetimes	Dose (person-rem)	2.3E-3	
	Cancer Fatalities	1.2E-6	
	Cancer Incidence	4.0E-6	
	Genetic Effects	2.3E-7	
	Hazard Index		
WM Workers	Dose (FTE-rem)	9.5E1	
	Cancer Fatalities	3.8E-2	
	Cancer Incidence	1.3E-1	
	Genetic Effects	5.7E-3	
	Exposure Index		
	Operation Fatalities		1.4E-1
	Operation Injuries		6.3E1
	Construction Fatalities		1.7E-1
	Construction Injuries		1.5E2

Table 3.1–259. Risks Associated With Disposing LLW at SRS Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 153)	Dose (person-rem)	3.0E-1	
	Cancer Fatalities	1.5E-4	
	Cancer Incidence	5.0E-4	
	Genetic Effects	3.0E-5	
	Hazard Index		
All Lifetimes	Dose (person-rem)	4.3	
	Cancer Fatalities	2.2E-3	
	Cancer Incidence	7.3E-3	
	Genetic Effects	4.3E-4	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.8E3	
	Cancer Fatalities	7.3E-1	
	Cancer Incidence	2.5	
	Genetic Effects	1.1E-1	
	Exposure Index		
	Operation Fatalities		1.4
	Operation Injuries		6.2E2
	Construction Fatalities		6.5E-1
	Construction Injuries		5.5E2

Table 3.1-260. Risks Associated With Disposing LLW at ANL-E Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 64)	Dose (person-rem)	2.3E-1	
	Cancer Fatalities	1.1E-4	
	Cancer Incidence	3.9E-4	
	Genetic Effects	2.3E-5	
	Hazard Index		
All Lifetimes	Dose (person-rem)	1.0E1	
	Cancer Fatalities	5.1E-3	
	Cancer Incidence	1.7E-2	
	Genetic Effects	1.0E-3	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.1E2	
	Cancer Fatalities	4.3E-2	
	Cancer Incidence	1.5E-1	
	Genetic Effects	6.5E-3	
	Exposure Index		
	Operation Fatalities		2.9E-2
	Operation Injuries		1.3E1
	Construction Fatalities		3.4E-2
	Construction Injuries		2.9E1

Table 3.1-261. Risks Associated With Disposing LLW at Hanford Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 18)	Dose (person-rem)	2.0	
	Cancer Fatalities	1.0E-3	
	Cancer Incidence	3.4E-3	
	Genetic Effects	2.0E-4	
	Hazard Index		
All Lifetimes	Dose (person-rem)	2.8E1	
	Cancer Fatalities	1.4E-2	
	Cancer Incidence	4.7E-2	
	Genetic Effects	2.8E-3	
	Hazard Index		
WM Workers	Dose (FTE-rem)	9.3E2	
	Cancer Fatalities	3.7E-1	
	Cancer Incidence	1.3	
	Genetic Effects	5.6E-2	
	Exposure Index		
	Operation Fatalities		4.0E-2
	Operation Injuries		1.8E1
	Construction Fatalities		1.4E-1
	Construction Injuries		1.2E2

Table 3.1-262. Risks Associated With Disposing LLW at INEL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.0E3	
	Cancer Fatalities	4.2E-1	
	Cancer Incidence	1.5	
	Genetic Effects	6.3E-2	
	Exposure Index		
	Operation Fatalities		5.8E-2
	Operation Injuries		2.5E1
	Construction Fatalities		1.9E-1
	Construction Injuries		1.6E2

Table 3.1-263. Risks Associated With Disposing LLW at LANL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.4E3	
	Cancer Fatalities	5.6E-1	
	Cancer Incidence	2.0	
	Genetic Effects	8.4E-2	
	Exposure Index		
	Operation Fatalities		8.9E-2
	Operation Injuries		3.9E1
	Construction Fatalities		2.3E-1
	Construction Injuries		1.9E2

Table 3.1-264. Risks Associated With Disposing LLW at LLNL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 142)	Dose (person-rem)	8.8E-3	
	Cancer Fatalities	4.4E-6	
	Cancer Incidence	1.5E-5	
	Genetic Effects	8.8E-7	
	Hazard Index		
All Lifetimes	Dose (person-rem)	1.4E-1	
	Cancer Fatalities	6.8E-5	
	Cancer Incidence	2.3E-4	
	Genetic Effects	1.4E-5	
	Hazard Index		
WM Workers	Dose (FTE-rem)	4.0E2	
	Cancer Fatalities	1.6E-1	
	Cancer Incidence	5.6E-1	
	Genetic Effects	2.4E-2	
	Exposure Index		
	Operation Fatalities		1.6E-2
	Operation Injuries		6.7
	Construction Fatalities		5.4E-2
	Construction Injuries		4.6E1

Table 3.1–265. Risks Associated With Disposing LLW at ORNL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 22)	Dose (person-rem)	2.0E-3	
	Cancer Fatalities	1.0E-6	
	Cancer Incidence	3.4E-6	
	Genetic Effects	2.0E-7	
	Hazard Index		
All Lifetimes	Dose (person-rem)	2.7E-2	
	Cancer Fatalities	1.4E-5	
	Cancer Incidence	4.6E-5	
	Genetic Effects	2.7E-6	
	Hazard Index		
WM Workers	Dose (FTE-rem)	7.4E1	
	Cancer Fatalities	3.0E-2	
	Cancer Incidence	1.0E-1	
	Genetic Effects	4.4E-3	
	Exposure Index		
	Operation Fatalities		2.7E-1
	Operation Injuries		1.2E2
	Construction Fatalities		1.6E-1
	Construction Injuries		1.3E2

Table 3.1-266. Risks Associated With Disposing LLW at Pantex Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	7.0	
	Cancer Fatalities	2.8E-3	
	Cancer Incidence	9.8E-3	
	Genetic Effects	4.2E-4	
	Exposure Index		
	Operation Fatalities		3.4E-2
	Operation Injuries		1.5E1
	Construction Fatalities		1.1E-1
	Construction Injuries		8.9E1

Table 3.1–267. Risks Associated With Disposing LLW at PGDP Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 42)	Dose (person-rem)	7.5E-1	
	Cancer Fatalities	3.7E-4	
	Cancer Incidence	1.3E-3	
	Genetic Effects	7.5E-5	
	Hazard Index		
All Lifetimes	Dose (person-rem)	1.2E1	
	Cancer Fatalities	6.1E-3	
	Cancer Incidence	2.1E-2	
	Genetic Effects	1.2E-3	
	Hazard Index		
WM Workers	Dose (FTE-rem)	7.6	
	Cancer Fatalities	3.1E-3	
	Cancer Incidence	1.1E-2	
	Genetic Effects	4.6E-4	
	Exposure Index		
	Operation Fatalities		8.7E-2
	Operation Injuries		3.8E1
	Construction Fatalities		6.5E-2
	Construction Injuries		5.5E1

Table 3.1-268. Risks Associated With Disposing LLW at Ports Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 37)	Dose (person-rem)	4.8E-4	
	Cancer Fatalities	2.4E-7	
	Cancer Incidence	8.2E-7	
	Genetic Effects	4.8E-8	
	Hazard Index		
All Lifetimes	Dose (person-rem)	8.9E-3	
	Cancer Fatalities	4.5E-6	
	Cancer Incidence	1.5E-5	
	Genetic Effects	8.9E-7	
	Hazard Index		
WM Workers	Dose (FTE-rem)	3.3E1	
	Cancer Fatalities	1.3E-2	
	Cancer Incidence	4.6E-2	
	Genetic Effects	2.0E-3	
	Exposure Index		
	Operation Fatalities		2.6E-1
	Operation Injuries		1.1E2
	Construction Fatalities		1.7E-1
	Construction Injuries		1.4E2

Table 3.1–269. Risks Associated With Disposing LLW at RFETS Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 38)	Dose (person-rem)	2.2E-4	
	Cancer Fatalities	1.1E-7	
	Cancer Incidence	3.7E-7	
	Genetic Effects	2.2E-8	
	Hazard Index		
All Lifetimes	Dose (person-rem)	4.1E-3	
	Cancer Fatalities	2.1E-6	
	Cancer Incidence	7.0E-6	
	Genetic Effects	4.1E-7	
	Hazard Index		
WM Workers	Dose (FTE-rem)	7.1	
	Cancer Fatalities	2.8E-3	
	Cancer Incidence	9.9E-3	
	Genetic Effects	4.3E-4	
	Exposure Index		
	Operation Fatalities		7.6E-2
	Operation Injuries		3.3E1
	Construction Fatalities		6.1E-2
	Construction Injuries		5.2E1

Table 3.1-270. Risks Associated With Disposing LLW at SNL-NM Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 15)	Dose (person-rem)	1.3E2	
	Cancer Fatalities	6.3E-2	
	Cancer Incidence	2.1E-1	
	Genetic Effects	1.3E-2	
	Hazard Index		
All Lifetimes	Dose (person-rem)	2.3E3	
	Cancer Fatalities	1.1	
	Cancer Incidence	3.9	
	Genetic Effects	2.3E-1	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.6E2	
	Cancer Fatalities	6.3E-2	
	Cancer Incidence	2.2E-1	
	Genetic Effects	9.4E-3	
	Exposure Index		
	Operation Fatalities		7.2E-3
	Operation Injuries		3.1
	Construction Fatalities		2.5E-2
	Construction Injuries		2.1E1

Table 3.1–271. Risks Associated With Disposing LLW at SRS Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 153)	Dose (person-rem)	2.3E-1	
	Cancer Fatalities	1.1E-4	
	Cancer Incidence	3.8E-4	
	Genetic Effects	2.3E-5	
	Hazard Index		
All Lifetimes	Dose (person-rem)	3.3	
	Cancer Fatalities	1.7E-3	
	Cancer Incidence	5.6E-3	
	Genetic Effects	3.3E-4	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.5E3	
	Cancer Fatalities	5.8E-1	
	Cancer Incidence	2.0	
	Genetic Effects	8.7E-2	
	Exposure Index		
	Operation Fatalities		2.9
	Operation Injuries		1.3E3
	Construction Fatalities		5.8E-1
	Construction Injuries		4.9E2

Table 3.1-272. Risks Associated With Disposing LLW at Hanford Under the Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 18)	Dose (person-rem)	2.0	
	Cancer Fatalities	1.0E-3	
	Cancer Incidence	3.4E-3	
	Genetic Effects	2.0E-4	
	Hazard Index		
All Lifetimes	Dose (person-rem)	2.8E1	
	Cancer Fatalities	1.4E-2	
	Cancer Incidence	4.7E-2	
	Genetic Effects	2.8E-3	
	Hazard Index		
WM Workers	Dose (FTE-rem)	9.3E2	
	Cancer Fatalities	3.7E-1	
	Cancer Incidence	1.3	
	Genetic Effects	5.6E-2	
	Exposure Index		
	Operation Fatalities		4.0E-2
	Operation Injuries		1.8E1
	Construction Fatalities		1.4E-1
	Construction Injuries		1.2E2

Table 3.1–273. Risks Associated With Disposing LLW at INEL Under the Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.0E3	
	Cancer Fatalities	4.2E-1	
	Cancer Incidence	1.5	
	Genetic Effects	6.3E-2	
	Exposure Index		
	Operation Fatalities		5.8E-2
	Operation Injuries		2.5E1
	Construction Fatalities		1.9E-1
	Construction Injuries		1.6E2

Table 3.1-274. Risks Associated With Disposing LLW at LANL Under the Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.4E3	
	Cancer Fatalities	5.6E-1	
	Cancer Incidence	2.0	
	Genetic Effects	8.5E-2	
	Exposure Index		
	Operation Fatalities		9.0E-2
	Operation Injuries		3.9E1
	Construction Fatalities		2.3E-1
	Construction Injuries		2.0E2

Table 3.1–275. Risks Associated With Disposing LLW at LLNL Under the Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 142)	Dose (person-rem)	8.8E-3	
	Cancer Fatalities	4.4E-6	
	Cancer Incidence	1.5E-5	
	Genetic Effects	8.8E-7	
	Hazard Index		
All Lifetimes	Dose (person-rem)	1.4E-1	
	Cancer Fatalities	6.8E-5	
	Cancer Incidence	2.3E-4	
	Genetic Effects	1.4E-5	
	Hazard Index		
WM Workers	Dose (FTE-rem)	4.0E2	
	Cancer Fatalities	1.6E-1	
	Cancer Incidence	5.6E-1	
	Genetic Effects	2.4E-2	
	Exposure Index		
	Operation Fatalities		1.6E-2
	Operation Injuries		6.7
	Construction Fatalities		5.4E-2
	Construction Injuries		4.6E1

Table 3.1-276. Risks Associated With Disposing LLW at ORNL Under the Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 22)	Dose (person-rem)	2.0E-3	
	Cancer Fatalities	1.0E-6	
	Cancer Incidence	3.4E-6	
	Genetic Effects	2.0E-7	
	Hazard Index		
All Lifetimes	Dose (person-rem)	2.7E-2	
	Cancer Fatalities	1.4E-5	
	Cancer Incidence	4.6E-5	
	Genetic Effects	2.7E-6	
	Hazard Index		
WM Workers	Dose (FTE-rem)	7.4E1	
	Cancer Fatalities	3.0E-2	
	Cancer Incidence	1.0E-1	
	Genetic Effects	4.4E-3	
	Exposure Index		
	Operation Fatalities		2.7E-1
	Operation Injuries		1.2E2
	Construction Fatalities		1.6E-1
	Construction Injuries		1.3E2

Table 3.1–277. Risks Associated With Disposing LLW at Pantex Under the Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	7.0	
	Cancer Fatalities	2.8E-3	
	Cancer Incidence	9.8E-3	
	Genetic Effects	4.2E-4	
	Exposure Index		
	Operation Fatalities		3.4E-2
	Operation Injuries		1.5E1
	Construction Fatalities		1.1E-1
	Construction Injuries		8.9E1

Table 3.1–278. Risks Associated With Disposing LLW at Ports Under the Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 145)	Dose (person-rem)	4.0E-3	
	Cancer Fatalities	2.0E-6	
	Cancer Incidence	6.9E-6	
	Genetic Effects	4.0E-7	
	Hazard Index		
All Lifetimes	Dose (person-rem)	1.5E-1	
	Cancer Fatalities	7.7E-5	
	Cancer Incidence	2.6E-4	
	Genetic Effects	1.5E-5	
	Hazard Index		
WM Workers	Dose (FTE-rem)	7.8E1	
	Cancer Fatalities	3.1E-2	
	Cancer Incidence	1.1E-1	
	Genetic Effects	4.7E-3	
	Exposure Index		
	Operation Fatalities		3.0E-1
	Operation Injuries		1.3E2
	Construction Fatalities		1.9E-1
	Construction Injuries		1.7E2

Table 3.1–279. Risks Associated With Disposing LLW at PGDP Under the Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 42)	Dose (person-rem)	7.5E-1	
	Cancer Fatalities	3.7E-4	
	Cancer Incidence	1.3E-3	
	Genetic Effects	7.5E-5	
	Hazard Index		
All Lifetimes	Dose (person-rem)	1.2E1	
	Cancer Fatalities	6.1E-3	
	Cancer Incidence	2.1E-2	
	Genetic Effects	1.2E-3	
	Hazard Index		
WM Workers	Dose (FTE-rem)	7.6	
	Cancer Fatalities	3.1E-3	
	Cancer Incidence	1.1E-2	
	Genetic Effects	4.6E-4	
	Exposure Index		
	Operation Fatalities		8.7E-2
	Operation Injuries		3.8E1
	Construction Fatalities		6.5E-2
	Construction Injuries		5.5E1

Table 3.1-280. Risks Associated With Disposing LLW at RFETS Under the Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 38)	Dose (person-rem)	2.2E-4	
	Cancer Fatalities	1.1E-7	
	Cancer Incidence	3.7E-7	
	Genetic Effects	2.2E-8	
	Hazard Index		
All Lifetimes	Dose (person-rem)	4.1E-3	
	Cancer Fatalities	2.1E-6	
	Cancer Incidence	7.0E-6	
	Genetic Effects	4.1E-7	
	Hazard Index		
WM Workers	Dose (FTE-rem)	7.1	
	Cancer Fatalities	2.8E-3	
	Cancer Incidence	9.9E-3	
	Genetic Effects	4.3E-4	
	Exposure Index		
	Operation Fatalities		7.6E-2
	Operation Injuries		3.3E1
	Construction Fatalities		6.1E-2
	Construction Injuries		5.2E1

Table 3.1–281. Risks Associated With Disposing LLW at SRS Under the Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 153)	Dose (person-rem)	2.4E-1	
	Cancer Fatalities	1.2E-4	
	Cancer Incidence	4.1E-4	
	Genetic Effects	2.4E-5	
	Hazard Index		
All Lifetimes	Dose (person-rem)	3.5	
	Cancer Fatalities	1.8E-3	
	Cancer Incidence	6.0E-3	
	Genetic Effects	3.5E-4	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.5E3	
	Cancer Fatalities	5.8E-1	
	Cancer Incidence	2.0	
	Genetic Effects	8.7E-2	
	Exposure Index		
	Operation Fatalities		2.9
	Operation Injuries		1.3E3
	Construction Fatalities		5.8E-1
	Construction Injuries		4.9E2

Table 3.1–282. Risks Associated With Disposing LLW at Hanford Under the Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 18)	Dose (person-rem)	9.1	
	Cancer Fatalities	4.5E-3	
	Cancer Incidence	1.5E-2	
	Genetic Effects	9.1E-4	
	Hazard Index		
All Lifetimes	Dose (person-rem)	1.2E2	
	Cancer Fatalities	6.2E-2	
	Cancer Incidence	2.1E-1	
	Genetic Effects	1.2E-2	
	Hazard Index		
WM Workers	Dose (FTE-rem)	7.8E2	
	Cancer Fatalities	3.1E-1	
	Cancer Incidence	1.1	
	Genetic Effects	4.7E-2	
	Exposure Index		
	Operation Fatalities		1.9E-2
	Operation Injuries		8.1
	Construction Fatalities		9.7E-2
	Construction Injuries		8.2E1

Table 3.1–283. Risks Associated With Disposing LLW at INEL Under the Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	8.6E2	
	Cancer Fatalities	3.5E-1	
	Cancer Incidence	1.2	
	Genetic Effects	5.2E-2	
	Exposure Index		
	Operation Fatalities		2.6E-2
	Operation Injuries		1.2E1
	Construction Fatalities		1.2E-1
	Construction Injuries		1.0E2

Table 3.1–284. Risks Associated With Disposing LLW at LANL Under the Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	9.1E2	
	Cancer Fatalities	3.6E-1	
	Cancer Incidence	1.3	
	Genetic Effects	5.4E-2	
	Exposure Index		
	Operation Fatalities		4.2E-2
	Operation Injuries		1.8E1
	Construction Fatalities		1.3E-1
	Construction Injuries		1.1E2

Table 3.1–285. Risks Associated With Disposing LLW at LLNL Under the Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 142)	Dose (person-rem)	8.8E-3	
	Cancer Fatalities	4.4E-6	
	Cancer Incidence	1.5E-5	
	Genetic Effects	8.8E-7	
	Hazard Index		
All Lifetimes	Dose (person-rem)	1.4E-1	
	Cancer Fatalities	6.8E-5	
	Cancer Incidence	2.3E-4	
	Genetic Effects	1.4E-5	
	Hazard Index		
WM Workers	Dose (FTE-rem)	3.3E2	
	Cancer Fatalities	1.3E-1	
	Cancer Incidence	4.7E-1	
	Genetic Effects	2.0E-2	
	Exposure Index		
	Operation Fatalities		1.2E-2
	Operation Injuries		5.2
	Construction Fatalities		4.2E-2
	Construction Injuries		3.6E1

Table 3.1–286. Risks Associated With Disposing LLW at ORNL Under the Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 22)	Dose (person-rem)	9.3E-3	
	Cancer Fatalities	4.6E-6	
	Cancer Incidence	1.6E-5	
	Genetic Effects	9.3E-7	
	Hazard Index		
All Lifetimes	Dose (person-rem)	1.3E-1	
	Cancer Fatalities	6.3E-5	
	Cancer Incidence	2.1E-4	
	Genetic Effects	1.3E-5	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.2E2	
	Cancer Fatalities	4.7E-2	
	Cancer Incidence	1.7E-1	
	Genetic Effects	7.1E-3	
	Exposure Index		
	Operation Fatalities		8.4E-2
	Operation Injuries		3.7E1
	Construction Fatalities		6.6E-2
	Construction Injuries		5.6E1

Table 3.1–287. Risks Associated With Disposing LLW at Pantex Under the Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	3.4	
	Cancer Fatalities	1.4E-3	
	Cancer Incidence	4.7E-3	
	Genetic Effects	2.0E-4	
	Exposure Index		
	Operation Fatalities		1.4E-2
	Operation Injuries		6.0
	Construction Fatalities		4.8E-2
	Construction Injuries		4.1E1

Table 3.1-288. Risks Associated With Disposing LLW at PGDP Under the Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 42)	Dose (person-rem)	1.0	
	Cancer Fatalities	5.0E-4	
	Cancer Incidence	1.7E-3	
	Genetic Effects	1.0E-4	
	Hazard Index		
All Lifetimes	Dose (person-rem)	1.6E1	
	Cancer Fatalities	8.1E-3	
	Cancer Incidence	2.8E-2	
	Genetic Effects	1.6E-3	
	Hazard Index		
WM Workers	Dose (FTE-rem)	6.9	
	Cancer Fatalities	2.8E-3	
	Cancer Incidence	9.7E-3	
	Genetic Effects	4.2E-4	
	Exposure Index		
	Operation Fatalities		7.1E-2
	Operation Injuries		3.1E1
	Construction Fatalities		5.9E-2
	Construction Injuries		5.0E1

Table 3.1–289. Risks Associated With Disposing LLW at Ports Under the Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 145)	Dose (person-rem)	6.9E-3	
	Cancer Fatalities	3.5E-6	
	Cancer Incidence	1.2E-5	
	Genetic Effects	6.9E-7	
	Hazard Index		
All Lifetimes	Dose (person-rem)	2.6E-1	
	Cancer Fatalities	1.3E-4	
	Cancer Incidence	4.5E-4	
	Genetic Effects	2.6E-5	
	Hazard Index		
WM Workers	Dose (FTE-rem)	6.6E1	
	Cancer Fatalities	2.7E-2	
	Cancer Incidence	9.3E-2	
	Genetic Effects	4.0E-3	
	Exposure Index		
	Operation Fatalities		1.8E-1
	Operation Injuries		7.8E1
	Construction Fatalities		1.1E-1
	Construction Injuries		9.6E1

Table 3.1-290. Risks Associated With Disposing LLW at RFETS Under the Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 38)	Dose (person-rem)	6.5E-4	
	Cancer Fatalities	3.2E-7	
	Cancer Incidence	1.1E-6	
	Genetic Effects	6.5E-8	
	Hazard Index		
All Lifetimes	Dose (person-rem)	1.2E-2	
	Cancer Fatalities	6.2E-6	
	Cancer Incidence	2.1E-5	
	Genetic Effects	1.2E-6	
	Hazard Index		
WM Workers	Dose (FTE-rem)	4.0	
	Cancer Fatalities	1.6E-3	
	Cancer Incidence	5.6E-3	
	Genetic Effects	2.4E-4	
	Exposure Index		
	Operation Fatalities		3.1E-2
	Operation Injuries		1.4E1
	Construction Fatalities		3.5E-2
	Construction Injuries		3.0E1

Table 3.1–291. Risks Associated With Disposing LLW at SRS Under the Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 153)	Dose (person-rem)	2.9E-1	
	Cancer Fatalities	1.4E-4	
	Cancer Incidence	4.9E-4	
	Genetic Effects	2.9E-5	
	Hazard Index		
All Lifetimes	Dose (person-rem)	4.2	
	Cancer Fatalities	2.1E-3	
	Cancer Incidence	7.2E-3	
	Genetic Effects	4.2E-4	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.4E3	
	Cancer Fatalities	5.7E-1	
	Cancer Incidence	2.0	
	Genetic Effects	8.5E-2	
	Exposure Index		
	Operation Fatalities		2.5
	Operation Injuries		1.1E3
	Construction Fatalities		5.0E-1
	Construction Injuries		4.3E2

Table 3.1–292. Risks Associated With Disposing LLW at Hanford Under the Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 18)	Dose (person-rem)	2.0	
	Cancer Fatalities	1.0E-3	
	Cancer Incidence	3.4E-3	
	Genetic Effects	2.0E-4	
	Hazard Index		
All Lifetimes	Dose (person-rem)	2.8E1	
	Cancer Fatalities	1.4E-2	
	Cancer Incidence	4.7E-2	
	Genetic Effects	2.8E-3	
	Hazard Index		
WM Workers	Dose (FTE-rem)	9.3E2	
	Cancer Fatalities	3.7E-1	
	Cancer Incidence	1.3	
	Genetic Effects	5.6E-2	
	Exposure Index		
	Operation Fatalities		4.0E-2
	Operation Injuries		1.8E1
	Construction Fatalities		1.4E-1
	Construction Injuries		1.2E2

Table 3.1–293. Risks Associated With Disposing LLW at INEL Under the Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.0E3	
	Cancer Fatalities	4.2E-1	
	Cancer Incidence	1.5	
	Genetic Effects	6.3E-2	
	Exposure Index		
	Operation Fatalities		5.8E-2
	Operation Injuries		2.5E1
	Construction Fatalities		1.9E-1
	Construction Injuries		1.6E2

Table 3.1-294. Risks Associated With Disposing LLW at LANL Under the Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.9E3	
	Cancer Fatalities	7.8E-1	
	Cancer Incidence	2.7	
	Genetic Effects	1.2E-1	
	Exposure Index		
	Operation Fatalities		1.2E-1
	Operation Injuries		5.1E1
	Construction Fatalities		3.0E-1
	Construction Injuries		2.5E2

Table 3.1–295. Risks Associated With Disposing LLW at NTS Under the Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	4.1E2	
	Cancer Fatalities	1.6E-1	
	Cancer Incidence	5.7E-1	
	Genetic Effects	2.5E-2	
	Exposure Index		
	Operation Fatalities		1.1E-2
	Operation Injuries		4.8
	Construction Fatalities		5.6E-2
	Construction Injuries		4.7E1

Table 3.1–296. Risks Associated With Disposing LLW at ORNL Under the Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 22)	Dose (person-rem)	2.4E-1	
	Cancer Fatalities	1.2E-4	
	Cancer Incidence	4.2E-4	
	Genetic Effects	2.4E-5	
	Hazard Index		
All Lifetimes	Dose (person-rem)	3.0	
	Cancer Fatalities	1.5E-3	
	Cancer Incidence	5.2E-3	
	Genetic Effects	3.0E-4	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.3E2	
	Cancer Fatalities	5.1E-2	
	Cancer Incidence	1.8E-1	
	Genetic Effects	7.7E-3	
	Exposure Index		
	Operation Fatalities		5.1E-1
	Operation Injuries		2.2E2
	Construction Fatalities		3.2E-1
	Construction Injuries		2.7E2

Table 3.1–297. Risks Associated With Disposing LLW at SRS Under the Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 153)	Dose (person-rem)	2.4E-1	
	Cancer Fatalities	1.2E-4	
	Cancer Incidence	4.1E-4	
	Genetic Effects	2.4E-5	
	Hazard Index		
All Lifetimes	Dose (person-rem)	3.5	
	Cancer Fatalities	1.8E-3	
	Cancer Incidence	6.0E-3	
	Genetic Effects	3.5E-4	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.5E3	
	Cancer Fatalities	5.8E-1	
	Cancer Incidence	2.0	
	Genetic Effects	8.7E-2	
	Exposure Index		
	Operation Fatalities		2.9
	Operation Injuries		1.3E3
	Construction Fatalities		5.8E-1
	Construction Injuries		4.9E2

Table 3.1-298. Risks Associated With Disposing LLW at Hanford Under the Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 18)	Dose (person-rem)	2.7E1	
	Cancer Fatalities	1.4E-2	
	Cancer Incidence	4.6E-2	
	Genetic Effects	2.7E-3	
	Hazard Index		
All Lifetimes	Dose (person-rem)	3.6E2	
	Cancer Fatalities	1.8E-1	
	Cancer Incidence	6.1E-1	
	Genetic Effects	3.6E-2	
	Hazard Index		
WM Workers	Dose (FTE-rem)	7.8E2	
	Cancer Fatalities	3.1E-1	
	Cancer Incidence	1.1	
	Genetic Effects	4.7E-2	
	Exposure Index		
	Operation Fatalities		1.9E-2
	Operation Injuries		8.2
	Construction Fatalities		9.8E-2
	Construction Injuries		8.3E1

Table 3.1–299. Risks Associated With Disposing LLW at INEL Under the Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	8.6E2	
	Cancer Fatalities	3.5E-1	
	Cancer Incidence	1.2	
	Genetic Effects	5.2E-2	
	Exposure Index		
	Operation Fatalities		2.6E-2
	Operation Injuries		1.2E1
	Construction Fatalities		1.2E-1
	Construction Injuries		1.0E2

Table 3.1-300. Risks Associated With Disposing LLW at LANL Under the Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.0E3	
	Cancer Fatalities	4.0E-1	
	Cancer Incidence	1.4	
	Genetic Effects	6.0E-2	
	Exposure Index		
	Operation Fatalities		4.9E-2
	Operation Injuries		2.1E1
	Construction Fatalities		1.4E-1
	Construction Injuries		1.2E2

Table 3.1–301. Risks Associated With Disposing LLW at ORNL Under the Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 22)	Dose (person-rem)	5.6E-1	
	Cancer Fatalities	2.8E-4	
	Cancer Incidence	9.6E-4	
	Genetic Effects	5.6E-5	
	Hazard Index		
All Lifetimes	Dose (person-rem)	7.0	
	Cancer Fatalities	3.5E-3	
	Cancer Incidence	1.2E-2	
	Genetic Effects	7.0E-4	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.2E2	
	Cancer Fatalities	4.9E-2	
	Cancer Incidence	1.7E-1	
	Genetic Effects	7.4E-3	
	Exposure Index		
	Operation Fatalities		2.6E-1
	Operation Injuries		1.1E2
	Construction Fatalities		1.6E-1
	Construction Injuries		1.4E2

Table 3.1–302. Risks Associated With Disposing LLW at NTS Under the Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	2.8E2	
	Cancer Fatalities	1.1E-1	
	Cancer Incidence	3.9E-1	
	Genetic Effects	1.7E-2	
	Exposure Index		
	Operation Fatalities		7.7E-3
	Operation Injuries		3.3
	Construction Fatalities		4.1E-2
	Construction Injuries		3.5E1

Table 3.1–303. Risks Associated With Disposing LLW at SRS Under the Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 153)	Dose (person-rem)	2.9E-1	
	Cancer Fatalities	1.4E-4	
	Cancer Incidence	4.9E-4	
	Genetic Effects	2.9E-5	
	Hazard Index		
All Lifetimes	Dose (person-rem)	4.2	
	Cancer Fatalities	2.1E-3	
	Cancer Incidence	7.2E-3	
	Genetic Effects	4.2E-4	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.4E3	
	Cancer Fatalities	5.7E-1	
	Cancer Incidence	2.0	
	Genetic Effects	8.5E-2	
	Exposure Index		
	Operation Fatalities		2.5
	Operation Injuries		1.1E3
	Construction Fatalities		5.0E-1
	Construction Injuries		4.3E2

Table 3.1-304. Risks Associated With Disposing LLW at Hanford Under the Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 18)	Dose (person-rem)	2.7E1	
	Cancer Fatalities	1.4E-2	
	Cancer Incidence	4.6E-2	
	Genetic Effects	2.7E-3	
	Hazard Index		
All Lifetimes	Dose (person-rem)	3.6E2	
	Cancer Fatalities	1.8E-1	
	Cancer Incidence	6.1E-1	
	Genetic Effects	3.6E-2	
	Hazard Index		
WM Workers	Dose (FTE-rem)	7.8E2	
	Cancer Fatalities	3.1E-1	
	Cancer Incidence	1.1	
	Genetic Effects	4.7E-2	
	Exposure Index		
	Operation Fatalities		1.9E-2
	Operation Injuries		8.2
	Construction Fatalities		9.8E-2
	Construction Injuries		8.3E1

Table 3.1–305. Risks Associated With Disposing LLW at INEL Under the Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	9.0E2	
	Cancer Fatalities	3.6E-1	
	Cancer Incidence	1.3	
	Genetic Effects	5.4E-2	
	Exposure Index		
	Operation Fatalities		3.2E-2
	Operation Injuries		1.4E1
	Construction Fatalities		1.3E-1
	Construction Injuries		1.1E2

Table 3.1–306. Risks Associated With Disposing LLW at LANL Under the Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	9.6E2	
	Cancer Fatalities	3.9E-1	
	Cancer Incidence	1.4	
	Genetic Effects	5.8E-2	
	Exposure Index		
	Operation Fatalities		4.7E-2
	Operation Injuries		2.0E1
	Construction Fatalities		1.4E-1
	Construction Injuries		1.2E2

Table 3.1-307. Risks Associated With Disposing LLW at ORNL Under the Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 22)	Dose (person-rem)	5.6E-1	
	Cancer Fatalities	2.8E-4	
	Cancer Incidence	9.6E-4	
	Genetic Effects	5.6E-5	
	Hazard Index		
All Lifetimes	Dose (person-rem)	7.0	
	Cancer Fatalities	3.5E-3	
	Cancer Incidence	1.2E-2	
	Genetic Effects	7.0E-4	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.2E2	
	Cancer Fatalities	4.9E-2	
	Cancer Incidence	1.7E-1	
	Genetic Effects	7.4E-3	
	Exposure Index		
	Operation Fatalities		2.6E-1
	Operation Injuries		1.1E2
	Construction Fatalities		1.6E-1
	Construction Injuries		1.3E2

Table 3.1–308. Risks Associated With Disposing LLW at NTS Under the Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	2.8E2	
	Cancer Fatalities	1.1E-1	
	Cancer Incidence	3.9E-1	
	Genetic Effects	1.7E-2	
	Exposure Index		
	Operation Fatalities		7.7E-3
	Operation Injuries		3.3
	Construction Fatalities		4.1E-2
	Construction Injuries		3.5E1

Table 3.1–309. Risks Associated With Disposing LLW at SRS Under the Regionalized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 153)	Dose (person-rem)	2.9E-1	
	Cancer Fatalities	1.4E-4	
	Cancer Incidence	4.9E-4	
	Genetic Effects	2.9E-5	
	Hazard Index		
All Lifetimes	Dose (person-rem)	4.2	
	Cancer Fatalities	2.1E-3	
	Cancer Incidence	7.2E-3	
	Genetic Effects	4.2E-4	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.4E3	
	Cancer Fatalities	5.7E-1	
	Cancer Incidence	2.0	
	Genetic Effects	8.5E-2	
	Exposure Index		
	Operation Fatalities		2.5
	Operation Injuries		1.1E3
	Construction Fatalities		5.0E-1
	Construction Injuries		4.3E2

Table 3.1–310. Risks Associated With Disposing LLW at Hanford Under the Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 18)	Dose (person-rem)	3.3E1	
	Cancer Fatalities	1.6E-2	
	Cancer Incidence	5.5E-2	
	Genetic Effects	3.3E-3	
	Hazard Index		
All Lifetimes	Dose (person-rem)	4.3E2	
	Cancer Fatalities	2.1E-1	
	Cancer Incidence	7.3E-1	
	Genetic Effects	4.3E-2	
	Hazard Index		
WM Workers	Dose (FTE-rem)	2.9E3	
	Cancer Fatalities	1.2	
	Cancer Incidence	4.0	
	Genetic Effects	1.7E-1	
	Exposure Index		
	Operation Fatalities		1.7E-1
	Operation Injuries		7.3E1
	Construction Fatalities		4.4E-1
	Construction Injuries		3.7E2

Table 3.1–311. Risks Associated With Disposing LLW at SRS Under the Regionalized Alternative 6

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 23)	Dose (person-rem)	3.4E-1	
	Cancer Fatalities	1.7E-4	
	Cancer Incidence	5.9E-4	
	Genetic Effects	3.4E-5	
	Hazard Index		
All Lifetimes	Dose (person-rem)	3.7	
	Cancer Fatalities	1.8E-3	
	Cancer Incidence	6.3E-3	
	Genetic Effects	3.7E-4	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.5E3	
	Cancer Fatalities	6.1E-1	
	Cancer Incidence	2.1	
	Genetic Effects	9.1E-2	
	Exposure Index		
	Operation Fatalities		4.9
	Operation Injuries		2.1E3
	Construction Fatalities		8.9E-1
	Construction Injuries		7.6E2

Table 3.1–312. Risks Associated With Disposing LLW at NTS Under the Regionalized Alternative 7

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	2.9E3	
	Cancer Fatalities	1.2	
	Cancer Incidence	4.1	
	Genetic Effects	1.7E-1	
	Exposure Index		
	Operation Fatalities		1.2E-1
	Operation Injuries		5.2E1
	Construction Fatalities		4.4E-1
	Construction Injuries		3.7E2

Table 3.1–313. Risks Associated With Disposing LLW at SRS Under the Regionalized Alternative 7

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 23)	Dose (person-rem)	3.4E-1	
	Cancer Fatalities	1.7E-4	
	Cancer Incidence	5.9E-4	
	Genetic Effects	3.4E-5	
	Hazard Index		
All Lifetimes	Dose (person-rem)	3.7	
	Cancer Fatalities	1.8E-3	
	Cancer Incidence	6.3E-3	
	Genetic Effects	3.7E-4	
	Hazard Index		
WM Workers	Dose (FTE-rem)	1.5E3	
	Cancer Fatalities	6.1E-1	
	Cancer Incidence	2.1	
	Genetic Effects	9.1E-2	
	Exposure Index		
	Operation Fatalities		4.9
	Operation Injuries		2.1E3
	Construction Fatalities		8.9E-1
	Construction Injuries		7.6E2

Table 3.1–314. Risks Associated With Disposing LLW at Hanford Under the Centralized Alternative 1

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 18)	Dose (person-rem)	9.6	
	Cancer Fatalities	4.8E-3	
	Cancer Incidence	1.6E-2	
	Genetic Effects	9.6E-4	
	Hazard Index		
All Lifetimes	Dose (person-rem)	1.3E2	
	Cancer Fatalities	6.4E-2	
	Cancer Incidence	2.2E-1	
	Genetic Effects	1.3E-2	
	Hazard Index		
WM Workers	Dose (FTE-rem)	6.9E3	
	Cancer Fatalities	2.8	
	Cancer Incidence	9.7	
	Genetic Effects	4.2E-1	
	Exposure Index		
	Operation Fatalities		4.0E-1
	Operation Injuries		1.7E2
	Construction Fatalities		9.6E-1
	Construction Injuries		8.1E2

Table 3.1–315. Risks Associated With Disposing LLW at NTS Under the Centralized Alternative 2

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	6.9E3	
	Cancer Fatalities	2.8	
	Cancer Incidence	9.7	
	Genetic Effects	4.2E-1	
	Exposure Index		
	Operation Fatalities		3.7E-1
	Operation Injuries		1.6E2
	Construction Fatalities		9.6E-1
	Construction Injuries		8.1E2

Table 3.1–316. Risks Associated With Disposing LLW at Hanford Under the Centralized Alternative 3

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 18)	Dose (person-rem)	1.8E1	
	Cancer Fatalities	9.2E-3	
	Cancer Incidence	3.1E-2	
	Genetic Effects	1.8E-3	
	Hazard Index		
All Lifetimes	Dose (person-rem)	2.5E2	
	Cancer Fatalities	1.2E-1	
	Cancer Incidence	4.2E-1	
	Genetic Effects	2.5E-2	
	Hazard Index		
WM Workers	Dose (FTE-rem)	4.4E3	
	Cancer Fatalities	1.8	
	Cancer Incidence	6.2	
	Genetic Effects	2.7E-1	
	Exposure Index		
	Operation Fatalities		2.5E-1
	Operation Injuries		1.1E2
	Construction Fatalities		6.3E-1
	Construction Injuries		5.4E2

Table 3.1–317. Risks Associated With Disposing LLW at NTS Under the Centralized Alternative 4

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
All Lifetimes	Dose (person-rem)	0.00	
	Cancer Fatalities	0.00	
	Cancer Incidence	0.00	
	Genetic Effects	0.00	
	Hazard Index		
WM Workers	Dose (FTE-rem)	4.4E3	
	Cancer Fatalities	1.8	
	Cancer Incidence	6.2	
	Genetic Effects	2.7E-1	
	Exposure Index		
	Operation Fatalities		2.2E-1
	Operation Injuries		9.6E1
	Construction Fatalities		6.3E-1
	Construction Injuries		5.4E2

Table 3.1–318. Risks Associated With Disposing LLW at Hanford Under the Centralized Alternative 5

Receptor	Endpoint	Radionuclides	Physical Hazards
Most-Exposed Farm Family (Lifetime 18)	Dose (person-rem)	1.8E1	
	Cancer Fatalities	9.2E-3	
	Cancer Incidence	3.1E-2	
	Genetic Effects	1.8E-3	
	Hazard Index		
All Lifetimes	Dose (person-rem)	2.5E2	
	Cancer Fatalities	1.2E-1	
	Cancer Incidence	4.2E-1	
	Genetic Effects	2.5E-2	
	Hazard Index		
WM Workers	Dose (FTE-rem)	4.4E3	
	Cancer Fatalities	1.8	
	Cancer Incidence	6.2	
	Genetic Effects	2.6E-1	
	Exposure Index		
	Operation Fatalities		2.5E-1
	Operation Injuries		1.1E2
	Construction Fatalities		6.3E-1
	Construction Injuries		5.3E2

4. HAZARDOUS WASTE

4.1 Results of the PEIS Risk Evaluation for Routine HW Management Alternatives

The following sites were evaluated under the PEIS waste management alternatives for HW:

- Argonne National Laboratory-East (ANL-E), Argonne, Illinois
- Hanford Site, (Hanford), Richland, Washington
- Fermi National Accelerator Laboratory (Fermi), Batavia, Illinois
- Idaho National Engineering Laboratory (INEL), Idaho Falls, Idaho
- Kansas City Plant (KCP), Kansas City, Missouri
- Los Alamos National Laboratory (LANL), Los Alamos, New Mexico
- Lawrence Livermore National Laboratory (LLNL), Livermore, California
- Oak Ridge Reservation (ORR), Oak Ridge, Tennessee
- Pantex Plant (Pantex), Amarillo, Texas
- Sandia National Laboratories-New Mexico (SNL-NM), Albuquerque, New Mexico
- Savannah River Site (SRS), Aiken, South Carolina

Three alternatives for the management of HW were analyzed for human health risks:

- No Action
- Regionalized 1
- Regionalized 2

These alternatives are discussed in detail in the PEIS.

Tables 4.1-1 through 4.1-12 present the supplemental results of the PEIS human health risk evaluation for HW.

Table 4.1-1. Risks Associated with Routine Management of HW at INEL Under the No Action Alternative

Receptor	Endpoint	Hazardous Chemicals		Physical Hazards
		Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	4.4E-5		
Noninvolved Worker MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	3.7E-8	2.5E-4	
Offsite Population 153061	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	3.4E-5		
Offsite MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	4.6E-9	3.2E-5	
WM Workers 16	Dose (FTE-rem) Cancer Fatalities Cancer Incidence Genetic Effects Exposure Index Construction Fatalities Construction Injuries Operation Fatalities Operation Injuries	1.8E-2	2.1	6.1E-4 2.6E-1 2.0E-3 1.7

Table 4.1-2. Risks Associated with Routine Management of HW at ORNL Under the No Action Alternative

Receptor	Endpoint	Hazardous Chemicals		Physical Hazards
		Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3809	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	2.5E-3		
Noninvolved Worker MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	2.4E-6	1.6E-2	
Offsite Population 881652	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	7.4E-3		
Offsite MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	3.9E-7	2.6E-3	
WM Workers 36	Dose (FTE-rem) Cancer Fatalities Cancer Incidence Genetic Effects Exposure Index Construction Fatalities Construction Injuries Operation Fatalities Operation Injuries	7.6E-2	4.3	1.3E-3 5.8E-1 4.3E-3 3.7

Table 4.1-3. Risks Associated with Routine Management of HW at LANL Under the Decentralization Alternative

Receptor	Endpoint	Hazardous Chemicals		Physical Hazards
		Carcinogens	Noncarcinogens	
Noninvolved Worker Population 11552	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	2.3E-3		
Noninvolved Worker MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	1.4E-6	1.9E-2	
Offsite Population 159152	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	4.6E-3		
Offsite MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	5.7E-7	7.6E-3	
WM Workers 33	Dose (FTE-rem) Cancer Fatalities Cancer Incidence Genetic Effects Exposure Index Construction Fatalities Construction Injuries Operation Fatalities Operation Injuries	6.8E-2	4.8	2.4E-3 1.1 4.0E-3 3.4

Table 4.1-4. Risks Associated with Routine Management of HW at ORNL Under the Decentralization Alternative

Receptor	Endpoint	Hazardous Chemicals		Physical Hazards
		Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3809	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	3.5E-3		
Noninvolved Worker MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	3.3E-6	4.4E-2	
Offsite Population 881652	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	1.0E-2		
Offsite MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	5.4E-7	7.2E-3	
WM Workers 43	Dose (FTE-rem) Cancer Fatalities Cancer Incidence Genetic Effects Exposure Index Construction Fatalities Construction Injuries Operation Fatalities Operation Injuries	1.0E-1	5.3	3.2E-3 1.4 5.2E-3 4.4

Table 4.1–5. Risks Associated with Routine Management of HW at SRS Under the Decentralization Alternative

Receptor	Endpoint	Hazardous Chemicals		Physical Hazards
		Carcinogens	Noncarcinogens	
Noninvolved Worker Population 15996	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	6.5E-4		
Noninvolved Worker MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	7.4E-7	9.9E-3	
Offsite Population 620618	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	1.3E-3		
Offsite MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	1.7E-8	2.2E-4	
WM Workers 43	Dose (FTE-rem) Cancer Fatalities Cancer Incidence Genetic Effects Exposure Index Construction Fatalities Construction Injuries Operation Fatalities Operation Injuries	1.0E-1	5.3	3.2E-3 1.4 5.2E-3 4.4

Table 4.1-6. Risks Associated with Routine Management of HW at Hanford Under Regionalized Alternative 1

Receptor	Endpoint	Hazardous Chemicals		Physical Hazards
		Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8674	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	2.6E-3		
Noninvolved Worker MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	5.0E-6	6.7E-2	
Offsite Population 377645	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	4.3E-3		
Offsite MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	1.4E-7	1.9E-3	
WM Workers 91	Dose (FTE-rem) Cancer Fatalities Cancer Incidence Genetic Effects Exposure Index Construction Fatalities Construction Injuries Operation Fatalities Operation Injuries	2.9E-1	5.9	6.8E-3 3.0 1.1E-2 9.4

Table 4.1-7. Risks Associated with Routine Management of HW at INEL Under Regionalized Alternative 1

Receptor	Endpoint	Hazardous Chemicals		Physical Hazards
		Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	1.4E-4		
Noninvolved Worker MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	1.1E-7	1.5E-3	
Offsite Population 153061	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	1.0E-4		
Offsite MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	1.4E-8	1.9E-4	
WM Workers 35	Dose (FTE-rem) Cancer Fatalities Cancer Incidence Genetic Effects Exposure Index Construction Fatalities Construction Injuries Operation Fatalities Operation Injuries	7.6E-2	4.8	2.6E-3 1.1 4.2E-3 3.6

Table 4.1-8. Risks Associated with Routine Management of HW at LANL Under Regionalized Alternative 1

Receptor	Endpoint	Hazardous Chemicals		Physical Hazards
		Carcinogens	Noncarcinogens	
Noninvolved Worker Population 11552	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	9.5E-3		
Noninvolved Worker MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	5.9E-6	7.9E-2	
Offsite Population 159152	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	1.9E-2		
Offsite MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	2.4E-6	3.2E-2	
WM Workers 88	Dose (FTE-rem) Cancer Fatalities Cancer Incidence Genetic Effects Exposure Index Construction Fatalities Construction Injuries Operation Fatalities Operation Injuries	3.0E-1	6.1	6.5E-3 2.9 1.1E-2 9.0

Table 4.1–9. Risks Associated with Routine Management of HW at ORNL Under Regionalized Alternative 1

Receptor	Endpoint	Hazardous Chemicals		Physical Hazards
		Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3809	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	1.2E-2		
Noninvolved Worker MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	1.1E-5	1.5E-1	
Offsite Population 881652	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	3.6E-2		
Offsite MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	1.8E-6	2.5E-2	
WM Workers 101	Dose (FTE-rem) Cancer Fatalities Cancer Incidence Genetic Effects Exposure Index Construction Fatalities Construction Injuries Operation Fatalities Operation Injuries	4.2E-1	6.1	7.5E-3 3.3 1.2E-2 1.0E1

Table 4.1–10. Risks Associated with Routine Management of HW at SRS Under Regionalized Alternative 1

Receptor	Endpoint	Hazardous Chemicals		Physical Hazards
		Carcinogens	Noncarcinogens	
Noninvolved Worker Population 15996	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	5.9E-4		
Noninvolved Worker MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	6.7E-7	9.0E-3	
Offsite Population 620618	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	1.2E-3		
Offsite MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	1.5E-8	2.0E-4	
WM Workers 40	Dose (FTE-rem) Cancer Fatalities Cancer Incidence Genetic Effects Exposure Index Construction Fatalities Construction Injuries Operation Fatalities Operation Injuries	9.3E-2	5.2	3.0E-3 1.3 4.9E-3 4.2

Table 4.1-11. Risks Associated with Routine Management of HW at INEL Under Regionalized Alternative 2

Receptor	Endpoint	Hazardous Chemicals		Physical Hazards
		Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	1.3E-3		
Noninvolved Worker MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	1.1E-6	1.4E-2	
Offsite Population 153061	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	9.7E-4		
Offsite MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	1.3E-7	1.8E-3	
WM Workers 160	Dose (FTE-rem) Cancer Fatalities Cancer Incidence Genetic Effects Exposure Index Construction Fatalities Construction Injuries Operation Fatalities Operation Injuries	7.4E-1	6.2	1.2E-2 5.2 1.9E-2 1.7E1

Table 4.1-12. Risks Associated with Routine Management of HW at ORNL Under Regionalized Alternative 2

Receptor	Endpoint	Hazardous Chemicals		Physical Hazards
		Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3809	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	3.2E-2		
Noninvolved Worker MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	3.1E-5	4.1E-1	
Offsite Population 881652	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	9.5E-2		
Offsite MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	5.0E-6	6.6E-2	
WM Workers 212	Dose (FTE-rem) Cancer Fatalities Cancer Incidence Genetic Effects Exposure Index Construction Fatalities Construction Injuries Operation Fatalities Operation Injuries	1.1	6.2	1.6E-2 6.9 2.6E-2 2.2E1

5. TRANSURANIC WASTE

5.1 Results of the PEIS Risk Evaluation for Routine TRUW Management Alternatives

The following sites were evaluated under the PEIS waste management alternatives for TRUW:

- Argonne National Laboratory-East (ANL-E), Argonne, Illinois
- Argonne National Laboratory-West (ANL-W), Idaho Falls, Idaho
- Energy Technology Engineering Center (ETEC), Canoga Park, California
- Hanford Site (Hanford), Richland, Washington
- Idaho National Engineering Laboratory (INEL), Idaho Falls, Idaho
- Inhalation Toxicology Research Institute (ITRI), Albuquerque, New Mexico
- Lawrence Berkeley Laboratory (LBL), Berkeley, California
- Lawrence Livermore National Laboratory (LLNL), Livermore, California
- Los Alamos National Laboratory (LANL), Los Alamos, New Mexico
- Mound Plant (Mound), Miamisburg, Ohio
- Nevada Test Site (NTS), Las Vegas, Nevada
- Oak Ridge National Laboratory (ORNL), Oak Ridge, Tennessee
- Paducah Gaseous Diffusion Plant (PGDP), Paducah, Kentucky
- Rocky Flats Environmental Technology Site (RFETS), Golden, Colorado
- Sandia National Laboratories-New Mexico (SNL-NM), Albuquerque, New Mexico
- Sandia National Laboratory-California (SNL-CA), Livermore, California
- Savannah River Site (SRS), Aiken, South Carolina
- University of Missouri at Columbia (U of Mo), Columbia, Missouri
- West Valley Demonstration Project (WVDP), West Valley, New York

Six alternatives for the management of contact-handled TRUW (CH-TRUW) were analyzed for human health risks:

• No Action	• Regionalized 1
• Decentralized	• Regionalized 2

- Regionalized 3
- Centralized

In addition, four alternatives for the management of remote-handled TRUW (RH-TRUW) were analyzed:

- No Action
- Decentralized
- Regionalized
- Regionalized/Centralized

Note that the risks associated with CH- and RH-TRUW management were combined as follows: the risks for the CH- and RH-TRUW No Action Alternatives were summed, as were the risks for the CH- and RH-TRUW Decentralized Alternative; the risks for the Regionalized RH-TRUW Alternative were added to the CH-TRUW risks for Regionalized Alternative 1; and the risks for the fourth RH-TRUW Alternative were added to the CH-TRUW Regionalized 2, Regionalized 3, and Centralized alternatives.

Tables 5.1-1 through 5.1-94 present the supplemental results of the PEIS human health risk evaluation for TRUW.

Table 5.1-1. Risks Associated with Routine Management of CH-TRUW at ANL-E Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 5571	Dose (person-rem)	5.7E-6			
	Cancer Fatalities	2.9E-9			
	Cancer Incidence	9.7E-9	1.2E-12		
	Genetic Effects	5.7E-10			
Noninvolved Worker MEI	Dose (rem)	5.7E-9			
	Cancer Fatalities	2.9E-12			
	Cancer Incidence	9.7E-12	0.00		
	Genetic Effects	5.7E-13			
	Hazard Index			1.9E-12	
Offsite Population 7939785	Dose (person-rem)	1.1E-3			
	Cancer Fatalities	5.5E-7			
	Cancer Incidence	1.9E-6	5.5E-11		
	Genetic Effects	1.1E-7			
Offsite MEI	Dose (rem)	6.1E-9			
	Cancer Fatalities	3.1E-12			
	Cancer Incidence	1.0E-11	0.00		
	Genetic Effects	6.1E-13			
	Hazard Index			6.2E-13	
WM Workers 106	Dose (FTE-rem)	2.4E-3			
	Cancer Fatalities	9.5E-7			
	Cancer Incidence	3.3E-6	2.8E-10		
	Genetic Effects	1.4E-7			
	Exposure Index			7.3E-9	
	Construction Fatalities				9.0E-3
	Construction Injuries				3.9
	Operation Fatalities				1.3E-2
	Operation Injuries				1.1E1

Table 5.1–2. Risks Associated with Routine Management of CH-TRUW at Hanford Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8674	Dose (person-rem)	3.4E-5			
	Cancer Fatalities	1.7E-8			
	Cancer Incidence	5.8E-8	7.5E-12		
	Genetic Effects	3.4E-9			
Noninvolved Worker MEI	Dose (rem)	5.9E-8			
	Cancer Fatalities	3.0E-11			
	Cancer Incidence	1.0E-10	1.5E-14		
	Genetic Effects	5.9E-12			
	Hazard Index			2.0E-11	
Offsite Population 377645	Dose (person-rem)	7.1E-4			
	Cancer Fatalities	3.5E-7			
	Cancer Incidence	1.2E-6	1.3E-11		
	Genetic Effects	7.1E-8			
Offsite MEI	Dose (rem)	1.5E-8			
	Cancer Fatalities	7.2E-12			
	Cancer Incidence	2.5E-11	0.00		
	Genetic Effects	1.5E-12			
	Hazard Index			5.7E-13	
WM Workers 404	Dose (FTE-rem)	1.8E1			
	Cancer Fatalities	7.0E-3			
	Cancer Incidence	2.5E-2	1.7E-8		
	Genetic Effects	1.1E-3			
	Exposure Index			1.4E-7	
	Construction Fatalities				3.3E-2
	Construction Injuries				1.5E1
	Operation Fatalities				4.9E-2
	Operation Injuries				4.2E1

Table 5.1-3. Risks Associated with Routine Management of CH-TRUW at INEL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem)	1.6E-6			
	Cancer Fatalities	7.8E-10			
	Cancer Incidence	2.7E-9	2.1E-12		
	Genetic Effects	1.6E-10			
Noninvolved Worker MEI	Dose (rem)	1.3E-9			
	Cancer Fatalities	6.7E-13			
	Cancer Incidence	2.3E-12	0.00		
	Genetic Effects	1.3E-13			
	Hazard Index			1.4E-13	
Offsite Population 153061	Dose (person-rem)	5.2E-6			
	Cancer Fatalities	2.6E-9			
	Cancer Incidence	8.9E-9	1.6E-12		
	Genetic Effects	5.2E-10			
Offsite MEI	Dose (rem)	6.5E-10			
	Cancer Fatalities	3.3E-13			
	Cancer Incidence	1.1E-12	0.00		
	Genetic Effects	6.5E-14			
	Hazard Index			1.8E-14	
WM Workers 55	Dose (FTE-rem)	2.7E-3			
	Cancer Fatalities	1.1E-6			
	Cancer Incidence	3.8E-6	3.5E-9		
	Genetic Effects	1.6E-7			
	Exposure Index			9.3E-8	
	Construction Fatalities				4.7E-3
	Construction Injuries				2.1
	Operation Fatalities				6.6E-3
	Operation Injuries				5.6

Table 5.1–4. Risks Associated with Routine Management of CH-TRUW at LANL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 11552	Dose (person-rem)	7.6E-4			
	Cancer Fatalities	3.8E-7			
	Cancer Incidence	1.3E-6	1.1E-11		
	Genetic Effects	7.6E-8			
Noninvolved Worker MEI	Dose (rem)	5.7E-7			
	Cancer Fatalities	2.8E-10			
	Cancer Incidence	9.7E-10	0.00		
	Genetic Effects	5.7E-11			
	Hazard Index			1.1E-11	
Offsite Population 159152	Dose (person-rem)	8.3E-3			
	Cancer Fatalities	4.1E-6			
	Cancer Incidence	1.4E-5	2.3E-11		
	Genetic Effects	8.3E-7			
Offsite MEI	Dose (rem)	8.7E-7			
	Cancer Fatalities	4.4E-10			
	Cancer Incidence	1.5E-9	0.00		
	Genetic Effects	8.7E-11			
	Hazard Index			4.2E-12	
WM Workers 257	Dose (FTE-rem)	8.6E-1			
	Cancer Fatalities	3.5E-4			
	Cancer Incidence	1.2E-3	4.9E-9		
	Genetic Effects	5.2E-5			
	Exposure Index			6.1E-8	
	Construction Fatalities				2.2E-2
	Construction Injuries				9.6
	Operation Fatalities				3.1E-2
	Operation Injuries				2.6E1

Table 5.1-5. Risks Associated with Routine Management of CH-TRUW at LBL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3940	Dose (person-rem)	6.6E-9			
	Cancer Fatalities	3.3E-12			
	Cancer Incidence	1.1E-11	0.00		
	Genetic Effects	6.6E-13			
Noninvolved Worker MEI	Dose (rem)	5.2E-12			
	Cancer Fatalities	0.00			
	Cancer Incidence	9.0E-15	0.00		
	Genetic Effects	0.00			
	Hazard Index			0.00	
Offsite Population 1586829	Dose (person-rem)	9.7E-7			
	Cancer Fatalities	4.8E-10			
	Cancer Incidence	1.7E-9	9.5E-14		
	Genetic Effects	9.7E-11			
Offsite MEI	Dose (rem)	1.5E-11			
	Cancer Fatalities	7.0E-15			
	Cancer Incidence	2.5E-14	0.00		
	Genetic Effects	0.00			
	Hazard Index			0.00	
WM Workers 0	Dose (FTE-rem)	2.3E-9			
	Cancer Fatalities	9.2E-13			
	Cancer Incidence	3.2E-12	0.00		
	Genetic Effects	1.4E-13			
	Exposure Index			7.1E-12	
	Construction Fatalities				1.3E-5
	Construction Injuries				5.9E-3
	Operation Fatalities				2.0E-5
	Operation Injuries				1.7E-2

Table 5.1-6. Risks Associated with Routine Management of CH-TRUW at LLNL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 9504	Dose (person-rem)	1.1E-4			
	Cancer Fatalities	5.3E-8			
	Cancer Incidence	1.8E-7	3.4E-9		
	Genetic Effects	1.1E-8			
Noninvolved Worker MEI	Dose (rem)	3.6E-8			
	Cancer Fatalities	1.8E-11			
	Cancer Incidence	6.1E-11	9.9E-13		
	Genetic Effects	3.6E-12			
	Hazard Index			8.2E-11	
Offsite Population 6324234	Dose (person-rem)	2.2E-3			
	Cancer Fatalities	1.1E-6			
	Cancer Incidence	3.7E-6	1.4E-8		
	Genetic Effects	2.2E-7			
Offsite MEI	Dose (rem)	3.6E-8			
	Cancer Fatalities	1.8E-11			
	Cancer Incidence	6.0E-11	3.1E-13		
	Genetic Effects	3.6E-12			
	Hazard Index			2.6E-11	
WM Workers 148	Dose (FTE-rem)	1.8E-2			
	Cancer Fatalities	7.1E-6			
	Cancer Incidence	2.5E-5	2.6E-7		
	Genetic Effects	1.1E-6			
	Exposure Index			2.6E-6	
	Construction Fatalities				1.3E-2
	Construction Injuries				5.5
	Operation Fatalities				1.8E-2
	Operation Injuries				1.5E1

Table 5.1-7. Risks Associated with Routine Management of CH-TRUW at Mound Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1688	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
Noninvolved Worker MEI	Dose (rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
	Hazard Index			0.00	
Offsite Population 3032983	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
Offsite MEI	Dose (rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
	Hazard Index			0.00	
WM Workers 0	Dose (FTE-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
	Exposure Index			0.00	
	Construction Fatalities				0.00
	Construction Injuries				0.00
	Operation Fatalities				0.00
	Operation Injuries				0.00

Table 5.1–8. Risks Associated with Routine Management of CH-TRUW at NTS Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3756	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
Noninvolved Worker MEI	Dose (rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
	Hazard Index			0.00	
Offsite Population 14266	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
Offsite MEI	Dose (rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
	Hazard Index			0.00	
WM Workers 0	Dose (FTE-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
	Exposure Index			0.00	
	Construction Fatalities				0.00
	Construction Injuries				0.00
	Operation Fatalities				0.00
	Operation Injuries				0.00

Table 5.1–9. Risks Associated with Routine Management of CH-TRUW at PGDP Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1952	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
Noninvolved Worker MEI	Dose (rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
	Hazard Index			0.00	
Offsite Population 500502	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
Offsite MEI	Dose (rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
	Hazard Index			0.00	
WM Workers 0	Dose (FTE-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
	Exposure Index			0.00	
	Construction Fatalities				0.00
	Construction Injuries				0.00
	Operation Fatalities				0.00
	Operation Injuries				0.00

Table 5.1–10. Risks Associated with Routine Management of CH-TRUW at RFETS Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 6993	Dose (person-rem)	3.1E-4			
	Cancer Fatalities	1.5E-7			
	Cancer Incidence	5.2E-7	2.1E-11		
	Genetic Effects	3.1E-8			
Noninvolved Worker MEI	Dose (rem)	1.8E-7			
	Cancer Fatalities	9.2E-11			
	Cancer Incidence	3.1E-10	1.1E-14		
	Genetic Effects	1.8E-11			
	Hazard Index			2.7E-10	
Offsite Population 2171877	Dose (person-rem)	6.0E-3			
	Cancer Fatalities	3.0E-6			
	Cancer Incidence	1.0E-5	1.0E-10		
	Genetic Effects	6.0E-7			
Offsite MEI	Dose (rem)	8.2E-8			
	Cancer Fatalities	4.1E-11			
	Cancer Incidence	1.4E-10	0.00		
	Genetic Effects	8.2E-12			
	Hazard Index			2.1E-11	
WM Workers 353	Dose (FTE-rem)	2.1E-1			
	Cancer Fatalities	8.2E-5			
	Cancer Incidence	2.9E-4	4.0E-9		
	Genetic Effects	1.2E-5			
	Exposure Index			5.3E-7	
	Construction Fatalities				3.0E-2
	Construction Injuries				1.3E1
	Operation Fatalities				4.3E-2
	Operation Injuries				3.6E1

Table 5.1–11. Risks Associated with Routine Management of CH-TRUW at SNL–NM Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 10576	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
Noninvolved Worker MEI	Dose (rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
	Hazard Index			0.00	
Offsite Population 610714	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
Offsite MEI	Dose (rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
	Hazard Index			0.00	
WM Workers 0	Dose (FTE-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
	Exposure Index			0.00	
	Construction Fatalities				0.00
	Construction Injuries				0.00
	Operation Fatalities				0.00
	Operation Injuries				0.00

Table 5.1-12. Risks Associated with Routine Management of CH-TRUW at SRS Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 15996	Dose (person-rem)	3.0E-3			
	Cancer Fatalities	1.5E-6			
	Cancer Incidence	5.0E-6	6.7E-11		
	Genetic Effects	3.0E-7			
Noninvolved Worker MEI	Dose (rem)	2.6E-6			
	Cancer Fatalities	1.3E-9			
	Cancer Incidence	4.4E-9	7.7E-14		
	Genetic Effects	2.6E-10			
	Hazard Index			5.1E-12	
Offsite Population 620618	Dose (person-rem)	2.8E-2			
	Cancer Fatalities	1.4E-5			
	Cancer Incidence	4.7E-5	1.3E-10		
	Genetic Effects	2.8E-6			
Offsite MEI	Dose (rem)	2.6E-7			
	Cancer Fatalities	1.3E-10			
	Cancer Incidence	4.4E-10	0.00		
	Genetic Effects	2.6E-11			
	Hazard Index			1.1E-13	
WM Workers 367	Dose (FTE-rem)	5.3			
	Cancer Fatalities	2.1E-3			
	Cancer Incidence	7.4E-3	9.2E-8		
	Genetic Effects	3.2E-4			
	Exposure Index			4.5E-7	
	Construction Fatalities				3.0E-2
	Construction Injuries				1.3E1
	Operation Fatalities				4.4E-2
	Operation Injuries				3.8E1

Table 5.1–13. Risks Associated with Routine Management of CH-TRUW at ANL-E Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 5571	Dose (person-rem)	1.9E-5			
	Cancer Fatalities	9.3E-9			
	Cancer Incidence	3.2E-8	9.2E-12		
	Genetic Effects	1.9E-9			
Noninvolved Worker MEI	Dose (rem)	1.9E-8			
	Cancer Fatalities	9.3E-12			
	Cancer Incidence	3.2E-11	8.0E-15		
	Genetic Effects	1.9E-12			
	Hazard Index			1.5E-11	
Offsite Population 7939785	Dose (person-rem)	3.6E-3			
	Cancer Fatalities	1.8E-6			
	Cancer Incidence	6.1E-6	4.4E-10		
	Genetic Effects	3.6E-7			
Offsite MEI	Dose (rem)	2.0E-8			
	Cancer Fatalities	9.9E-12			
	Cancer Incidence	3.4E-11	0.00		
	Genetic Effects	2.0E-12			
	Hazard Index			5.0E-12	
WM Workers 275	Dose (FTE-rem)	2.2E1			
	Cancer Fatalities	8.6E-3			
	Cancer Incidence	3.0E-2	1.4E-9		
	Genetic Effects	1.3E-3			
	Exposure Index			1.4E-8	
	Construction Fatalities				6.1E-2
	Construction Injuries				2.6E1
	Operation Fatalities				3.3E-2
	Operation Injuries				2.8E1

Table 5.1-14. Risks Associated with Routine Management of CH-TRUW at Hanford Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8674	Dose (person-rem)	1.4E-4	6.0E-11		
	Cancer Fatalities	6.9E-8			
	Cancer Incidence	2.3E-7			
	Genetic Effects	1.4E-8			
Noninvolved Worker MEI	Dose (rem)	2.4E-7	1.2E-13	1.6E-10	
	Cancer Fatalities	1.2E-10			
	Cancer Incidence	4.0E-10			
	Genetic Effects	2.4E-11			
	Hazard Index				
Offsite Population 377645	Dose (person-rem)	2.8E-3	1.0E-10		
	Cancer Fatalities	1.4E-6			
	Cancer Incidence	4.8E-6			
	Genetic Effects	2.8E-7			
Offsite MEI	Dose (rem)	5.8E-8	0.00	4.5E-12	
	Cancer Fatalities	2.9E-11			
	Cancer Incidence	9.9E-11			
	Genetic Effects	5.8E-12			
	Hazard Index				
WM Workers 715	Dose (FTE-rem)	2.6E2	2.5E-8	3.6E-7	1.4E-1
	Cancer Fatalities	1.0E-1			
	Cancer Incidence	3.6E-1			
	Genetic Effects	1.5E-2			
	Exposure Index				
	Construction Fatalities				6.2E1
	Construction Injuries				8.7E-2
	Operation Fatalities				7.4E1
	Operation Injuries				

Table 5.1-15. Risks Associated with Routine Management of CH-TRUW at INEL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem)	6.7E-4			
	Cancer Fatalities	3.4E-7			
	Cancer Incidence	1.2E-6	3.0E-9		
	Genetic Effects	6.7E-8			
Noninvolved Worker MEI	Dose (rem)	5.8E-7			
	Cancer Fatalities	2.9E-10			
	Cancer Incidence	9.8E-10	2.5E-12		
	Genetic Effects	5.8E-11			
	Hazard Index			1.5E-10	
Offsite Population 153061	Dose (person-rem)	2.3E-3			
	Cancer Fatalities	1.1E-6			
	Cancer Incidence	3.8E-6	2.3E-9		
	Genetic Effects	2.3E-7			
Offsite MEI	Dose (rem)	2.8E-7			
	Cancer Fatalities	1.4E-10			
	Cancer Incidence	4.8E-10	3.2E-13		
	Genetic Effects	2.8E-11			
	Hazard Index			1.8E-11	
WM Workers 2303	Dose (FTE-rem)	6.2E2			
	Cancer Fatalities	2.5E-1			
	Cancer Incidence	8.7E-1	9.2E-6		
	Genetic Effects	3.7E-2			
	Exposure Index			3.1E-5	
	Construction Fatalities				4.8E-1
	Construction Injuries				2.1E2
	Operation Fatalities				2.8E-1
	Operation Injuries				2.4E2

Table 5.1-16. Risks Associated with Routine Management of CH-TRUW at LANL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 11552	Dose (person-rem)	9.8E-3			
	Cancer Fatalities	4.9E-6			
	Cancer Incidence	1.7E-5	3.4E-10		
	Genetic Effects	9.8E-7			
Noninvolved Worker MEI	Dose (rem)	7.4E-6			
	Cancer Fatalities	3.7E-9			
	Cancer Incidence	1.3E-8	2.1E-13		
	Genetic Effects	7.4E-10			
	Hazard Index			3.0E-10	
Offsite Population 159152	Dose (person-rem)	1.1E-1			
	Cancer Fatalities	5.4E-5			
	Cancer Incidence	1.8E-4	6.8E-10		
	Genetic Effects	1.1E-5			
Offsite MEI	Dose (rem)	1.1E-5			
	Cancer Fatalities	5.7E-9			
	Cancer Incidence	1.9E-8	8.3E-14		
	Genetic Effects	1.1E-9			
	Hazard Index			1.2E-10	
WM Workers 1064	Dose (FTE-rem)	3.6E2			
	Cancer Fatalities	1.4E-1			
	Cancer Incidence	5.0E-1	3.5E-8		
	Genetic Effects	2.1E-2			
	Exposure Index			4.6E-7	
	Construction Fatalities				2.2E-1
	Construction Injuries				9.8E1
	Operation Fatalities				1.3E-1
	Operation Injuries				1.1E2

Table 5.1-17. Risks Associated with Routine Management of CH-TRUW at LBL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3940	Dose (person-rem)	8.5E-8			
	Cancer Fatalities	4.3E-11			
	Cancer Incidence	1.4E-10	1.5E-13		
	Genetic Effects	8.5E-12			
Noninvolved Worker MEI	Dose (rem)	6.8E-11			
	Cancer Fatalities	3.4E-14			
	Cancer Incidence	1.2E-13	0.00		
	Genetic Effects	0.00			
	Hazard Index			1.5E-14	
Offsite Population 1586829	Dose (person-rem)	1.3E-5			
	Cancer Fatalities	6.3E-9			
	Cancer Incidence	2.1E-8	3.8E-12		
	Genetic Effects	1.3E-9			
Offsite MEI	Dose (rem)	1.9E-10			
	Cancer Fatalities	9.4E-14			
	Cancer Incidence	3.2E-13	0.00		
	Genetic Effects	1.9E-14			
	Hazard Index			1.1E-14	
WM Workers 1	Dose (FTE-rem)	5.4E-6			
	Cancer Fatalities	2.2E-9			
	Cancer Incidence	7.6E-9	2.5E-14		
	Genetic Effects	3.2E-10			
	Exposure Index			7.1E-11	
	Construction Fatalities				8.2E-3
	Construction Injuries				3.6
	Operation Fatalities				1.4E-4
	Operation Injuries				1.2E1

Table 5.1-18. Risks Associated with Routine Management of CH-TRUW at LLNL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 9504	Dose (person-rem)	3.4E-4			
	Cancer Fatalities	1.7E-7			
	Cancer Incidence	5.8E-7	3.0E-8		
	Genetic Effects	3.4E-8			
Noninvolved Worker MEI	Dose (rem)	1.2E-7			
	Cancer Fatalities	5.7E-11			
	Cancer Incidence	2.0E-10	8.9E-12		
	Genetic Effects	1.2E-11			
	Hazard Index			4.8E-10	
Offsite Population 6324234	Dose (person-rem)	6.9E-3			
	Cancer Fatalities	3.5E-6			
	Cancer Incidence	1.2E-5	1.3E-7		
	Genetic Effects	6.9E-7			
Offsite MEI	Dose (rem)	1.1E-7			
	Cancer Fatalities	5.7E-11			
	Cancer Incidence	1.9E-10	2.8E-12		
	Genetic Effects	1.1E-11			
	Hazard Index			1.5E-10	
WM Workers 354	Dose (FTE-rem)	1.4			
	Cancer Fatalities	5.6E-4			
	Cancer Incidence	2.0E-3	8.8E-7		
	Genetic Effects	8.4E-5			
	Exposure Index			5.8E-6	
	Construction Fatalities				7.1E-2
	Construction Injuries				3.1E1
	Operation Fatalities				4.3E-2
	Operation Injuries				3.6E1

Table 5.1-19. Risks Associated with Routine Management of CH-TRUW at Mound Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1688	Dose (person-rem)	1.4E-5	1.5E-12		
	Cancer Fatalities	7.2E-9			
	Cancer Incidence	2.5E-8			
	Genetic Effects	1.4E-9			
Noninvolved Worker MEI	Dose (rem)	2.3E-8	0.00	2.7E-12	
	Cancer Fatalities	1.1E-11			
	Cancer Incidence	3.9E-11			
	Genetic Effects	2.3E-12			
	Hazard Index				
Offsite Population 3032983	Dose (person-rem)	1.7E-3	5.6E-11		
	Cancer Fatalities	8.4E-7			
	Cancer Incidence	2.9E-6			
	Genetic Effects	1.7E-7			
Offsite MEI	Dose (rem)	9.6E-8	0.00	2.7E-12	
	Cancer Fatalities	4.8E-11			
	Cancer Incidence	1.6E-10			
	Genetic Effects	9.6E-12			
	Hazard Index				
WM Workers 84	Dose (FTE-rem)	3.4E-1	4.8E-11	3.3E-9	2.2E-2 9.5 1.0E-2 8.6
	Cancer Fatalities	1.4E-4			
	Cancer Incidence	4.8E-4			
	Genetic Effects	2.1E-5			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 5.1-20. Risks Associated with Routine Management of CH-TRUW at NTS Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3756	Dose (person-rem)	6.4E-7			
	Cancer Fatalities	3.2E-10			
	Cancer Incidence	1.1E-9	5.1E-12		
	Genetic Effects	6.4E-11			
Noninvolved Worker MEI	Dose (rem)	2.9E-9			
	Cancer Fatalities	1.5E-12			
	Cancer Incidence	5.0E-12	2.1E-14		
	Genetic Effects	2.9E-13			
	Hazard Index			3.0E-11	
Offsite Population 14266	Dose (person-rem)	2.3E-7			
	Cancer Fatalities	1.1E-10			
	Cancer Incidence	3.9E-10	3.8E-13		
	Genetic Effects	2.3E-11			
Offsite MEI	Dose (rem)	5.9E-11			
	Cancer Fatalities	3.0E-14			
	Cancer Incidence	1.0E-13	0.00		
	Genetic Effects	0.00			
	Hazard Index			1.4E-13	
WM Workers 204	Dose (FTE-rem)	5.2E-1			
	Cancer Fatalities	2.1E-4			
	Cancer Incidence	7.3E-4	8.8E-10		
	Genetic Effects	3.1E-5			
	Exposure Index			3.2E-8	
	Construction Fatalities				4.3E-2
	Construction Injuries				1.9E1
	Operation Fatalities				2.5E-2
	Operation Injuries				2.1E1

Table 5.1-21. Risks Associated with Routine Management of CH-TRUW at ORNL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3809	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
Noninvolved Worker MEI	Dose (rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
	Hazard Index			0.00	
Offsite Population 881652	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
Offsite MEI	Dose (rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
	Hazard Index			0.00	
WM Workers 2	Dose (FTE-rem)	5.6E-11			
	Cancer Fatalities	2.3E-14			
	Cancer Incidence	7.9E-14	0.00		
	Genetic Effects	0.00			
	Exposure Index			0.00	
	Construction Fatalities				2.3E-4
	Construction Injuries				9.8E-2
	Operation Fatalities				2.5E-4
	Operation Injuries				2.1E-1

Table 5.1-22. Risks Associated with Routine Management of CH-TRUW at PGDP Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1952	Dose (person-rem)	5.4E-7			
	Cancer Fatalities	2.7E-10			
	Cancer Incidence	9.2E-10	1.9E-13		
	Genetic Effects	5.4E-11			
Noninvolved Worker MEI	Dose (rem)	6.7E-10			
	Cancer Fatalities	3.3E-13			
	Cancer Incidence	1.1E-12	0.00		
	Genetic Effects	6.7E-14			
	Hazard Index			4.7E-13	
Offsite Population 500502	Dose (person-rem)	7.0E-6			
	Cancer Fatalities	3.5E-9			
	Cancer Incidence	1.2E-8	3.6E-13		
	Genetic Effects	7.0E-10			
Offsite MEI	Dose (rem)	7.8E-10			
	Cancer Fatalities	3.9E-13			
	Cancer Incidence	1.3E-12	0.00		
	Genetic Effects	7.8E-14			
	Hazard Index			8.0E-14	
WM Workers 15	Dose (FTE-rem)	1.2E-3			
	Cancer Fatalities	4.6E-7			
	Cancer Incidence	1.6E-6	9.6E-13		
	Genetic Effects	6.9E-8			
	Exposure Index			2.6E-10	
	Construction Fatalities				1.1E-2
	Construction Injuries				4.7
	Operation Fatalities				1.8E-3
	Operation Injuries				1.6

Table 5.1-23. Risks Associated with Routine Management of CH-TRUW at RFETS Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 6993	Dose (person-rem)	9.4E-4			
	Cancer Fatalities	4.7E-7			
	Cancer Incidence	1.6E-6	9.6E-11		
	Genetic Effects	9.4E-8			
Noninvolved Worker MEI	Dose (rem)	5.7E-7			
	Cancer Fatalities	2.8E-10			
	Cancer Incidence	9.7E-10	4.9E-14		
	Genetic Effects	5.7E-11			
	Hazard Index			1.4E-9	
Offsite Population 2171877	Dose (person-rem)	1.9E-2			
	Cancer Fatalities	9.3E-6			
	Cancer Incidence	3.2E-5	4.8E-10		
	Genetic Effects	1.9E-6			
Offsite MEI	Dose (rem)	2.5E-7			
	Cancer Fatalities	1.3E-10			
	Cancer Incidence	4.3E-10	0.00		
	Genetic Effects	2.5E-11			
	Hazard Index			1.1E-10	
WM Workers 664	Dose (FTE-rem)	1.9E1			
	Cancer Fatalities	7.7E-3			
	Cancer Incidence	2.7E-2	6.8E-9		
	Genetic Effects	1.2E-3			
	Exposure Index			1.3E-6	
	Construction Fatalities				1.3E-1
	Construction Injuries				5.7E1
	Operation Fatalities				8.0E-2
	Operation Injuries				6.8E1

Table 5.1-24. Risks Associated with Routine Management of CH-TRUW at SNL-NM Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 10576	Dose (person-rem)	1.2E-7			
	Cancer Fatalities	6.0E-11			
	Cancer Incidence	2.0E-10	5.8E-14		
	Genetic Effects	1.2E-11			
Noninvolved Worker MEI	Dose (rem)	5.0E-11			
	Cancer Fatalities	2.5E-14			
	Cancer Incidence	8.5E-14	0.00		
	Genetic Effects	0.00			
	Hazard Index			3.2E-14	
Offsite Population 610714	Dose (person-rem)	5.3E-6			
	Cancer Fatalities	2.7E-9			
	Cancer Incidence	9.1E-9	5.2E-13		
	Genetic Effects	5.3E-10			
Offsite MEI	Dose (rem)	2.1E-10			
	Cancer Fatalities	1.1E-13			
	Cancer Incidence	3.6E-13	0.00		
	Genetic Effects	2.1E-14			
	Hazard Index			3.2E-14	
WM Workers 2	Dose (FTE-rem)	1.5E-5			
	Cancer Fatalities	5.9E-9			
	Cancer Incidence	2.1E-8	1.5E-14		
	Genetic Effects	8.9E-10			
	Exposure Index			5.0E-11	
	Construction Fatalities				8.4E-3
	Construction Injuries				3.7
	Operation Fatalities				2.6E-4
	Operation Injuries				2.2E-1

Table 5.1-25. Risks Associated with Routine Management of CH-TRUW at SRS Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 15996	Dose (person-rem)	1.1E-2			
	Cancer Fatalities	5.4E-6			
	Cancer Incidence	1.9E-5	3.5E-10		
	Genetic Effects	1.1E-6			
Noninvolved Worker MEI	Dose (rem)	9.5E-6			
	Cancer Fatalities	4.8E-9			
	Cancer Incidence	1.6E-8	4.0E-13		
	Genetic Effects	9.5E-10			
	Hazard Index			5.1E-11	
Offsite Population 620618	Dose (person-rem)	1.0E-1			
	Cancer Fatalities	5.1E-5			
	Cancer Incidence	1.7E-4	7.0E-10		
	Genetic Effects	1.0E-5			
Offsite MEI	Dose (rem)	9.5E-7			
	Cancer Fatalities	4.8E-10			
	Cancer Incidence	1.6E-9	9.0E-15		
	Genetic Effects	9.5E-11			
	Hazard Index			1.1E-12	
WM Workers 790	Dose (FTE-rem)	2.2E2			
	Cancer Fatalities	8.8E-2			
	Cancer Incidence	3.1E-1	2.1E-7		
	Genetic Effects	1.3E-2			
	Exposure Index			1.3E-6	
	Construction Fatalities				1.6E-1
	Construction Injuries				7.1E1
	Operation Fatalities				9.6E-2
	Operation Injuries				8.1E1

Table 5.1–26. Risks Associated with Routine Management of CH-TRUW at ANL-E Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 5571	Dose (person-rem)	1.6E-5			
	Cancer Fatalities	8.0E-9			
	Cancer Incidence	2.7E-8	1.6E-11		
	Genetic Effects	1.6E-9			
Noninvolved Worker MEI	Dose (rem)	1.6E-8			
	Cancer Fatalities	8.0E-12			
	Cancer Incidence	2.7E-11	1.4E-14		
	Genetic Effects	1.6E-12			
	Hazard Index			2.5E-11	
Offsite Population 7939785	Dose (person-rem)	3.1E-3			
	Cancer Fatalities	1.5E-6			
	Cancer Incidence	5.2E-6	7.5E-10		
	Genetic Effects	3.1E-7			
Offsite MEI	Dose (rem)	1.7E-8			
	Cancer Fatalities	8.5E-12			
	Cancer Incidence	2.9E-11	0.00		
	Genetic Effects	1.7E-12			
	Hazard Index			8.4E-12	
WM Workers 121	Dose (FTE-rem)	2.2E1			
	Cancer Fatalities	8.6E-3			
	Cancer Incidence	3.0E-2	1.7E-9		
	Genetic Effects	1.3E-3			
	Exposure Index			5.3E-8	
	Construction Fatalities				2.2E-2
	Construction Injuries				9.6
	Operation Fatalities				1.5E-2
	Operation Injuries				1.2E1

Table 5.1-27. Risks Associated with Routine Management of CH-TRUW at Hanford Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8674	Dose (person-rem)	2.2E-4			
	Cancer Fatalities	1.1E-7			
	Cancer Incidence	3.8E-7	2.1E-9		
	Genetic Effects	2.2E-8			
Noninvolved Worker MEI	Dose (rem)	3.8E-7			
	Cancer Fatalities	1.9E-10			
	Cancer Incidence	6.5E-10	4.1E-12		
	Genetic Effects	3.8E-11			
	Hazard Index			6.5E-10	
Offsite Population 377645	Dose (person-rem)	4.5E-3			
	Cancer Fatalities	2.3E-6			
	Cancer Incidence	7.7E-6	3.5E-9		
	Genetic Effects	4.5E-7			
Offsite MEI	Dose (rem)	9.4E-8			
	Cancer Fatalities	4.7E-11			
	Cancer Incidence	1.6E-10	1.2E-13		
	Genetic Effects	9.4E-12			
	Hazard Index			1.9E-11	
WM Workers 1232	Dose (FTE-rem)	3.2E2			
	Cancer Fatalities	1.3E-1			
	Cancer Incidence	4.5E-1	1.4E-6		
	Genetic Effects	1.9E-2			
	Exposure Index			6.1E-6	
	Construction Fatalities				2.5E-1
	Construction Injuries				1.1E2
	Operation Fatalities				1.5E-1
	Operation Injuries				1.3E2

Table 5.1–28. Risks Associated with Routine Management of CH-TRUW at INEL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem)	8.6E-4			
	Cancer Fatalities	4.3E-7			
	Cancer Incidence	1.5E-6	3.1E-9		
	Genetic Effects	8.6E-8			
Noninvolved Worker MEI	Dose (rem)	7.3E-7			
	Cancer Fatalities	3.7E-10			
	Cancer Incidence	1.2E-9	2.6E-12		
	Genetic Effects	7.3E-11			
	Hazard Index			2.0E-10	
Offsite Population 153061	Dose (person-rem)	2.9E-3			
	Cancer Fatalities	1.4E-6			
	Cancer Incidence	4.9E-6	2.3E-9		
	Genetic Effects	2.9E-7			
Offsite MEI	Dose (rem)	3.6E-7			
	Cancer Fatalities	1.8E-10			
	Cancer Incidence	6.0E-10	3.2E-13		
	Genetic Effects	3.6E-11			
	Hazard Index			2.5E-11	
WM Workers 3100	Dose (FTE-rem)	6.2E2			
	Cancer Fatalities	2.5E-1			
	Cancer Incidence	8.7E-1	1.5E-5		
	Genetic Effects	3.7E-2			
	Exposure Index			3.1E-5	
	Construction Fatalities				6.1E-1
	Construction Injuries				2.7E2
	Operation Fatalities				3.8E-1
	Operation Injuries				3.2E2

Table 5.1-29. Risks Associated with Routine Management of CH-TRUW at LANL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 11552	Dose (person-rem)	1.2E-2			
	Cancer Fatalities	6.0E-6			
	Cancer Incidence	2.0E-5	4.6E-10		
	Genetic Effects	1.2E-6			
Noninvolved Worker MEI	Dose (rem)	9.0E-6			
	Cancer Fatalities	4.5E-9			
	Cancer Incidence	1.5E-8	2.9E-13		
	Genetic Effects	9.0E-10			
	Hazard Index			4.1E-10	
Offsite Population 159152	Dose (person-rem)	1.3E-1			
	Cancer Fatalities	6.5E-5			
	Cancer Incidence	2.2E-4	9.3E-10		
	Genetic Effects	1.3E-5			
Offsite MEI	Dose (rem)	1.4E-5			
	Cancer Fatalities	6.9E-9			
	Cancer Incidence	2.3E-8	1.2E-13		
	Genetic Effects	1.4E-9			
	Hazard Index			1.6E-10	
WM Workers 1502	Dose (FTE-rem)	3.6E2			
	Cancer Fatalities	1.4E-1			
	Cancer Incidence	5.0E-1	1.5E-7		
	Genetic Effects	2.1E-2			
	Exposure Index			4.5E-7	
	Construction Fatalities				3.2E-1
	Construction Injuries				1.4E2
	Operation Fatalities				1.8E-1
	Operation Injuries				1.5E2

Table 5.1-30. Risks Associated with Routine Management of CH-TRUW at LBL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3940	Dose (person-rem)	1.3E-7			
	Cancer Fatalities	6.7E-11			
	Cancer Incidence	2.3E-10	4.0E-13		
	Genetic Effects	1.3E-11			
Noninvolved Worker MEI	Dose (rem)	1.1E-10			
	Cancer Fatalities	5.3E-14			
	Cancer Incidence	1.8E-13	0.00		
	Genetic Effects	1.1E-14			
	Hazard Index			3.9E-14	
Offsite Population 1586829	Dose (person-rem)	2.0E-5			
	Cancer Fatalities	9.8E-9			
	Cancer Incidence	3.3E-8	1.0E-11		
	Genetic Effects	2.0E-9			
Offsite MEI	Dose (rem)	2.9E-10			
	Cancer Fatalities	1.5E-13			
	Cancer Incidence	5.0E-13	0.00		
	Genetic Effects	2.9E-14			
	Hazard Index			2.9E-14	
WM Workers 1	Dose (FTE-rem)	5.4E-6			
	Cancer Fatalities	2.1E-9			
	Cancer Incidence	7.5E-9	8.9E-14		
	Genetic Effects	3.2E-10			
	Exposure Index			3.9E-10	
	Construction Fatalities				1.1E-4
	Construction Injuries				4.7E-2
	Operation Fatalities				7.1E-5
	Operation Injuries				6.1E-2

Table 5.1-31. Risks Associated with Routine Management of CH-TRUW at LLNL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 9504	Dose (person-rem)	3.6E-4			
	Cancer Fatalities	1.8E-7			
	Cancer Incidence	6.1E-7	5.2E-8		
	Genetic Effects	3.6E-8			
Noninvolved Worker MEI	Dose (rem)	1.2E-7			
	Cancer Fatalities	6.0E-11			
	Cancer Incidence	2.1E-10	1.5E-11		
	Genetic Effects	1.2E-11			
	Hazard Index			6.9E-10	
Offsite Population 6324234	Dose (person-rem)	7.3E-3			
	Cancer Fatalities	3.6E-6			
	Cancer Incidence	1.2E-5	2.2E-7		
	Genetic Effects	7.3E-7			
Offsite MEI	Dose (rem)	1.2E-7			
	Cancer Fatalities	5.9E-11			
	Cancer Incidence	2.0E-10	4.8E-12		
	Genetic Effects	1.2E-11			
	Hazard Index			2.2E-10	
WM Workers 186	Dose (FTE-rem)	1.4			
	Cancer Fatalities	5.7E-4			
	Cancer Incidence	2.0E-3	1.9E-6		
	Genetic Effects	8.6E-5			
	Exposure Index			2.1E-5	
	Construction Fatalities				3.4E-2
	Construction Injuries				1.5E1
	Operation Fatalities				2.3E-2
	Operation Injuries				1.9E1

Table 5.1–32. Risks Associated with Routine Management of CH-TRUW at Mound Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1688	Dose (person-rem)	2.6E-5			
	Cancer Fatalities	1.3E-8			
	Cancer Incidence	4.4E-8	4.4E-12		
	Genetic Effects	2.6E-9			
Noninvolved Worker MEI	Dose (rem)	4.1E-8			
	Cancer Fatalities	2.0E-11			
	Cancer Incidence	6.9E-11	0.00		
	Genetic Effects	4.1E-12			
	Hazard Index			7.7E-12	
Offsite Population 3032983	Dose (person-rem)	3.0E-3			
	Cancer Fatalities	1.5E-6			
	Cancer Incidence	5.1E-6	1.6E-10		
	Genetic Effects	3.0E-7			
Offsite MEI	Dose (rem)	1.7E-7			
	Cancer Fatalities	8.6E-11			
	Cancer Incidence	2.9E-10	0.00		
	Genetic Effects	1.7E-11			
	Hazard Index			7.7E-12	
WM Workers 47	Dose (FTE-rem)	3.3E-1			
	Cancer Fatalities	1.3E-4			
	Cancer Incidence	4.7E-4	2.1E-10		
	Genetic Effects	2.0E-5			
	Exposure Index			2.0E-8	
	Construction Fatalities				8.6E-3
	Construction Injuries				3.7
	Operation Fatalities				5.7E-3
	Operation Injuries				4.8

Table 5.1-33. Risks Associated with Routine Management of CH-TRUW at NTS Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3756	Dose (person-rem)	8.5E-7			
	Cancer Fatalities	4.2E-10			
	Cancer Incidence	1.4E-9	1.5E-11		
	Genetic Effects	8.5E-11			
Noninvolved Worker MEI	Dose (rem)	3.9E-9			
	Cancer Fatalities	1.9E-12			
	Cancer Incidence	6.6E-12	6.2E-14		
	Genetic Effects	3.9E-13			
	Hazard Index			8.2E-11	
Offsite Population 14266	Dose (person-rem)	3.0E-7			
	Cancer Fatalities	1.5E-10			
	Cancer Incidence	5.1E-10	1.1E-12		
	Genetic Effects	3.0E-11			
Offsite MEI	Dose (rem)	7.8E-11			
	Cancer Fatalities	3.9E-14			
	Cancer Incidence	1.3E-13	0.00		
	Genetic Effects	8.0E-15			
	Hazard Index			3.8E-13	
WM Workers 137	Dose (FTE-rem)	5.0E-1			
	Cancer Fatalities	2.0E-4			
	Cancer Incidence	7.0E-4	4.4E-9		
	Genetic Effects	3.0E-5			
	Exposure Index			1.8E-7	
	Construction Fatalities				2.5E-2
	Construction Injuries				1.1E1
	Operation Fatalities				1.7E-2
	Operation Injuries				1.4E1

Table 5.1–34. Risks Associated with Routine Management of CH-TRUW at PGDP Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1952	Dose (person-rem)	8.2E-7			
	Cancer Fatalities	4.1E-10			
	Cancer Incidence	1.4E-9	5.0E-13		
	Genetic Effects	8.2E-11			
Noninvolved Worker MEI	Dose (rem)	1.0E-9			
	Cancer Fatalities	5.0E-13			
	Cancer Incidence	1.7E-12	0.00		
	Genetic Effects	1.0E-13			
	Hazard Index			1.2E-12	
Offsite Population 500502	Dose (person-rem)	1.1E-5			
	Cancer Fatalities	5.3E-9			
	Cancer Incidence	1.8E-8	9.5E-13		
	Genetic Effects	1.1E-9			
Offsite MEI	Dose (rem)	1.2E-9			
	Cancer Fatalities	5.9E-13			
	Cancer Incidence	2.0E-12	0.00		
	Genetic Effects	1.2E-13			
	Hazard Index			2.1E-13	
WM Workers 8	Dose (FTE-rem)	1.2E-3			
	Cancer Fatalities	4.7E-7			
	Cancer Incidence	1.7E-6	2.9E-12		
	Genetic Effects	7.1E-8			
	Exposure Index			1.6E-9	
	Construction Fatalities				1.5E-3
	Construction Injuries				6.7E-1
	Operation Fatalities				1.0E-3
	Operation Injuries				8.6E-1

Table 5.1-35. Risks Associated with Routine Management of CH-TRUW at RFETS Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 6993	Dose (person-rem)	1.5E-3	1.3E-10		
	Cancer Fatalities	7.6E-7			
	Cancer Incidence	2.6E-6			
	Genetic Effects	1.5E-7			
Noninvolved Worker MEI	Dose (rem)	9.1E-7	6.5E-14	2.5E-9	
	Cancer Fatalities	4.6E-10			
	Cancer Incidence	1.6E-9			
	Genetic Effects	9.1E-11			
	Hazard Index				
Offsite Population 2171877	Dose (person-rem)	3.0E-2	6.3E-10		
	Cancer Fatalities	1.5E-5			
	Cancer Incidence	5.1E-5			
	Genetic Effects	3.0E-6			
Offsite MEI	Dose (rem)	4.0E-7	0.00	2.0E-10	
	Cancer Fatalities	2.0E-10			
	Cancer Incidence	6.9E-10			
	Genetic Effects	4.0E-11			
	Hazard Index				
WM Workers 989	Dose (FTE-rem)	1.9E1	2.1E-8	1.3E-6	2.1E-1 9.1E1 1.2E-1 1.0E2
	Cancer Fatalities	7.7E-3			
	Cancer Incidence	2.7E-2			
	Genetic Effects	1.2E-3			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 5.1–36. Risks Associated with Routine Management of CH-TRUW at SNL–NM Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 10576	Dose (person-rem)	1.6E-7			
	Cancer Fatalities	7.9E-11			
	Cancer Incidence	2.7E-10	1.7E-13		
	Genetic Effects	1.6E-11			
Noninvolved Worker MEI	Dose (rem)	6.6E-11			
	Cancer Fatalities	3.3E-14			
	Cancer Incidence	1.1E-13	0.00		
	Genetic Effects	0.00			
	Hazard Index			8.6E-14	
Offsite Population 610714	Dose (person-rem)	7.0E-6			
	Cancer Fatalities	3.5E-9			
	Cancer Incidence	1.2E-8	1.5E-12		
	Genetic Effects	7.0E-10			
Offsite MEI	Dose (rem)	2.8E-10			
	Cancer Fatalities	1.4E-13			
	Cancer Incidence	4.8E-13	0.00		
	Genetic Effects	2.8E-14			
	Hazard Index			8.6E-14	
WM Workers 1	Dose (FTE-rem)	1.5E-5			
	Cancer Fatalities	5.9E-9			
	Cancer Incidence	2.1E-8	7.5E-14		
	Genetic Effects	8.9E-10			
	Exposure Index			2.8E-10	
	Construction Fatalities				2.7E-4
	Construction Injuries				1.2E-1
	Operation Fatalities				1.8E-4
	Operation Injuries				1.5E-1

Table 5.1–37. Risks Associated with Routine Management of CH-TRUW at SRS Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 15996	Dose (person-rem)	1.8E-2			
	Cancer Fatalities	8.8E-6			
	Cancer Incidence	3.0E-5	5.1E-10		
	Genetic Effects	1.8E-6			
Noninvolved Worker MEI	Dose (rem)	1.5E-5			
	Cancer Fatalities	7.7E-9			
	Cancer Incidence	2.6E-8	5.8E-13		
	Genetic Effects	1.5E-9			
	Hazard Index			8.0E-11	
Offsite Population 620618	Dose (person-rem)	1.6E-1			
	Cancer Fatalities	8.1E-5			
	Cancer Incidence	2.8E-4	1.0E-9		
	Genetic Effects	1.6E-5			
Offsite MEI	Dose (rem)	1.5E-6			
	Cancer Fatalities	7.7E-10			
	Cancer Incidence	2.6E-9	1.3E-14		
	Genetic Effects	1.5E-10			
	Hazard Index			1.8E-12	
WM Workers 1115	Dose (FTE-rem)	2.2E2			
	Cancer Fatalities	9.0E-2			
	Cancer Incidence	3.1E-1	8.4E-7		
	Genetic Effects	1.4E-2			
	Exposure Index			1.3E-6	
	Construction Fatalities				2.4E-1
	Construction Injuries				1.0E2
	Operation Fatalities				1.4E-1
	Operation Injuries				1.2E2

Table 5.1–38. Risks Associated with Routine Management of CH-TRUW at ANL-E Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 5571	Dose (person-rem)	1.6E-5			
	Cancer Fatalities	8.0E-9			
	Cancer Incidence	2.7E-8	1.6E-11		
	Genetic Effects	1.6E-9			
Noninvolved Worker MEI	Dose (rem)	1.6E-8			
	Cancer Fatalities	8.0E-12			
	Cancer Incidence	2.7E-11	1.4E-14		
	Genetic Effects	1.6E-12			
	Hazard Index			2.5E-11	
Offsite Population 7939785	Dose (person-rem)	3.1E-3			
	Cancer Fatalities	1.5E-6			
	Cancer Incidence	5.2E-6	7.5E-10		
	Genetic Effects	3.1E-7			
Offsite MEI	Dose (rem)	1.7E-8			
	Cancer Fatalities	8.5E-12			
	Cancer Incidence	2.9E-11	0.00		
	Genetic Effects	1.7E-12			
	Hazard Index			8.4E-12	
WM Workers 121	Dose (FTE-rem)	2.2E1			
	Cancer Fatalities	8.6E-3			
	Cancer Incidence	3.0E-2	1.7E-9		
	Genetic Effects	1.3E-3			
	Exposure Index			5.3E-8	
	Construction Fatalities				2.2E-2
	Construction Injuries				9.6
	Operation Fatalities				1.5E-2
	Operation Injuries				1.2E1

Table 5.1-39. Risks Associated with Routine Management of CH-TRUW at Hanford Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8674	Dose (person-rem)	4.5E-1			
	Cancer Fatalities	2.2E-4			
	Cancer Incidence	7.6E-4	8.6E-10		
	Genetic Effects	4.5E-5			
Noninvolved Worker MEI	Dose (rem)	7.7E-4			
	Cancer Fatalities	3.9E-7			
	Cancer Incidence	1.3E-6	1.7E-12		
	Genetic Effects	7.7E-8			
	Hazard Index			4.8E-9	
Offsite Population 377645	Dose (person-rem)	9.1			
	Cancer Fatalities	4.5E-3			
	Cancer Incidence	1.6E-2	1.5E-9		
	Genetic Effects	9.1E-4			
Offsite MEI	Dose (rem)	1.9E-4			
	Cancer Fatalities	9.4E-8			
	Cancer Incidence	3.2E-7	4.8E-14		
	Genetic Effects	1.9E-8			
	Hazard Index			1.4E-10	
WM Workers 2184	Dose (FTE-rem)	3.5E2			
	Cancer Fatalities	1.4E-1			
	Cancer Incidence	4.9E-1	7.9E-7		
	Genetic Effects	2.1E-2			
	Exposure Index			1.1E-5	
	Construction Fatalities				4.1E-1
	Construction Injuries				1.8E2
	Operation Fatalities				2.6E-1
	Operation Injuries				2.3E2

Table 5.1–40. Risks Associated with Routine Management of CH-TRUW at INEL Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem)	4.4			
	Cancer Fatalities	2.2E-3			
	Cancer Incidence	7.5E-3	2.2E-9		
	Genetic Effects	4.4E-4			
Noninvolved Worker MEI	Dose (rem)	3.8E-3			
	Cancer Fatalities	1.9E-6			
	Cancer Incidence	6.4E-6	1.9E-12		
	Genetic Effects	3.8E-7			
	Hazard Index			3.3E-9	
Offsite Population 153061	Dose (person-rem)	1.5E1			
	Cancer Fatalities	7.3E-3			
	Cancer Incidence	2.5E-2	1.7E-9		
	Genetic Effects	1.5E-3			
Offsite MEI	Dose (rem)	1.8E-3			
	Cancer Fatalities	9.1E-7			
	Cancer Incidence	3.1E-6	2.3E-13		
	Genetic Effects	1.8E-7			
	Hazard Index			4.2E-10	
WM Workers 5364	Dose (FTE-rem)	5.9E2			
	Cancer Fatalities	2.4E-1			
	Cancer Incidence	8.3E-1	2.2E-5		
	Genetic Effects	3.6E-2			
	Exposure Index			1.0E-4	
	Construction Fatalities				9.3E-1
	Construction Injuries				4.0E2
	Operation Fatalities				6.5E-1
	Operation Injuries				5.5E2

Table 5.1-41. Risks Associated with Routine Management of CH-TRUW at LANL Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 11552	Dose (person-rem)	1.2E2			
	Cancer Fatalities	5.8E-2			
	Cancer Incidence	2.0E-1	5.3E-10		
	Genetic Effects	1.2E-2			
Noninvolved Worker MEI	Dose (rem)	8.7E-2			
	Cancer Fatalities	4.4E-5			
	Cancer Incidence	1.5E-4	3.3E-13		
	Genetic Effects	8.7E-6			
	Hazard Index			2.8E-8	
Offsite Population 159152	Dose (person-rem)	1.3E3			
	Cancer Fatalities	6.4E-1			
	Cancer Incidence	2.2	1.1E-9		
	Genetic Effects	1.3E-1			
Offsite MEI	Dose (rem)	1.3E-1			
	Cancer Fatalities	6.7E-5			
	Cancer Incidence	2.3E-4	1.3E-13		
	Genetic Effects	1.3E-5			
	Hazard Index			1.1E-8	
WM Workers 2772	Dose (FTE-rem)	3.4E2			
	Cancer Fatalities	1.4E-1			
	Cancer Incidence	4.8E-1	3.7E-7		
	Genetic Effects	2.0E-2			
	Exposure Index			6.7E-5	
	Construction Fatalities				4.9E-1
	Construction Injuries				2.1E2
	Operation Fatalities				3.4E-1
	Operation Injuries				2.9E2

Table 5.1–42. Risks Associated with Routine Management of CH-TRUW at LBL Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3940	Dose (person-rem)	1.3E-7			
	Cancer Fatalities	6.7E-11			
	Cancer Incidence	2.3E-10	4.0E-13		
	Genetic Effects	1.3E-11			
Noninvolved Worker MEI	Dose (rem)	1.1E-10			
	Cancer Fatalities	5.3E-14			
	Cancer Incidence	1.8E-13	0.00		
	Genetic Effects	1.1E-14			
	Hazard Index			3.9E-14	
Offsite Population 1586829	Dose (person-rem)	2.0E-5			
	Cancer Fatalities	9.8E-9			
	Cancer Incidence	3.3E-8	1.0E-11		
	Genetic Effects	2.0E-9			
Offsite MEI	Dose (rem)	2.9E-10			
	Cancer Fatalities	1.5E-13			
	Cancer Incidence	5.0E-13	0.00		
	Genetic Effects	2.9E-14			
	Hazard Index			2.9E-14	
WM Workers 1	Dose (FTE-rem)	5.4E-6			
	Cancer Fatalities	2.1E-9			
	Cancer Incidence	7.5E-9	8.9E-14		
	Genetic Effects	3.2E-10			
	Exposure Index			3.9E-10	
	Construction Fatalities				1.1E-4
	Construction Injuries				4.7E-2
	Operation Fatalities				7.1E-5
	Operation Injuries				6.1E-2

Table 5.1-43. Risks Associated with Routine Management of CH-TRUW at LLNL Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 9504	Dose (person-rem)	3.6E-4			
	Cancer Fatalities	1.8E-7			
	Cancer Incidence	6.1E-7	5.2E-8		
	Genetic Effects	3.6E-8			
Noninvolved Worker MEI	Dose (rem)	1.2E-7			
	Cancer Fatalities	6.0E-11			
	Cancer Incidence	2.1E-10	1.5E-11		
	Genetic Effects	1.2E-11			
	Hazard Index			6.9E-10	
Offsite Population 6324234	Dose (person-rem)	7.3E-3			
	Cancer Fatalities	3.6E-6			
	Cancer Incidence	1.2E-5	2.2E-7		
	Genetic Effects	7.3E-7			
Offsite MEI	Dose (rem)	1.2E-7			
	Cancer Fatalities	5.9E-11			
	Cancer Incidence	2.0E-10	4.8E-12		
	Genetic Effects	1.2E-11			
	Hazard Index			2.2E-10	
WM Workers 186	Dose (FTE-rem)	1.4			
	Cancer Fatalities	5.7E-4			
	Cancer Incidence	2.0E-3	1.9E-6		
	Genetic Effects	8.6E-5			
	Exposure Index			2.1E-5	
	Construction Fatalities				3.4E-2
	Construction Injuries				1.5E1
	Operation Fatalities				2.3E-2
	Operation Injuries				1.9E1

Table 5.1–44. Risks Associated with Routine Management of CH-TRUW at Mound Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1688	Dose (person-rem)	2.6E-5	4.4E-12		
	Cancer Fatalities	1.3E-8			
	Cancer Incidence	4.4E-8			
	Genetic Effects	2.6E-9			
Noninvolved Worker MEI	Dose (rem)	4.1E-8	0.00	7.7E-12	
	Cancer Fatalities	2.0E-11			
	Cancer Incidence	6.9E-11			
	Genetic Effects	4.1E-12			
	Hazard Index				
Offsite Population 3032983	Dose (person-rem)	3.0E-3	1.6E-10		
	Cancer Fatalities	1.5E-6			
	Cancer Incidence	5.1E-6			
	Genetic Effects	3.0E-7			
Offsite MEI	Dose (rem)	1.7E-7	0.00	7.7E-12	
	Cancer Fatalities	8.6E-11			
	Cancer Incidence	2.9E-10			
	Genetic Effects	1.7E-11			
	Hazard Index				
WM Workers 47	Dose (FTE-rem)	3.3E-1	2.1E-10	2.0E-8	8.6E-3
	Cancer Fatalities	1.3E-4			
	Cancer Incidence	4.7E-4			
	Genetic Effects	2.0E-5			
	Exposure Index				
	Construction Fatalities				3.7
	Construction Injuries				5.7E-3
	Operation Fatalities				4.8
	Operation Injuries				

Table 5.1-45. Risks Associated with Routine Management of CH-TRUW at NTS Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3756	Dose (person-rem)	8.5E-7			
	Cancer Fatalities	4.2E-10			
	Cancer Incidence	1.4E-9	1.5E-11		
	Genetic Effects	8.5E-11			
Noninvolved Worker MEI	Dose (rem)	3.9E-9			
	Cancer Fatalities	1.9E-12			
	Cancer Incidence	6.6E-12	6.2E-14		
	Genetic Effects	3.9E-13			
	Hazard Index			8.2E-11	
Offsite Population 14266	Dose (person-rem)	3.0E-7			
	Cancer Fatalities	1.5E-10			
	Cancer Incidence	5.1E-10	1.1E-12		
	Genetic Effects	3.0E-11			
Offsite MEI	Dose (rem)	7.8E-11			
	Cancer Fatalities	3.9E-14			
	Cancer Incidence	1.3E-13	0.00		
	Genetic Effects	8.0E-15			
	Hazard Index			3.8E-13	
WM Workers 137	Dose (FTE-rem)	5.0E-1			
	Cancer Fatalities	2.0E-4			
	Cancer Incidence	7.0E-4	4.4E-9		
	Genetic Effects	3.0E-5			
	Exposure Index			1.8E-7	
	Construction Fatalities				2.5E-2
	Construction Injuries				1.1E1
	Operation Fatalities				1.7E-2
	Operation Injuries				1.4E1

Table 5.1–46. Risks Associated with Routine Management of CH-TRUW at PGDP Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1952	Dose (person-rem)	8.2E-7			
	Cancer Fatalities	4.1E-10			
	Cancer Incidence	1.4E-9	5.0E-13		
	Genetic Effects	8.2E-11			
Noninvolved Worker MEI	Dose (rem)	1.0E-9			
	Cancer Fatalities	5.0E-13			
	Cancer Incidence	1.7E-12	0.00		
	Genetic Effects	1.0E-13			
	Hazard Index			1.2E-12	
Offsite Population 500502	Dose (person-rem)	1.1E-5			
	Cancer Fatalities	5.3E-9			
	Cancer Incidence	1.8E-8	9.5E-13		
	Genetic Effects	1.1E-9			
Offsite MEI	Dose (rem)	1.2E-9			
	Cancer Fatalities	5.9E-13			
	Cancer Incidence	2.0E-12	0.00		
	Genetic Effects	1.2E-13			
	Hazard Index			2.1E-13	
WM Workers 8	Dose (FTE-rem)	1.2E-3			
	Cancer Fatalities	4.7E-7			
	Cancer Incidence	1.7E-6	2.9E-12		
	Genetic Effects	7.1E-8			
	Exposure Index			1.6E-9	
	Construction Fatalities				1.5E-3
	Construction Injuries				6.7E-1
	Operation Fatalities				1.0E-3
	Operation Injuries				8.6E-1

Table 5.1-47. Risks Associated with Routine Management of CH-TRUW at RFETS Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 6993	Dose (person-rem)	1.1E1			
	Cancer Fatalities	5.6E-3			
	Cancer Incidence	1.9E-2	1.7E-10		
	Genetic Effects	1.1E-3			
Noninvolved Worker MEI	Dose (rem)	6.7E-3			
	Cancer Fatalities	3.3E-6			
	Cancer Incidence	1.1E-5	8.5E-14		
	Genetic Effects	6.7E-7			
	Hazard Index			1.6E-8	
Offsite Population 2171877	Dose (person-rem)	2.2E2			
	Cancer Fatalities	1.1E-1			
	Cancer Incidence	3.7E-1	8.4E-10		
	Genetic Effects	2.2E-2			
Offsite MEI	Dose (rem)	3.0E-3			
	Cancer Fatalities	1.5E-6			
	Cancer Incidence	5.0E-6	0.00		
	Genetic Effects	3.0E-7			
	Hazard Index			1.2E-9	
WM Workers 1852	Dose (FTE-rem)	1.8E1			
	Cancer Fatalities	7.3E-3			
	Cancer Incidence	2.5E-2	6.2E-8		
	Genetic Effects	1.1E-3			
	Exposure Index			2.6E-5	
	Construction Fatalities				3.4E-1
	Construction Injuries				1.5E2
	Operation Fatalities				2.2E-1
	Operation Injuries				1.9E2

Table 5.1–48. Risks Associated with Routine Management of CH-TRUW at SNL–NM Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 10576	Dose (person-rem)	1.6E-7			
	Cancer Fatalities	7.9E-11			
	Cancer Incidence	2.7E-10	1.7E-13		
	Genetic Effects	1.6E-11			
Noninvolved Worker MEI	Dose (rem)	6.6E-11			
	Cancer Fatalities	3.3E-14			
	Cancer Incidence	1.1E-13	0.00		
	Genetic Effects	0.00			
	Hazard Index			8.6E-14	
Offsite Population 610714	Dose (person-rem)	7.0E-6			
	Cancer Fatalities	3.5E-9			
	Cancer Incidence	1.2E-8	1.5E-12		
	Genetic Effects	7.0E-10			
Offsite MEI	Dose (rem)	2.8E-10			
	Cancer Fatalities	1.4E-13			
	Cancer Incidence	4.8E-13	0.00		
	Genetic Effects	2.8E-14			
	Hazard Index			8.6E-14	
WM Workers 1	Dose (FTE-rem)	1.5E-5			
	Cancer Fatalities	5.9E-9			
	Cancer Incidence	2.1E-8	7.5E-14		
	Genetic Effects	8.9E-10			
	Exposure Index			2.8E-10	
	Construction Fatalities				2.7E-4
	Construction Injuries				1.2E-1
	Operation Fatalities				1.8E-4
	Operation Injuries				1.5E-1

Table 5.1–49. Risks Associated with Routine Management of CH-TRUW at SRS Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 15996	Dose (person-rem)	5.6E2			
	Cancer Fatalities	2.8E-1			
	Cancer Incidence	9.4E-1	2.3E-10		
	Genetic Effects	5.6E-2			
Noninvolved Worker MEI	Dose (rem)	4.9E-1			
	Cancer Fatalities	2.4E-4			
	Cancer Incidence	8.2E-4	2.7E-13		
	Genetic Effects	4.9E-5			
	Hazard Index			1.3E-7	
Offsite Population 620618	Dose (person-rem)	5.2E3			
	Cancer Fatalities	2.6			
	Cancer Incidence	8.8	4.7E-10		
	Genetic Effects	5.2E-1			
Offsite MEI	Dose (rem)	4.8E-2			
	Cancer Fatalities	2.4E-5			
	Cancer Incidence	8.2E-5	0.00		
	Genetic Effects	4.8E-6			
	Hazard Index			3.0E-9	
WM Workers 1896	Dose (FTE-rem)	2.1E2			
	Cancer Fatalities	8.5E-2			
	Cancer Incidence	3.0E-1	6.4E-7		
	Genetic Effects	1.3E-2			
	Exposure Index			8.6E-4	
	Construction Fatalities				3.6E-1
	Construction Injuries				1.6E2
	Operation Fatalities				2.3E-1
	Operation Injuries				2.0E2

Table 5.1–50. Risks Associated with Routine Management of CH-TRUW at ANL-E Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 5571	Dose (person-rem)	1.6E-5			
	Cancer Fatalities	8.0E-9			
	Cancer Incidence	2.7E-8	1.6E-11		
	Genetic Effects	1.6E-9			
Noninvolved Worker MEI	Dose (rem)	1.6E-8			
	Cancer Fatalities	8.0E-12			
	Cancer Incidence	2.7E-11	1.4E-14		
	Genetic Effects	1.6E-12			
	Hazard Index			2.5E-11	
Offsite Population 7939785	Dose (person-rem)	3.1E-3			
	Cancer Fatalities	1.5E-6			
	Cancer Incidence	5.2E-6	7.5E-10		
	Genetic Effects	3.1E-7			
Offsite MEI	Dose (rem)	1.7E-8			
	Cancer Fatalities	8.5E-12			
	Cancer Incidence	2.9E-11	0.00		
	Genetic Effects	1.7E-12			
	Hazard Index			8.4E-12	
WM Workers 121	Dose (FTE-rem)	2.2E1			
	Cancer Fatalities	8.6E-3			
	Cancer Incidence	3.0E-2	1.7E-9		
	Genetic Effects	1.3E-3			
	Exposure Index			5.3E-8	
	Construction Fatalities				2.2E-2
	Construction Injuries				9.6
	Operation Fatalities				1.5E-2
	Operation Injuries				1.2E1

Table 5.1–51. Risks Associated with Routine Management of CH-TRUW at Hanford Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8674	Dose (person-rem)	4.5E-1			
	Cancer Fatalities	2.2E-4			
	Cancer Incidence	7.6E-4	8.6E-10		
	Genetic Effects	4.5E-5			
Noninvolved Worker MEI	Dose (rem)	7.7E-4			
	Cancer Fatalities	3.9E-7			
	Cancer Incidence	1.3E-6	1.7E-12		
	Genetic Effects	7.7E-8			
	Hazard Index			4.8E-9	
Offsite Population 377645	Dose (person-rem)	9.1			
	Cancer Fatalities	4.5E-3			
	Cancer Incidence	1.6E-2	1.5E-9		
	Genetic Effects	9.1E-4			
Offsite MEI	Dose (rem)	1.9E-4			
	Cancer Fatalities	9.4E-8			
	Cancer Incidence	3.2E-7	4.8E-14		
	Genetic Effects	1.9E-8			
	Hazard Index			1.4E-10	
WM Workers 2184	Dose (FTE-rem)	3.5E2			
	Cancer Fatalities	1.4E-1			
	Cancer Incidence	4.9E-1	7.9E-7		
	Genetic Effects	2.1E-2			
	Exposure Index			1.1E-5	
	Construction Fatalities				4.1E-1
	Construction Injuries				1.8E2
	Operation Fatalities				2.6E-1
	Operation Injuries				2.3E2

Table 5.1–52. Risks Associated with Routine Management of CH-TRUW at INEL Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem)	2.5E1			
	Cancer Fatalities	1.2E-2			
	Cancer Incidence	4.2E-2	2.3E-9		
	Genetic Effects	2.5E-3			
Noninvolved Worker MEI	Dose (rem)	2.1E-2			
	Cancer Fatalities	1.1E-5			
	Cancer Incidence	3.6E-5	1.9E-12		
	Genetic Effects	2.1E-6			
	Hazard Index			6.3E-9	
Offsite Population 153061	Dose (person-rem)	8.2E1			
	Cancer Fatalities	4.1E-2			
	Cancer Incidence	1.4E-1	1.7E-9		
	Genetic Effects	8.2E-3			
Offsite MEI	Dose (rem)	1.0E-2			
	Cancer Fatalities	5.1E-6			
	Cancer Incidence	1.7E-5	2.4E-13		
	Genetic Effects	1.0E-6			
	Hazard Index			7.9E-10	
WM Workers 6277	Dose (FTE-rem)	6.2E2			
	Cancer Fatalities	2.5E-1			
	Cancer Incidence	8.7E-1	3.3E-5		
	Genetic Effects	3.7E-2			
	Exposure Index			2.0E-4	
	Construction Fatalities				1.1
	Construction Injuries				4.6E2
	Operation Fatalities				7.6E-1
	Operation Injuries				6.5E2

Table 5.1-53. Risks Associated with Routine Management of CH-TRUW at LANL Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 11552	Dose (person-rem)	1.3E-2	9.3E-10		
	Cancer Fatalities	6.4E-6			
	Cancer Incidence	2.2E-5			
	Genetic Effects	1.3E-6			
Noninvolved Worker MEI	Dose (rem)	9.7E-6	5.7E-13	7.8E-10	
	Cancer Fatalities	4.8E-9			
	Cancer Incidence	1.6E-8			
	Genetic Effects	9.7E-10			
	Hazard Index				
Offsite Population 159152	Dose (person-rem)	1.4E-1	1.9E-9		
	Cancer Fatalities	7.1E-5			
	Cancer Incidence	2.4E-4			
	Genetic Effects	1.4E-5			
Offsite MEI	Dose (rem)	1.5E-5	2.3E-13	3.1E-10	
	Cancer Fatalities	7.4E-9			
	Cancer Incidence	2.5E-8			
	Genetic Effects	1.5E-9			
	Hazard Index				
WM Workers 713	Dose (FTE-rem)	3.6E2	1.7E-7	2.3E-6	1.5E-1 6.6E1 8.6E-2 7.3E1
	Cancer Fatalities	1.4E-1			
	Cancer Incidence	5.0E-1			
	Genetic Effects	2.2E-2			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 5.1–54. Risks Associated with Routine Management of CH-TRUW at LBL Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3940	Dose (person-rem)	1.3E-7			
	Cancer Fatalities	6.7E-11			
	Cancer Incidence	2.3E-10	4.0E-13		
	Genetic Effects	1.3E-11			
Noninvolved Worker MEI	Dose (rem)	1.1E-10			
	Cancer Fatalities	5.3E-14			
	Cancer Incidence	1.8E-13	0.00		
	Genetic Effects	1.1E-14			
	Hazard Index			3.9E-14	
Offsite Population 1586829	Dose (person-rem)	2.0E-5			
	Cancer Fatalities	9.8E-9			
	Cancer Incidence	3.3E-8	1.0E-11		
	Genetic Effects	2.0E-9			
Offsite MEI	Dose (rem)	2.9E-10			
	Cancer Fatalities	1.5E-13			
	Cancer Incidence	5.0E-13	0.00		
	Genetic Effects	2.9E-14			
	Hazard Index			2.9E-14	
WM Workers 1	Dose (FTE-rem)	5.4E-6			
	Cancer Fatalities	2.1E-9			
	Cancer Incidence	7.5E-9	8.9E-14		
	Genetic Effects	3.2E-10			
	Exposure Index			3.9E-10	
	Construction Fatalities				1.1E-4
	Construction Injuries				4.7E-2
	Operation Fatalities				7.1E-5
	Operation Injuries				6.1E-2

Table 5.1-55. Risks Associated with Routine Management of CH-TRUW at LLNL Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 9504	Dose (person-rem)	3.6E-4			
	Cancer Fatalities	1.8E-7			
	Cancer Incidence	6.1E-7	5.2E-8		
	Genetic Effects	3.6E-8			
Noninvolved Worker MEI	Dose (rem)	1.2E-7			
	Cancer Fatalities	6.0E-11			
	Cancer Incidence	2.1E-10	1.5E-11		
	Genetic Effects	1.2E-11			
	Hazard Index			6.9E-10	
Offsite Population 6324234	Dose (person-rem)	7.3E-3			
	Cancer Fatalities	3.6E-6			
	Cancer Incidence	1.2E-5	2.2E-7		
	Genetic Effects	7.3E-7			
Offsite MEI	Dose (rem)	1.2E-7			
	Cancer Fatalities	5.9E-11			
	Cancer Incidence	2.0E-10	4.8E-12		
	Genetic Effects	1.2E-11			
	Hazard Index			2.2E-10	
WM Workers 186	Dose (FTE-rem)	1.4			
	Cancer Fatalities	5.7E-4			
	Cancer Incidence	2.0E-3	1.9E-6		
	Genetic Effects	8.6E-5			
	Exposure Index			2.1E-5	
	Construction Fatalities				3.4E-2
	Construction Injuries				1.5E1
	Operation Fatalities				2.3E-2
	Operation Injuries				1.9E1

Table 5.1-56. Risks Associated with Routine Management of CH-TRUW at Mound Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1688	Dose (person-rem)	2.6E-5			
	Cancer Fatalities	1.3E-8			
	Cancer Incidence	4.4E-8	4.4E-12		
	Genetic Effects	2.6E-9			
Noninvolved Worker MEI	Dose (rem)	4.1E-8			
	Cancer Fatalities	2.0E-11			
	Cancer Incidence	6.9E-11	0.00		
	Genetic Effects	4.1E-12			
	Hazard Index			7.7E-12	
Offsite Population 3032983	Dose (person-rem)	3.0E-3			
	Cancer Fatalities	1.5E-6			
	Cancer Incidence	5.1E-6	1.6E-10		
	Genetic Effects	3.0E-7			
Offsite MEI	Dose (rem)	1.7E-7			
	Cancer Fatalities	8.6E-11			
	Cancer Incidence	2.9E-10	0.00		
	Genetic Effects	1.7E-11			
	Hazard Index			7.7E-12	
WM Workers 47	Dose (FTE-rem)	3.3E-1			
	Cancer Fatalities	1.3E-4			
	Cancer Incidence	4.7E-4	2.1E-10		
	Genetic Effects	2.0E-5			
	Exposure Index			2.0E-8	
	Construction Fatalities				8.6E-3
	Construction Injuries				3.7
	Operation Fatalities				5.7E-3
	Operation Injuries				4.8

Table 5.1-57. Risks Associated with Routine Management of CH-TRUW at NTS Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3756	Dose (person-rem)	8.5E-7			
	Cancer Fatalities	4.2E-10			
	Cancer Incidence	1.4E-9	1.5E-11		
	Genetic Effects	8.5E-11			
Noninvolved Worker MEI	Dose (rem)	3.9E-9			
	Cancer Fatalities	1.9E-12			
	Cancer Incidence	6.6E-12	6.2E-14		
	Genetic Effects	3.9E-13			
	Hazard Index			8.2E-11	
Offsite Population 14266	Dose (person-rem)	3.0E-7			
	Cancer Fatalities	1.5E-10			
	Cancer Incidence	5.1E-10	1.1E-12		
	Genetic Effects	3.0E-11			
Offsite MEI	Dose (rem)	7.8E-11			
	Cancer Fatalities	3.9E-14			
	Cancer Incidence	1.3E-13	0.00		
	Genetic Effects	8.0E-15			
	Hazard Index			3.8E-13	
WM Workers 137	Dose (FTE-rem)	5.0E-1			
	Cancer Fatalities	2.0E-4			
	Cancer Incidence	7.0E-4	4.4E-9		
	Genetic Effects	3.0E-5			
	Exposure Index			1.8E-7	
	Construction Fatalities				2.5E-2
	Construction Injuries				1.1E1
	Operation Fatalities				1.7E-2
	Operation Injuries				1.4E1

Table 5.1-58. Risks Associated with Routine Management of CH-TRUW at PGDP Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1952	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	8.2E-7 4.1E-10 1.4E-9 8.2E-11	5.0E-13		
Noninvolved Worker MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	1.0E-9 5.0E-13 1.7E-12 1.0E-13	0.00	1.2E-12	
Offsite Population 500502	Dose (person-rem) Cancer Fatalities Cancer Incidence Genetic Effects	1.1E-5 5.3E-9 1.8E-8 1.1E-9	9.5E-13		
Offsite MEI	Dose (rem) Cancer Fatalities Cancer Incidence Genetic Effects Hazard Index	1.2E-9 5.9E-13 2.0E-12 1.2E-13	0.00	2.1E-13	
WM Workers 8	Dose (FTE-rem) Cancer Fatalities Cancer Incidence Genetic Effects Exposure Index Construction Fatalities Construction Injuries Operation Fatalities Operation Injuries	1.2E-3 4.7E-7 1.7E-6 7.1E-8	2.9E-12	1.6E-9	1.5E-3 6.7E-1 1.0E-3 8.6E-1

Table 5.1-59. Risks Associated with Routine Management of CH-TRUW at RFETS Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 6993	Dose (person-rem)	1.2E-3			
	Cancer Fatalities	6.1E-7			
	Cancer Incidence	2.1E-6	2.3E-10		
	Genetic Effects	1.2E-7			
Noninvolved Worker MEI	Dose (rem)	7.4E-7			
	Cancer Fatalities	3.7E-10			
	Cancer Incidence	1.3E-9	1.2E-13		
	Genetic Effects	7.4E-11			
	Hazard Index			1.9E-9	
Offsite Population 2171877	Dose (person-rem)	2.4E-2			
	Cancer Fatalities	1.2E-5			
	Cancer Incidence	4.1E-5	1.1E-9		
	Genetic Effects	2.4E-6			
Offsite MEI	Dose (rem)	3.3E-7			
	Cancer Fatalities	1.6E-10			
	Cancer Incidence	5.6E-10	9.0E-15		
	Genetic Effects	3.3E-11			
	Hazard Index			1.5E-10	
WM Workers 420	Dose (FTE-rem)	7.4E1			
	Cancer Fatalities	3.0E-2			
	Cancer Incidence	1.0E-1	2.6E-8		
	Genetic Effects	4.4E-3			
	Exposure Index			2.3E-6	
	Construction Fatalities				7.8E-2
	Construction Injuries				3.4E1
	Operation Fatalities				5.1E-2
	Operation Injuries				4.3E1

Table 5.1–60. Risks Associated with Routine Management of CH-TRUW at SNL–NM Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 10576	Dose (person-rem)	1.6E-7			
	Cancer Fatalities	7.9E-11			
	Cancer Incidence	2.7E-10	1.7E-13		
	Genetic Effects	1.6E-11			
Noninvolved Worker MEI	Dose (rem)	6.6E-11			
	Cancer Fatalities	3.3E-14			
	Cancer Incidence	1.1E-13	0.00		
	Genetic Effects	0.00			
	Hazard Index			8.6E-14	
Offsite Population 610714	Dose (person-rem)	7.0E-6			
	Cancer Fatalities	3.5E-9			
	Cancer Incidence	1.2E-8	1.5E-12		
	Genetic Effects	7.0E-10			
Offsite MEI	Dose (rem)	2.8E-10			
	Cancer Fatalities	1.4E-13			
	Cancer Incidence	4.8E-13	0.00		
	Genetic Effects	2.8E-14			
	Hazard Index			8.6E-14	
WM Workers 1	Dose (FTE-rem)	1.5E-5			
	Cancer Fatalities	5.9E-9			
	Cancer Incidence	2.1E-8	7.5E-14		
	Genetic Effects	8.9E-10			
	Exposure Index			2.8E-10	
	Construction Fatalities				2.7E-4
	Construction Injuries				1.2E-1
	Operation Fatalities				1.8E-4
	Operation Injuries				1.5E-1

Table 5.1-61. Risks Associated with Routine Management of CH-TRUW at SRS Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 15996	Dose (person-rem)	5.6E2			
	Cancer Fatalities	2.8E-1			
	Cancer Incidence	9.4E-1	2.3E-10		
	Genetic Effects	5.6E-2			
Noninvolved Worker MEI	Dose (rem)	4.9E-1			
	Cancer Fatalities	2.4E-4			
	Cancer Incidence	8.2E-4	2.7E-13		
	Genetic Effects	4.9E-5			
	Hazard Index			1.3E-7	
Offsite Population 620618	Dose (person-rem)	5.2E3			
	Cancer Fatalities	2.6			
	Cancer Incidence	8.8	4.7E-10		
	Genetic Effects	5.2E-1			
Offsite MEI	Dose (rem)	4.8E-2			
	Cancer Fatalities	2.4E-5			
	Cancer Incidence	8.2E-5	0.00		
	Genetic Effects	4.8E-6			
	Hazard Index			3.0E-9	
WM Workers 1896	Dose (FTE-rem)	2.1E2			
	Cancer Fatalities	8.5E-2			
	Cancer Incidence	3.0E-1	6.4E-7		
	Genetic Effects	1.3E-2			
	Exposure Index			8.6E-4	
	Construction Fatalities				3.6E-1
	Construction Injuries				1.6E2
	Operation Fatalities				2.3E-1
	Operation Injuries				2.0E2

Table 5.1–62. Risks Associated with Routine Management of CH-TRUW at ANL-E Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 5571	Dose (person-rem)	1.6E-5			
	Cancer Fatalities	8.0E-9			
	Cancer Incidence	2.7E-8	1.6E-11		
	Genetic Effects	1.6E-9			
Noninvolved Worker MEI	Dose (rem)	1.6E-8			
	Cancer Fatalities	8.0E-12			
	Cancer Incidence	2.7E-11	1.4E-14		
	Genetic Effects	1.6E-12			
	Hazard Index			2.5E-11	
Offsite Population 7939785	Dose (person-rem)	3.1E-3			
	Cancer Fatalities	1.5E-6			
	Cancer Incidence	5.2E-6	7.5E-10		
	Genetic Effects	3.1E-7			
Offsite MEI	Dose (rem)	1.7E-8			
	Cancer Fatalities	8.5E-12			
	Cancer Incidence	2.9E-11	0.00		
	Genetic Effects	1.7E-12			
	Hazard Index			8.4E-12	
WM Workers 121	Dose (FTE-rem)	2.2E1			
	Cancer Fatalities	8.6E-3			
	Cancer Incidence	3.0E-2	1.7E-9		
	Genetic Effects	1.3E-3			
	Exposure Index			5.3E-8	
	Construction Fatalities				2.2E-2
	Construction Injuries				9.6
	Operation Fatalities				1.5E-2
	Operation Injuries				1.2E1

Table 5.1-63. Risks Associated with Routine Management of CH-TRUW at Hanford Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8674	Dose (person-rem)	1.3E-4			
	Cancer Fatalities	6.3E-8			
	Cancer Incidence	2.2E-7	1.4E-10		
	Genetic Effects	1.3E-8			
Noninvolved Worker MEI	Dose (rem)	2.2E-7			
	Cancer Fatalities	1.1E-10			
	Cancer Incidence	3.7E-10	2.7E-13		
	Genetic Effects	2.2E-11			
	Hazard Index			3.3E-10	
Offsite Population 377645	Dose (person-rem)	2.6E-3			
	Cancer Fatalities	1.3E-6			
	Cancer Incidence	4.4E-6	2.3E-10		
	Genetic Effects	2.6E-7			
Offsite MEI	Dose (rem)	5.3E-8			
	Cancer Fatalities	2.7E-11			
	Cancer Incidence	9.1E-11	8.0E-15		
	Genetic Effects	5.3E-12			
	Hazard Index			9.4E-12	
WM Workers 476	Dose (FTE-rem)	2.4E2			
	Cancer Fatalities	9.5E-2			
	Cancer Incidence	3.3E-1	9.1E-8		
	Genetic Effects	1.4E-2			
	Exposure Index			1.3E-6	
	Construction Fatalities				9.2E-2
	Construction Injuries				4.0E1
	Operation Fatalities				5.8E-2
	Operation Injuries				4.9E1

Table 5.1–64. Risks Associated with Routine Management of CH-TRUW at INEL Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem)	9.4E-4			
	Cancer Fatalities	4.7E-7			
	Cancer Incidence	1.6E-6	8.7E-9		
	Genetic Effects	9.4E-8			
Noninvolved Worker MEI	Dose (rem)	8.0E-7			
	Cancer Fatalities	4.0E-10			
	Cancer Incidence	1.4E-9	7.3E-12		
	Genetic Effects	8.0E-11			
	Hazard Index			3.9E-10	
Offsite Population 153061	Dose (person-rem)	3.1E-3			
	Cancer Fatalities	1.6E-6			
	Cancer Incidence	5.3E-6	6.6E-9		
	Genetic Effects	3.1E-7			
Offsite MEI	Dose (rem)	3.9E-7			
	Cancer Fatalities	2.0E-10			
	Cancer Incidence	6.6E-10	9.1E-13		
	Genetic Effects	3.9E-11			
	Hazard Index			4.9E-11	
WM Workers 1586	Dose (FTE-rem)	6.0E2			
	Cancer Fatalities	2.4E-1			
	Cancer Incidence	8.5E-1	4.4E-5		
	Genetic Effects	3.6E-2			
	Exposure Index			1.9E-4	
	Construction Fatalities				3.3E-1
	Construction Injuries				1.4E2
	Operation Fatalities				1.9E-1
	Operation Injuries				1.6E2

Table 5.1-65. Risks Associated with Routine Management of CH-TRUW at LANL Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 11552	Dose (person-rem)	1.3E-2			
	Cancer Fatalities	6.4E-6			
	Cancer Incidence	2.2E-5	9.3E-10		
	Genetic Effects	1.3E-6			
Noninvolved Worker MEI	Dose (rem)	9.7E-6			
	Cancer Fatalities	4.8E-9			
	Cancer Incidence	1.6E-8	5.7E-13		
	Genetic Effects	9.7E-10			
	Hazard Index			7.8E-10	
Offsite Population 159152	Dose (person-rem)	1.4E-1			
	Cancer Fatalities	7.1E-5			
	Cancer Incidence	2.4E-4	1.9E-9		
	Genetic Effects	1.4E-5			
Offsite MEI	Dose (rem)	1.5E-5			
	Cancer Fatalities	7.4E-9			
	Cancer Incidence	2.5E-8	2.3E-13		
	Genetic Effects	1.5E-9			
	Hazard Index			3.1E-10	
WM Workers 713	Dose (FTE-rem)	3.6E2			
	Cancer Fatalities	1.4E-1			
	Cancer Incidence	5.0E-1	1.7E-7		
	Genetic Effects	2.2E-2			
	Exposure Index			2.3E-6	
	Construction Fatalities				1.5E-1
	Construction Injuries				6.6E1
	Operation Fatalities				8.6E-2
	Operation Injuries				7.3E1

Table 5.1-66. Risks Associated with Routine Management of CH-TRUW at LBL Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3940	Dose (person-rem)	1.3E-7			
	Cancer Fatalities	6.7E-11			
	Cancer Incidence	2.3E-10	4.0E-13		
	Genetic Effects	1.3E-11			
Noninvolved Worker MEI	Dose (rem)	1.1E-10			
	Cancer Fatalities	5.3E-14			
	Cancer Incidence	1.8E-13	0.00		
	Genetic Effects	1.1E-14			
	Hazard Index			3.9E-14	
Offsite Population 1586829	Dose (person-rem)	2.0E-5			
	Cancer Fatalities	9.8E-9			
	Cancer Incidence	3.3E-8	1.0E-11		
	Genetic Effects	2.0E-9			
Offsite MEI	Dose (rem)	2.9E-10			
	Cancer Fatalities	1.5E-13			
	Cancer Incidence	5.0E-13	0.00		
	Genetic Effects	2.9E-14			
	Hazard Index			2.9E-14	
WM Workers 1	Dose (FTE-rem)	5.4E-6			
	Cancer Fatalities	2.1E-9			
	Cancer Incidence	7.5E-9	8.9E-14		
	Genetic Effects	3.2E-10			
	Exposure Index			3.9E-10	
	Construction Fatalities				1.1E-4
	Construction Injuries				4.7E-2
	Operation Fatalities				7.1E-5
	Operation Injuries				6.1E-2

Table 5.1-67. Risks Associated with Routine Management of CH-TRUW at LLNL Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 9504	Dose (person-rem)	3.6E-4			
	Cancer Fatalities	1.8E-7			
	Cancer Incidence	6.1E-7	5.2E-8		
	Genetic Effects	3.6E-8			
Noninvolved Worker MEI	Dose (rem)	1.2E-7			
	Cancer Fatalities	6.0E-11			
	Cancer Incidence	2.1E-10	1.5E-11		
	Genetic Effects	1.2E-11			
	Hazard Index			6.9E-10	
Offsite Population 6324234	Dose (person-rem)	7.3E-3			
	Cancer Fatalities	3.6E-6			
	Cancer Incidence	1.2E-5	2.2E-7		
	Genetic Effects	7.3E-7			
Offsite MEI	Dose (rem)	1.2E-7			
	Cancer Fatalities	5.9E-11			
	Cancer Incidence	2.0E-10	4.8E-12		
	Genetic Effects	1.2E-11			
	Hazard Index			2.2E-10	
WM Workers 186	Dose (FTE-rem)	1.4			
	Cancer Fatalities	5.7E-4			
	Cancer Incidence	2.0E-3	1.9E-6		
	Genetic Effects	8.6E-5			
	Exposure Index			2.1E-5	
	Construction Fatalities				3.4E-2
	Construction Injuries				1.5E1
	Operation Fatalities				2.3E-2
	Operation Injuries				1.9E1

Table 5.1–68. Risks Associated with Routine Management of CH-TRUW at Mound Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1688	Dose (person-rem)	2.6E-5			
	Cancer Fatalities	1.3E-8			
	Cancer Incidence	4.4E-8	4.4E-12		
	Genetic Effects	2.6E-9			
Noninvolved Worker MEI	Dose (rem)	4.1E-8			
	Cancer Fatalities	2.0E-11			
	Cancer Incidence	6.9E-11	0.00		
	Genetic Effects	4.1E-12			
	Hazard Index			7.7E-12	
Offsite Population 3032983	Dose (person-rem)	3.0E-3			
	Cancer Fatalities	1.5E-6			
	Cancer Incidence	5.1E-6	1.6E-10		
	Genetic Effects	3.0E-7			
Offsite MEI	Dose (rem)	1.7E-7			
	Cancer Fatalities	8.6E-11			
	Cancer Incidence	2.9E-10	0.00		
	Genetic Effects	1.7E-11			
	Hazard Index			7.7E-12	
WM Workers 47	Dose (FTE-rem)	3.3E-1			
	Cancer Fatalities	1.3E-4			
	Cancer Incidence	4.7E-4	2.1E-10		
	Genetic Effects	2.0E-5			
	Exposure Index			2.0E-8	
	Construction Fatalities				8.6E-3
	Construction Injuries				3.7
	Operation Fatalities				5.7E-3
	Operation Injuries				4.8

Table 5.1-69. Risks Associated with Routine Management of CH-TRUW at NTS Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3756	Dose (person-rem)	8.5E-7			
	Cancer Fatalities	4.2E-10			
	Cancer Incidence	1.4E-9	1.5E-11		
	Genetic Effects	8.5E-11			
Noninvolved Worker MEI	Dose (rem)	3.9E-9			
	Cancer Fatalities	1.9E-12			
	Cancer Incidence	6.6E-12	6.2E-14		
	Genetic Effects	3.9E-13			
	Hazard Index			8.2E-11	
Offsite Population 14266	Dose (person-rem)	3.0E-7			
	Cancer Fatalities	1.5E-10			
	Cancer Incidence	5.1E-10	1.1E-12		
	Genetic Effects	3.0E-11			
Offsite MEI	Dose (rem)	7.8E-11			
	Cancer Fatalities	3.9E-14			
	Cancer Incidence	1.3E-13	0.00		
	Genetic Effects	8.0E-15			
	Hazard Index			3.8E-13	
WM Workers 137	Dose (FTE-rem)	5.0E-1			
	Cancer Fatalities	2.0E-4			
	Cancer Incidence	7.0E-4	4.4E-9		
	Genetic Effects	3.0E-5			
	Exposure Index			1.8E-7	
	Construction Fatalities				2.5E-2
	Construction Injuries				1.1E1
	Operation Fatalities				1.7E-2
	Operation Injuries				1.4E1

Table 5.1-70. Risks Associated with Routine Management of CH-TRUW at PGDP Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1952	Dose (person-rem)	8.2E-7	5.0E-13		
	Cancer Fatalities	4.1E-10			
	Cancer Incidence	1.4E-9			
	Genetic Effects	8.2E-11			
Noninvolved Worker MEI	Dose (rem)	1.0E-9	0.00	1.2E-12	
	Cancer Fatalities	5.0E-13			
	Cancer Incidence	1.7E-12			
	Genetic Effects	1.0E-13			
	Hazard Index				
Offsite Population 500502	Dose (person-rem)	1.1E-5	9.5E-13		
	Cancer Fatalities	5.3E-9			
	Cancer Incidence	1.8E-8			
	Genetic Effects	1.1E-9			
Offsite MEI	Dose (rem)	1.2E-9	0.00	2.1E-13	
	Cancer Fatalities	5.9E-13			
	Cancer Incidence	2.0E-12			
	Genetic Effects	1.2E-13			
	Hazard Index				
WM Workers 8	Dose (FTE-rem)	1.2E-3	2.9E-12	1.6E-9	
	Cancer Fatalities	4.7E-7			
	Cancer Incidence	1.7E-6			
	Genetic Effects	7.1E-8			
	Exposure Index				
	Construction Fatalities				1.5E-3
	Construction Injuries				6.7E-1
	Operation Fatalities				1.0E-3
	Operation Injuries				8.6E-1

Table 5.1-71. Risks Associated with Routine Management of CH-TRUW at RFETS Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 6993	Dose (person-rem)	1.2E-3			
	Cancer Fatalities	6.1E-7			
	Cancer Incidence	2.1E-6	2.3E-10		
	Genetic Effects	1.2E-7			
Noninvolved Worker MEI	Dose (rem)	7.4E-7			
	Cancer Fatalities	3.7E-10			
	Cancer Incidence	1.3E-9	1.2E-13		
	Genetic Effects	7.4E-11			
	Hazard Index			1.9E-9	
Offsite Population 2171877	Dose (person-rem)	2.4E-2			
	Cancer Fatalities	1.2E-5			
	Cancer Incidence	4.1E-5	1.1E-9		
	Genetic Effects	2.4E-6			
Offsite MEI	Dose (rem)	3.3E-7			
	Cancer Fatalities	1.6E-10			
	Cancer Incidence	5.6E-10	9.0E-15		
	Genetic Effects	3.3E-11			
	Hazard Index			1.5E-10	
WM Workers 420	Dose (FTE-rem)	7.4E1			
	Cancer Fatalities	3.0E-2			
	Cancer Incidence	1.0E-1	2.6E-8		
	Genetic Effects	4.4E-3			
	Exposure Index			2.3E-6	
	Construction Fatalities				7.8E-2
	Construction Injuries				3.4E1
	Operation Fatalities				5.1E-2
	Operation Injuries				4.3E1

Table 5.1–72. Risks Associated with Routine Management of CH-TRUW at SNL–NM Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 10576	Dose (person-rem)	1.6E-7			
	Cancer Fatalities	7.9E-11			
	Cancer Incidence	2.7E-10	1.7E-13		
	Genetic Effects	1.6E-11			
Noninvolved Worker MEI	Dose (rem)	6.6E-11			
	Cancer Fatalities	3.3E-14			
	Cancer Incidence	1.1E-13	0.00		
	Genetic Effects	0.00			
	Hazard Index			8.6E-14	
Offsite Population 610714	Dose (person-rem)	7.0E-6			
	Cancer Fatalities	3.5E-9			
	Cancer Incidence	1.2E-8	1.5E-12		
	Genetic Effects	7.0E-10			
Offsite MEI	Dose (rem)	2.8E-10			
	Cancer Fatalities	1.4E-13			
	Cancer Incidence	4.8E-13	0.00		
	Genetic Effects	2.8E-14			
	Hazard Index			8.6E-14	
WM Workers 1	Dose (FTE-rem)	1.5E-5			
	Cancer Fatalities	5.9E-9			
	Cancer Incidence	2.1E-8	7.5E-14		
	Genetic Effects	8.9E-10			
	Exposure Index			2.8E-10	
	Construction Fatalities				2.7E-4
	Construction Injuries				1.2E-1
	Operation Fatalities				1.8E-4
	Operation Injuries				1.5E-1

Table 5.1-73. Risks Associated with Routine Management of CH-TRUW at SRS Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 15996	Dose (person-rem)	1.4E-2			
	Cancer Fatalities	6.9E-6			
	Cancer Incidence	2.3E-5	8.1E-10		
	Genetic Effects	1.4E-6			
Noninvolved Worker MEI	Dose (rem)	1.2E-5			
	Cancer Fatalities	6.0E-9			
	Cancer Incidence	2.0E-8	9.2E-13		
	Genetic Effects	1.2E-9			
	Hazard Index			1.2E-10	
Offsite Population 620618	Dose (person-rem)	1.3E-1			
	Cancer Fatalities	6.4E-5			
	Cancer Incidence	2.2E-4	1.6E-9		
	Genetic Effects	1.3E-5			
Offsite MEI	Dose (rem)	1.2E-6			
	Cancer Fatalities	6.0E-10			
	Cancer Incidence	2.0E-9	2.1E-14		
	Genetic Effects	1.2E-10			
	Hazard Index			2.6E-12	
WM Workers 416	Dose (FTE-rem)	2.4E2			
	Cancer Fatalities	9.5E-2			
	Cancer Incidence	3.3E-1	7.3E-7		
	Genetic Effects	1.4E-2			
	Exposure Index			5.6E-6	
	Construction Fatalities				7.8E-2
	Construction Injuries				3.4E1
	Operation Fatalities				5.0E-2
	Operation Injuries				4.3E1

Table 5.1–74. Risks Associated with Routine Management of CH-TRUW at WIPP Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1060	Dose (person-rem)	9.9E1			
	Cancer Fatalities	5.0E-2			
	Cancer Incidence	1.7E-1	2.6E-9		
	Genetic Effects	9.9E-3			
Noninvolved Worker MEI	Dose (rem)	3.8E-1			
	Cancer Fatalities	1.9E-4			
	Cancer Incidence	6.5E-4	1.2E-11		
	Genetic Effects	3.8E-5			
	Hazard Index			4.6E-7	
Offsite Population 99889	Dose (person-rem)	1.2E3			
	Cancer Fatalities	6.1E-1			
	Cancer Incidence	2.1	5.1E-9		
	Genetic Effects	1.2E-1			
Offsite MEI	Dose (rem)	3.2E-1			
	Cancer Fatalities	1.6E-4			
	Cancer Incidence	5.4E-4	1.9E-12		
	Genetic Effects	3.2E-5			
	Hazard Index			7.6E-8	
WM Workers 6125	Dose (FTE-rem)	1.6E2			
	Cancer Fatalities	6.5E-2			
	Cancer Incidence	2.3E-1	3.9E-5		
	Genetic Effects	9.7E-3			
	Exposure Index			1.1E-3	
	Construction Fatalities				9.9E-1
	Construction Injuries				4.3E2
	Operation Fatalities				7.4E-1
	Operation Injuries				6.3E2

Table 5.1-75. Risks Associated With Routine Management of RH-TRUW at ANL-E Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 5571	Dose (person-rem)	7.5E-7			
	Cancer Fatalities	3.8E-10			
	Cancer Incidence	1.3E-9	6.8E-12		
	Genetic Effects	7.5E-11			
Noninvolved Worker MEI	Dose (rem)	7.6E-10			
	Cancer Fatalities	3.8E-13			
	Cancer Incidence	1.3E-12	0.00		
	Genetic Effects	7.6E-14			
	Hazard Index			4.3E-13	
Offsite Population 7939785	Dose (person-rem)	1.5E-4			
	Cancer Fatalities	7.4E-8			
	Cancer Incidence	2.5E-7	3.3E-10		
	Genetic Effects	1.5E-8			
Offsite MEI	Dose (rem)	8.2E-10			
	Cancer Fatalities	4.1E-13			
	Cancer Incidence	1.4E-12	0.00		
	Genetic Effects	8.2E-14			
	Hazard Index			1.4E-13	
WM Workers 30	Dose (FTE-rem)	7.2E-5			
	Cancer Fatalities	2.9E-8			
	Cancer Incidence	1.0E-7	2.0E-10		
	Genetic Effects	4.3E-9			
	Exposure Index			1.2E-8	
	Construction Fatalities				2.5E-3
	Construction Injuries				1.1
	Operation Fatalities				3.7E-3
	Operation Injuries				3.1

Table 5.1-76. Risks Associated With Routine Management of RH-TRUW at Hanford Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8674	Dose (person-rem)	6.7E-5	3.1E-12		
	Cancer Fatalities	3.3E-8			
	Cancer Incidence	1.1E-7			
	Genetic Effects	6.7E-9			
Noninvolved Worker MEI	Dose (rem)	1.2E-7	0.00	5.6E-12	
	Cancer Fatalities	5.8E-11			
	Cancer Incidence	2.0E-10			
	Genetic Effects	1.2E-11			
	Hazard Index				
Offsite Population 377645	Dose (person-rem)	1.5E-3	5.2E-12		
	Cancer Fatalities	7.4E-7			
	Cancer Incidence	2.5E-6			
	Genetic Effects	1.5E-7			
Offsite MEI	Dose (rem)	3.0E-8	0.00	1.6E-13	
	Cancer Fatalities	1.5E-11			
	Cancer Incidence	5.2E-11			
	Genetic Effects	3.0E-12			
	Hazard Index				
WM Workers 264	Dose (FTE-rem)	4.1E-1	2.4E-9	2.6E-8	2.2E-2 9.7 3.2E-2 2.7E1
	Cancer Fatalities	1.7E-4			
	Cancer Incidence	5.8E-4			
	Genetic Effects	2.5E-5			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 5.1-77. Risks Associated With Routine Management of RH-TRUW at INEL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem)	1.8E-6			
	Cancer Fatalities	9.0E-10			
	Cancer Incidence	3.1E-9	1.3E-13		
	Genetic Effects	1.8E-10			
Noninvolved Worker MEI	Dose (rem)	1.6E-9			
	Cancer Fatalities	7.8E-13			
	Cancer Incidence	2.7E-12	0.00		
	Genetic Effects	1.6E-13			
	Hazard Index			4.8E-13	
Offsite Population 153061	Dose (person-rem)	8.2E-6			
	Cancer Fatalities	4.1E-9			
	Cancer Incidence	1.4E-8	1.0E-13		
	Genetic Effects	8.2E-10			
Offsite MEI	Dose (rem)	1.0E-9			
	Cancer Fatalities	5.1E-13			
	Cancer Incidence	1.7E-12	0.00		
	Genetic Effects	1.0E-13			
	Hazard Index			6.0E-14	
WM Workers 77	Dose (FTE-rem)	7.2E-3			
	Cancer Fatalities	2.9E-6			
	Cancer Incidence	1.0E-5	1.5E-10		
	Genetic Effects	4.3E-7			
	Exposure Index			1.7E-8	
	Construction Fatalities				6.5E-3
	Construction Injuries				2.9
	Operation Fatalities				9.3E-3
	Operation Injuries				7.9

Table 5.1-78. Risks Associated With Routine Management of RH-TRUW at LANL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 11552	Dose (person-rem)	1.1E-7	9.4E-14		
	Cancer Fatalities	5.4E-11			
	Cancer Incidence	1.9E-10			
	Genetic Effects	1.1E-11			
Noninvolved Worker MEI	Dose (rem)	8.2E-11	0.00	4.3E-14	
	Cancer Fatalities	4.1E-14			
	Cancer Incidence	1.4E-13			
	Genetic Effects	8.0E-15			
	Hazard Index				
Offsite Population 159152	Dose (person-rem)	1.3E-6	1.9E-13		
	Cancer Fatalities	6.7E-10			
	Cancer Incidence	2.3E-9			
	Genetic Effects	1.3E-10			
Offsite MEI	Dose (rem)	1.4E-10	0.00	1.7E-14	
	Cancer Fatalities	7.0E-14			
	Cancer Incidence	2.4E-13			
	Genetic Effects	1.4E-14			
	Hazard Index				
WM Workers 5	Dose (FTE-rem)	2.5E-6	4.2E-13	2.5E-10	
	Cancer Fatalities	1.0E-9			
	Cancer Incidence	3.5E-9			
	Genetic Effects	1.5E-10			
	Exposure Index				
	Construction Fatalities				4.6E-4
	Construction Injuries				2.0E-1
	Operation Fatalities				6.5E-4
	Operation Injuries				5.5E-1

Table 5.1-79. Risks Associated With Routine Management of RH-TRUW at ORNL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3809	Dose (person-rem)	4.6E-6			
	Cancer Fatalities	2.3E-9			
	Cancer Incidence	7.8E-9	2.6E-9		
	Genetic Effects	4.6E-10			
Noninvolved Worker MEI	Dose (rem)	4.1E-9			
	Cancer Fatalities	2.1E-12			
	Cancer Incidence	7.0E-12	2.5E-12		
	Genetic Effects	4.1E-13			
	Hazard Index			2.0E-11	
Offsite Population 881652	Dose (person-rem)	1.3E-4			
	Cancer Fatalities	6.6E-8			
	Cancer Incidence	2.2E-7	7.8E-9		
	Genetic Effects	1.3E-8			
Offsite MEI	Dose (rem)	4.1E-9			
	Cancer Fatalities	2.1E-12			
	Cancer Incidence	7.0E-12	4.0E-13		
	Genetic Effects	4.1E-13			
	Hazard Index			3.3E-12	
WM Workers 41	Dose (FTE-rem)	9.0E-4			
	Cancer Fatalities	3.6E-7			
	Cancer Incidence	1.3E-6	8.4E-8		
	Genetic Effects	5.4E-8			
	Exposure Index			3.0E-6	
	Construction Fatalities				3.5E-3
	Construction Injuries				1.5
	Operation Fatalities				5.0E-3
	Operation Injuries				4.2

Table 5.1–80. Risks Associated With Routine Management of RH-TRUW at ANL-E Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 5571	Dose (person-rem)	1.9E-6			
	Cancer Fatalities	9.6E-10			
	Cancer Incidence	3.3E-9	2.2E-11		
	Genetic Effects	1.9E-10			
Noninvolved Worker MEI	Dose (rem)	1.9E-9			
	Cancer Fatalities	9.7E-13			
	Cancer Incidence	3.3E-12	2.0E-14		
	Genetic Effects	1.9E-13			
	Hazard Index			2.7E-12	
Offsite Population 7939785	Dose (person-rem)	3.8E-4			
	Cancer Fatalities	1.9E-7			
	Cancer Incidence	6.5E-7	1.1E-9		
	Genetic Effects	3.8E-8			
Offsite MEI	Dose (rem)	2.1E-9			
	Cancer Fatalities	1.1E-12			
	Cancer Incidence	3.6E-12	0.00		
	Genetic Effects	2.1E-13			
	Hazard Index			9.1E-13	
WM Workers 62	Dose (FTE-rem)	4.2E-1			
	Cancer Fatalities	1.7E-4			
	Cancer Incidence	5.8E-4	5.1E-10		
	Genetic Effects	2.5E-5			
	Exposure Index			2.4E-8	
	Construction Fatalities				1.9E-2
	Construction Injuries				8.1
	Operation Fatalities				7.5E-3
	Operation Injuries				6.3

Table 5.1-81. Risks Associated With Routine Management of RH-TRUW at Hanford Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8674	Dose (person-rem)	3.9E-4			
	Cancer Fatalities	2.0E-7			
	Cancer Incidence	6.6E-7	2.5E-11		
	Genetic Effects	3.9E-8			
Noninvolved Worker MEI	Dose (rem)	6.7E-7			
	Cancer Fatalities	3.4E-10			
	Cancer Incidence	1.1E-9	4.8E-14		
	Genetic Effects	6.7E-11			
	Hazard Index			8.8E-11	
Offsite Population 377645	Dose (person-rem)	8.6E-3			
	Cancer Fatalities	4.3E-6			
	Cancer Incidence	1.5E-5	4.2E-11		
	Genetic Effects	8.6E-7			
Offsite MEI	Dose (rem)	1.8E-7			
	Cancer Fatalities	8.8E-11			
	Cancer Incidence	3.0E-10	0.00		
	Genetic Effects	1.8E-11			
	Hazard Index			2.5E-12	
WM Workers 683	Dose (FTE-rem)	1.9			
	Cancer Fatalities	7.8E-4			
	Cancer Incidence	2.7E-3	2.2E-8		
	Genetic Effects	1.2E-4			
	Exposure Index			8.9E-8	
	Construction Fatalities				1.4E-1
	Construction Injuries				6.2E1
	Operation Fatalities				8.3E-2
	Operation Injuries				7.0E1

Table 5.1–82. Risks Associated With Routine Management of RH-TRUW at INEL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem)	5.5E-6			
	Cancer Fatalities	2.8E-9			
	Cancer Incidence	9.4E-9	5.0E-13		
	Genetic Effects	5.5E-10			
Noninvolved Worker MEI	Dose (rem)	4.8E-9			
	Cancer Fatalities	2.4E-12			
	Cancer Incidence	8.1E-12	0.00		
	Genetic Effects	4.8E-13			
	Hazard Index			4.1E-12	
Offsite Population 153061	Dose (person-rem)	2.5E-5			
	Cancer Fatalities	1.2E-8			
	Cancer Incidence	4.2E-8	3.8E-13		
	Genetic Effects	2.5E-9			
Offsite MEI	Dose (rem)	3.1E-9			
	Cancer Fatalities	1.6E-12			
	Cancer Incidence	5.3E-12	0.00		
	Genetic Effects	3.1E-13			
	Hazard Index			5.2E-13	
WM Workers 168	Dose (FTE-rem)	2.7			
	Cancer Fatalities	1.1E-3			
	Cancer Incidence	3.7E-3	4.1E-10		
	Genetic Effects	1.6E-4			
	Exposure Index			6.2E-8	
	Construction Fatalities				3.7E-2
	Construction Injuries				1.6E1
	Operation Fatalities				2.0E-2
	Operation Injuries				1.7E1

Table 5.1-83. Risks Associated With Routine Management of RH-TRUW at LANL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 11552	Dose (person-rem)	3.2E-6			
	Cancer Fatalities	1.6E-9			
	Cancer Incidence	5.5E-9	3.3E-12		
	Genetic Effects	3.2E-10			
Noninvolved Worker MEI	Dose (rem)	2.4E-9			
	Cancer Fatalities	1.2E-12			
	Cancer Incidence	4.1E-12	0.00		
	Genetic Effects	2.4E-13			
	Hazard Index			2.9E-12	
Offsite Population 159152	Dose (person-rem)	4.0E-5			
	Cancer Fatalities	2.0E-8			
	Cancer Incidence	6.7E-8	6.7E-12		
	Genetic Effects	4.0E-9			
Offsite MEI	Dose (rem)	4.2E-9			
	Cancer Fatalities	2.1E-12			
	Cancer Incidence	7.1E-12	0.00		
	Genetic Effects	4.2E-13			
	Hazard Index			1.2E-12	
WM Workers 51	Dose (FTE-rem)	3.4E-1			
	Cancer Fatalities	1.4E-4			
	Cancer Incidence	4.8E-4	3.3E-11		
	Genetic Effects	2.0E-5			
	Exposure Index			4.6E-9	
	Construction Fatalities				1.7E-2
	Construction Injuries				7.3
	Operation Fatalities				6.1E-3
	Operation Injuries				5.2

Table 5.1-84. Risks Associated With Routine Management of RH-TRUW at ORNL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3809	Dose (person-rem)	5.4E-5			
	Cancer Fatalities	2.7E-8			
	Cancer Incidence	9.2E-8	5.2E-8		
	Genetic Effects	5.4E-9			
Noninvolved Worker MEI	Dose (rem)	4.9E-8			
	Cancer Fatalities	2.5E-11			
	Cancer Incidence	8.3E-11	5.0E-11		
	Genetic Effects	4.9E-12			
	Hazard Index			8.0E-10	
Offsite Population 881652	Dose (person-rem)	1.6E-3			
	Cancer Fatalities	8.0E-7			
	Cancer Incidence	2.7E-6	1.6E-7		
	Genetic Effects	1.6E-7			
Offsite MEI	Dose (rem)	4.9E-8			
	Cancer Fatalities	2.5E-11			
	Cancer Incidence	8.4E-11	8.1E-12		
	Genetic Effects	4.9E-12			
	Hazard Index			1.3E-10	
WM Workers 270	Dose (FTE-rem)	6.8			
	Cancer Fatalities	2.7E-3			
	Cancer Incidence	9.5E-3	3.0E-6		
	Genetic Effects	4.1E-4			
	Exposure Index			3.0E-5	
	Construction Fatalities				5.8E-2
	Construction Injuries				2.5E1
	Operation Fatalities				3.3E-2
	Operation Injuries				2.8E1

Table 5.1-85. Risks Associated With Routine Management of RH-TRUW at ANL-E Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 5571	Dose (person-rem)	2.0E-6			
	Cancer Fatalities	1.0E-9			
	Cancer Incidence	3.5E-9	4.4E-11		
	Genetic Effects	2.0E-10			
Noninvolved Worker MEI	Dose (rem)	2.1E-9			
	Cancer Fatalities	1.0E-12			
	Cancer Incidence	3.5E-12	4.0E-14		
	Genetic Effects	2.1E-13			
	Hazard Index			5.3E-12	
Offsite Population 7939785	Dose (person-rem)	4.0E-4			
	Cancer Fatalities	2.0E-7			
	Cancer Incidence	6.9E-7	2.1E-9		
	Genetic Effects	4.0E-8			
Offsite MEI	Dose (rem)	2.2E-9			
	Cancer Fatalities	1.1E-12			
	Cancer Incidence	3.8E-12	1.3E-14		
	Genetic Effects	2.2E-13			
	Hazard Index			1.8E-12	
WM Workers 29	Dose (FTE-rem)	3.7E-1			
	Cancer Fatalities	1.5E-4			
	Cancer Incidence	5.2E-4	1.1E-9		
	Genetic Effects	2.2E-5			
	Exposure Index			8.4E-8	
	Construction Fatalities				5.3E-3
	Construction Injuries				2.3
	Operation Fatalities				3.5E-3
	Operation Injuries				3.0

Table 5.1–86. Risks Associated With Routine Management of RH-TRUW at Hanford Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8674	Dose (person-rem)	4.1E-4			
	Cancer Fatalities	2.0E-7			
	Cancer Incidence	6.9E-7	2.8E-11		
	Genetic Effects	4.1E-8			
Noninvolved Worker MEI	Dose (rem)	7.0E-7			
	Cancer Fatalities	3.5E-10			
	Cancer Incidence	1.2E-9	5.4E-14		
	Genetic Effects	7.0E-11			
	Hazard Index			1.7E-10	
Offsite Population 377645	Dose (person-rem)	9.0E-3			
	Cancer Fatalities	4.5E-6			
	Cancer Incidence	1.5E-5	4.6E-11		
	Genetic Effects	9.0E-7			
Offsite MEI	Dose (rem)	1.9E-7			
	Cancer Fatalities	9.3E-11			
	Cancer Incidence	3.2E-10	0.00		
	Genetic Effects	1.9E-11			
	Hazard Index			4.8E-12	
WM Workers 778	Dose (FTE-rem)	2.5			
	Cancer Fatalities	1.0E-3			
	Cancer Incidence	3.5E-3	2.5E-8		
	Genetic Effects	1.5E-4			
	Exposure Index			1.6E-7	
	Construction Fatalities				1.7E-1
	Construction Injuries				7.3E1
	Operation Fatalities				9.4E-2
	Operation Injuries				8.0E1

Table 5.1-87. Risks Associated With Routine Management of RH-TRUW at INEL Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem)	7.0E-6			
	Cancer Fatalities	3.5E-9			
	Cancer Incidence	1.2E-8	1.1E-12		
	Genetic Effects	7.0E-10			
Noninvolved Worker MEI	Dose (rem)	6.1E-9			
	Cancer Fatalities	3.0E-12			
	Cancer Incidence	1.0E-11	0.00		
	Genetic Effects	6.1E-13			
	Hazard Index			6.8E-12	
Offsite Population 153061	Dose (person-rem)	3.2E-5			
	Cancer Fatalities	1.6E-8			
	Cancer Incidence	5.4E-8	8.4E-13		
	Genetic Effects	3.2E-9			
Offsite MEI	Dose (rem)	4.0E-9			
	Cancer Fatalities	2.0E-12			
	Cancer Incidence	6.7E-12	0.00		
	Genetic Effects	4.0E-13			
	Hazard Index			8.5E-13	
WM Workers 105	Dose (FTE-rem)	2.5			
	Cancer Fatalities	1.0E-3			
	Cancer Incidence	3.5E-3	1.2E-9		
	Genetic Effects	1.5E-4			
	Exposure Index			1.4E-7	
	Construction Fatalities				1.9E-2
	Construction Injuries				8.3
	Operation Fatalities				1.3E-2
	Operation Injuries				1.1E1

Table 5.1-88. Risks Associated With Routine Management of RH-TRUW at LANL Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 11552	Dose (person-rem)	4.1E-6			
	Cancer Fatalities	2.0E-9			
	Cancer Incidence	6.9E-9	9.5E-12		
	Genetic Effects	4.1E-10			
Noninvolved Worker MEI	Dose (rem)	3.1E-9			
	Cancer Fatalities	1.5E-12			
	Cancer Incidence	5.2E-12	0.00		
	Genetic Effects	3.1E-13			
	Hazard Index			7.7E-12	
Offsite Population 159152	Dose (person-rem)	5.0E-5			
	Cancer Fatalities	2.5E-8			
	Cancer Incidence	8.5E-8	1.9E-11		
	Genetic Effects	5.0E-9			
Offsite MEI	Dose (rem)	5.3E-9			
	Cancer Fatalities	2.6E-12			
	Cancer Incidence	9.0E-12	0.00		
	Genetic Effects	5.3E-13			
	Hazard Index			3.1E-12	
WM Workers 35	Dose (FTE-rem)	3.3E-1			
	Cancer Fatalities	1.3E-4			
	Cancer Incidence	4.6E-4	1.6E-10		
	Genetic Effects	2.0E-5			
	Exposure Index			2.5E-8	
	Construction Fatalities				6.4E-3
	Construction Injuries				2.8
	Operation Fatalities				4.2E-3
	Operation Injuries				3.6

Table 5.1-89. Risks Associated With Routine Management of RH-TRUW at ORNL Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3809	Dose (person-rem)	5.7E-5			
	Cancer Fatalities	2.9E-8			
	Cancer Incidence	9.7E-8	5.2E-8		
	Genetic Effects	5.7E-9			
Noninvolved Worker MEI	Dose (rem)	5.2E-8			
	Cancer Fatalities	2.6E-11			
	Cancer Incidence	8.8E-11	5.0E-11		
	Genetic Effects	5.2E-12			
	Hazard Index			8.1E-10	
Offsite Population 881652	Dose (person-rem)	1.7E-3			
	Cancer Fatalities	8.3E-7			
	Cancer Incidence	2.8E-6	1.6E-7		
	Genetic Effects	1.7E-7			
Offsite MEI	Dose (rem)	5.1E-8			
	Cancer Fatalities	2.6E-11			
	Cancer Incidence	8.7E-11	8.1E-12		
	Genetic Effects	5.1E-12			
	Hazard Index			1.3E-10	
WM Workers 314	Dose (FTE-rem)	6.9			
	Cancer Fatalities	2.8E-3			
	Cancer Incidence	9.6E-3	3.4E-6		
	Genetic Effects	4.1E-4			
	Exposure Index			3.0E-5	
	Construction Fatalities				6.7E-2
	Construction Injuries				2.9E1
	Operation Fatalities				3.8E-2
	Operation Injuries				3.2E1

Table 5.1-90. Risks Associated With Routine Management of RH-TRUW at ANL-E Under Regionalized Alternatives 1 and 2 and the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 5571	Dose (person-rem)	2.0E-6			
	Cancer Fatalities	1.0E-9			
	Cancer Incidence	3.5E-9	4.4E-11		
	Genetic Effects	2.0E-10			
Noninvolved Worker MEI	Dose (rem)	2.1E-9			
	Cancer Fatalities	1.0E-12			
	Cancer Incidence	3.5E-12	4.0E-14		
	Genetic Effects	2.1E-13			
	Hazard Index			5.3E-12	
Offsite Population 7939785	Dose (person-rem)	4.0E-4			
	Cancer Fatalities	2.0E-7			
	Cancer Incidence	6.9E-7	2.1E-9		
	Genetic Effects	4.0E-8			
Offsite MEI	Dose (rem)	2.2E-9			
	Cancer Fatalities	1.1E-12			
	Cancer Incidence	3.8E-12	1.3E-14		
	Genetic Effects	2.2E-13			
	Hazard Index			1.8E-12	
WM Workers 29	Dose (FTE-rem)	3.7E-1			
	Cancer Fatalities	1.5E-4			
	Cancer Incidence	5.2E-4	1.1E-9		
	Genetic Effects	2.2E-5			
	Exposure Index			8.4E-8	
	Construction Fatalities				5.3E-3
	Construction Injuries				2.3
	Operation Fatalities				3.5E-3
	Operation Injuries				3.0

Table 5.1-91. Risks Associated With Routine Management of RH-TRUW at Hanford Under Regionalized Alternatives 1 and 2 and the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8674	Dose (person-rem)	4.7E-1			
	Cancer Fatalities	2.3E-4			
	Cancer Incidence	7.9E-4	2.5E-11		
	Genetic Effects	4.7E-5			
Noninvolved Worker MEI	Dose (rem)	8.1E-4			
	Cancer Fatalities	4.1E-7			
	Cancer Incidence	1.4E-6	4.9E-14		
	Genetic Effects	8.1E-8			
	Hazard Index			2.8E-9	
Offsite Population 377645	Dose (person-rem)	1.3E1			
	Cancer Fatalities	6.3E-3			
	Cancer Incidence	2.2E-2	4.2E-11		
	Genetic Effects	1.3E-3			
Offsite MEI	Dose (rem)	2.6E-4			
	Cancer Fatalities	1.3E-7			
	Cancer Incidence	4.5E-7	0.00		
	Genetic Effects	2.6E-8			
	Hazard Index			8.0E-11	
WM Workers 1693	Dose (FTE-rem)	4.0			
	Cancer Fatalities	1.6E-3			
	Cancer Incidence	5.6E-3	3.0E-8		
	Genetic Effects	2.4E-4			
	Exposure Index			7.6E-6	
	Construction Fatalities				3.9E-1
	Construction Injuries				1.7E2
	Operation Fatalities				2.1E-1
	Operation Injuries				1.7E2

Table 5.1–92. Risks Associated With Routine Management of RH-TRUW at INEL Under Regionalized Alternatives 1 and 2 and the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem)	7.0E-6	1.1E-12		
	Cancer Fatalities	3.5E-9			
	Cancer Incidence	1.2E-8			
	Genetic Effects	7.0E-10			
Noninvolved Worker MEI	Dose (rem)	6.1E-9	0.00	6.8E-12	
	Cancer Fatalities	3.0E-12			
	Cancer Incidence	1.0E-11			
	Genetic Effects	6.1E-13			
	Hazard Index				
Offsite Population 153061	Dose (person-rem)	3.2E-5	8.4E-13		
	Cancer Fatalities	1.6E-8			
	Cancer Incidence	5.4E-8			
	Genetic Effects	3.2E-9			
Offsite MEI	Dose (rem)	4.0E-9	0.00	8.5E-13	
	Cancer Fatalities	2.0E-12			
	Cancer Incidence	6.7E-12			
	Genetic Effects	4.0E-13			
	Hazard Index				
WM Workers 105	Dose (FTE-rem)	2.5	1.2E-9	1.4E-7	
	Cancer Fatalities	1.0E-3			
	Cancer Incidence	3.5E-3			
	Genetic Effects	1.5E-4			
	Exposure Index				
	Construction Fatalities				1.9E-2
	Construction Injuries				8.3
	Operation Fatalities				1.3E-2
	Operation Injuries				1.1E1

Table 5.1-93. Risks Associated With Routine Management of RH-TRUW at LANL Under Regionalized Alternatives 1 and 2 and the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 11552	Dose (person-rem)	4.1E-6			
	Cancer Fatalities	2.0E-9			
	Cancer Incidence	6.9E-9	9.5E-12		
	Genetic Effects	4.1E-10			
Noninvolved Worker MEI	Dose (rem)	3.1E-9			
	Cancer Fatalities	1.5E-12			
	Cancer Incidence	5.2E-12	0.00		
	Genetic Effects	3.1E-13			
	Hazard Index			7.7E-12	
Offsite Population 159152	Dose (person-rem)	5.0E-5			
	Cancer Fatalities	2.5E-8			
	Cancer Incidence	8.5E-8	1.9E-11		
	Genetic Effects	5.0E-9			
Offsite MEI	Dose (rem)	5.3E-9			
	Cancer Fatalities	2.6E-12			
	Cancer Incidence	9.0E-12	0.00		
	Genetic Effects	5.3E-13			
	Hazard Index			3.1E-12	
WM Workers 35	Dose (FTE-rem)	3.3E-1			
	Cancer Fatalities	1.3E-4			
	Cancer Incidence	4.6E-4	1.6E-10		
	Genetic Effects	2.0E-5			
	Exposure Index			2.5E-8	
	Construction Fatalities				6.4E-3
	Construction Injuries				2.8
	Operation Fatalities				4.2E-3
	Operation Injuries				3.6

Table 5.1-94. Risks Associated With Routine Management of RH-TRUW at ORNL Under Regionalized Alternatives 1 and 2 and the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3809	Dose (person-rem)	3.1			
	Cancer Fatalities	1.6E-3			
	Cancer Incidence	5.3E-3	3.7E-8		
	Genetic Effects	3.1E-4			
Noninvolved Worker MEI	Dose (rem)	2.8E-3			
	Cancer Fatalities	1.4E-6			
	Cancer Incidence	4.8E-6	3.5E-11		
	Genetic Effects	2.8E-7			
	Hazard Index			1.2E-8	
Offsite Population 881652	Dose (person-rem)	9.2E1			
	Cancer Fatalities	4.6E-2			
	Cancer Incidence	1.6E-1	1.1E-7		
	Genetic Effects	9.2E-3			
Offsite MEI	Dose (rem)	2.8E-3			
	Cancer Fatalities	1.4E-6			
	Cancer Incidence	4.8E-6	5.7E-12		
	Genetic Effects	2.8E-7			
	Hazard Index			1.9E-9	
WM Workers 682	Dose (FTE-rem)	2.3E2			
	Cancer Fatalities	9.0E-2			
	Cancer Incidence	3.2E-1	5.1E-6		
	Genetic Effects	1.4E-2			
	Exposure Index			3.0E-5	
	Construction Fatalities				1.3E-1
	Construction Injuries				5.5E1
	Operation Fatalities				8.3E-2
	Operation Injuries				7.0E1

6. LOW-LEVEL MIXED WASTE

6.1 Results of the PEIS Risk Evaluation for Routine LLMW Management Alternatives

The following sites were evaluated under the PEIS waste management alternatives for LLMW:

- Argonne National Laboratory-East (ANL-E), Argonne, Illinois
- Brookhaven National Laboratory (BNL), Brookhaven, New York
- Fernald Environmental Management Project (FEMP), Fernald, Ohio
- Idaho National Engineering Laboratory (INEL), Idaho Falls, Idaho
- Inhalation Toxicology Research Institute (ITRI), Albuquerque, New Mexico
- Kansas City Plant (KCP), Kansas City, Missouri
- Knolls Atomic Power Laboratory-Kesselring (KAPL-K), Schenectady, New York
- Lawrence Berkeley Laboratory (LBL), Berkeley, California
- Lawrence Livermore National Laboratory (LLNL), Livermore, California
- Los Alamos National Laboratory (LANL), Los Alamos, New Mexico
- Mound Plant (Mound), Miamisburg, Ohio
- Nevada Test Site (NTS), Las Vegas, Nevada
- Oak Ridge Reservation (ORR), Oak Ridge, Tennessee
- Paducah Gaseous Diffusion Plant (PGDP), Paducah, Kentucky
- Pantex Plant (Pantex), Amarillo, Texas
- Portsmouth Gaseous Diffusion Plant (Ports), Piketon, Ohio
- Rocky Flats Environmental Technology Site (RFETS), Golden, Colorado
- Sandia National Laboratories-New Mexico (SNL-NM), Albuquerque, New Mexico
- Savannah River Site (SRS), Aiken, South Carolina
- West Valley Demonstration Project (WVDP), West Valley, New York

Seven alternatives for the management of LLMW were analyzed for human health risks:

- No Action
- Decentralized
- Regionalized 1
- Regionalized 2
- Regionalized 3
- Regionalized 4
- Centralized

These alternatives are discussed in detail in the PEIS. Tables 6.1-1 through 6.1-189 present the supplemental results of the PEIS human health risk evaluation for LLMW.

Table 6.1-1. Risks Associated With Managing LLMW at ANL-E Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 5571	Dose (person-rem)	2.5E-1			
	Cancer Fatalities	1.2E-4			
	Cancer Incidence	4.2E-4	7.9E-6		
	Genetic Effects	2.5E-5			
Noninvolved Worker MEI	Dose (rem)	2.5E-4			
	Cancer Fatalities	1.2E-7			
	Cancer Incidence	4.2E-7	7.1E-9		
	Genetic Effects	2.5E-8			
	Hazard Index			8.1E-6	
Offsite Population 7939785	Dose (person-rem)	5.2E1			
	Cancer Fatalities	2.6E-2			
	Cancer Incidence	8.8E-2	3.8E-4		
	Genetic Effects	5.2E-3			
Offsite MEI	Dose (rem)	2.8E-4			
	Cancer Fatalities	1.4E-7			
	Cancer Incidence	4.8E-7	2.4E-9		
	Genetic Effects	2.8E-8			
	Hazard Index			2.7E-6	
WM Workers 484	Dose (FTE-rem)	1.1E2			
	Cancer Fatalities	4.4E-2			
	Cancer Incidence	1.6E-1	2.2E-6		
	Genetic Effects	6.7E-3			
	Exposure Index			4.7E-6	
	Construction Fatalities				3.3E-2
	Construction Injuries				1.4E1
	Operation Fatalities				5.9E-2
	Operation Injuries				5.0E1

Table 6.1–2. Risks Associated With Managing LLMW at BNL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3517	Dose (person-rem)	2.8E-3			
	Cancer Fatalities	1.4E-6			
	Cancer Incidence	4.8E-6	5.6E-7		
	Genetic Effects	2.8E-7			
Noninvolved Worker MEI	Dose (rem)	3.1E-6			
	Cancer Fatalities	1.6E-9			
	Cancer Incidence	5.3E-9	2.6E-10		
	Genetic Effects	3.1E-10			
	Hazard Index			2.7E-7	
Offsite Population 5738554	Dose (person-rem)	4.6E-1			
	Cancer Fatalities	2.3E-4			
	Cancer Incidence	7.8E-4	1.6E-5		
	Genetic Effects	4.6E-5			
Offsite MEI	Dose (rem)	6.1E-6			
	Cancer Fatalities	3.1E-9			
	Cancer Incidence	1.0E-8	2.6E-10		
	Genetic Effects	6.1E-10			
	Hazard Index			2.7E-7	
WM Workers 39	Dose (FTE-rem)	3.7E-1			
	Cancer Fatalities	1.5E-4			
	Cancer Incidence	5.2E-4	3.1E-8		
	Genetic Effects	2.2E-5			
	Exposure Index			4.4E-7	
	Construction Fatalities				2.7E-3
	Construction Injuries				1.2
	Operation Fatalities				4.7E-3
	Operation Injuries				4.0

Table 6.1-3. Risks Associated With Managing LLMW at FEMP Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 2456	Dose (person-rem)	9.5E-3			
	Cancer Fatalities	4.7E-6			
	Cancer Incidence	1.6E-5	4.7E-6		
	Genetic Effects	9.5E-7			
Noninvolved Worker MEI	Dose (rem)	8.3E-6			
	Cancer Fatalities	4.2E-9			
	Cancer Incidence	1.4E-8	2.1E-9		
	Genetic Effects	8.3E-10			
	Hazard Index			1.5E-6	
Offsite Population 2764589	Dose (person-rem)	1.3			
	Cancer Fatalities	6.3E-4			
	Cancer Incidence	2.2E-3	6.7E-5		
	Genetic Effects	1.3E-4			
Offsite MEI	Dose (rem)	2.4E-5			
	Cancer Fatalities	1.2E-8			
	Cancer Incidence	4.1E-8	2.1E-9		
	Genetic Effects	2.4E-9			
	Hazard Index			1.5E-6	
WM Workers 268	Dose (FTE-rem)	1.5			
	Cancer Fatalities	6.1E-4			
	Cancer Incidence	2.2E-3	3.9E-6		
	Genetic Effects	9.2E-5			
	Exposure Index			7.1E-6	
	Construction Fatalities				1.9E-2
	Construction Injuries				8.2
	Operation Fatalities				3.2E-2
	Operation Injuries				2.8E1

Table 6.1-4. Risks Associated With Managing LLMW at Hanford Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8674	Dose (person-rem)	1.2			
	Cancer Fatalities	6.2E-4			
	Cancer Incidence	2.1E-3	1.5E-5		
	Genetic Effects	1.2E-4			
Noninvolved Worker MEI	Dose (rem)	2.1E-3			
	Cancer Fatalities	1.1E-6			
	Cancer Incidence	3.6E-6	2.9E-8		
	Genetic Effects	2.1E-7			
	Hazard Index			3.1E-5	
Offsite Population 377645	Dose (person-rem)	3.0E1			
	Cancer Fatalities	1.5E-2			
	Cancer Incidence	5.2E-2	2.5E-5		
	Genetic Effects	3.0E-3			
Offsite MEI	Dose (rem)	6.2E-4			
	Cancer Fatalities	3.1E-7			
	Cancer Incidence	1.1E-6	8.2E-10		
	Genetic Effects	6.2E-8			
	Hazard Index			8.9E-7	
WM Workers 585	Dose (FTE-rem)	3.2E2			
	Cancer Fatalities	1.3E-1			
	Cancer Incidence	4.5E-1	6.7E-5		
	Genetic Effects	1.9E-2			
	Exposure Index			9.0E-5	
	Construction Fatalities				4.4E-2
	Construction Injuries				1.9E1
	Operation Fatalities				7.1E-2
	Operation Injuries				6.0E1

Table 6.1-5. Risks Associated With Managing LLMW at INEL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem)	6.1E-1	5.1E-6		
	Cancer Fatalities	3.0E-4			
	Cancer Incidence	1.0E-3			
	Genetic Effects	6.1E-5			
Noninvolved Worker MEI	Dose (rem)	5.2E-4	4.3E-9	4.1E-6	
	Cancer Fatalities	2.6E-7			
	Cancer Incidence	8.8E-7			
	Genetic Effects	5.2E-8			
	Hazard Index				
Offsite Population 153061	Dose (person-rem)	2.3	3.9E-6		
	Cancer Fatalities	1.1E-3			
	Cancer Incidence	3.8E-3			
	Genetic Effects	2.3E-4			
Offsite MEI	Dose (rem)	2.8E-4	5.3E-10	5.1E-7	
	Cancer Fatalities	1.4E-7			
	Cancer Incidence	4.8E-7			
	Genetic Effects	2.8E-8			
	Hazard Index				
WM Workers 1156	Dose (FTE-rem)	4.7E2	3.0E-5	2.0E-4	
	Cancer Fatalities	1.9E-1			
	Cancer Incidence	6.5E-1			
	Genetic Effects	2.8E-2			
	Exposure Index				
	Construction Fatalities				7.9E-2
	Construction Injuries				3.5E1
	Operation Fatalities				1.4E-1
	Operation Injuries				1.2E2

Table 6.1-6. Risks Associated With Managing LLMW at KAPL-K Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3896	Dose (person-rem)	2.4E-2			
	Cancer Fatalities	1.2E-5			
	Cancer Incidence	4.1E-5	3.6E-8		
	Genetic Effects	2.4E-6			
Noninvolved Worker MEI	Dose (rem)	1.1E-5			
	Cancer Fatalities	5.6E-9			
	Cancer Incidence	1.9E-8	1.4E-11		
	Genetic Effects	1.1E-9			
	Hazard Index			8.9E-9	
Offsite Population 1290172	Dose (person-rem)	2.3			
	Cancer Fatalities	1.2E-3			
	Cancer Incidence	3.9E-3	5.6E-7		
	Genetic Effects	2.3E-4			
Offsite MEI	Dose (rem)	5.1E-5			
	Cancer Fatalities	2.6E-8			
	Cancer Incidence	8.7E-8	1.4E-11		
	Genetic Effects	5.1E-9			
	Hazard Index			8.9E-9	
WM Workers 21	Dose (FTE-rem)	6.4			
	Cancer Fatalities	2.6E-3			
	Cancer Incidence	9.0E-3	5.4E-9		
	Genetic Effects	3.8E-4			
	Exposure Index			1.2E-7	
	Construction Fatalities				1.5E-3
	Construction Injuries				6.5E-1
	Operation Fatalities				2.6E-3
	Operation Injuries				2.2

Table 6.1-7. Risks Associated With Managing LLMW at KCP Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 4410	Dose (person-rem)	3.0E-4			
	Cancer Fatalities	1.5E-7			
	Cancer Incidence	5.1E-7	9.9E-10		
	Genetic Effects	3.0E-8			
Noninvolved Worker MEI	Dose (rem)	2.1E-7			
	Cancer Fatalities	1.1E-10			
	Cancer Incidence	3.6E-10	6.1E-13		
	Genetic Effects	2.1E-11			
	Hazard Index			1.0E-9	
Offsite Population 1729833	Dose (person-rem)	2.2E-2			
	Cancer Fatalities	1.1E-5			
	Cancer Incidence	3.7E-5	1.7E-8		
	Genetic Effects	2.2E-6			
Offsite MEI	Dose (rem)	1.0E-6			
	Cancer Fatalities	5.0E-10			
	Cancer Incidence	1.7E-9	6.1E-13		
	Genetic Effects	1.0E-10			
	Hazard Index			1.0E-9	
WM Workers 1	Dose (FTE-rem)	5.7E-3			
	Cancer Fatalities	2.3E-6			
	Cancer Incidence	7.9E-6	4.4E-13		
	Genetic Effects	3.4E-7			
	Exposure Index			1.3E-9	
	Construction Fatalities				4.5E-5
	Construction Injuries				1.9E-2
	Operation Fatalities				7.4E-5
	Operation Injuries				6.3E-2

Table 6.1-8. Risks Associated With Managing LLMW at LANL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 11552	Dose (person-rem)	2.7E-2			
	Cancer Fatalities	1.3E-5			
	Cancer Incidence	4.6E-5	3.9E-6		
	Genetic Effects	2.7E-6			
Noninvolved Worker MEI	Dose (rem)	2.0E-5			
	Cancer Fatalities	1.0E-8			
	Cancer Incidence	3.5E-8	2.4E-9		
	Genetic Effects	2.0E-9			
	Hazard Index			3.9E-6	
Offsite Population 159152	Dose (person-rem)	3.0E-1			
	Cancer Fatalities	1.5E-4			
	Cancer Incidence	5.1E-4	7.9E-6		
	Genetic Effects	3.0E-5			
Offsite MEI	Dose (rem)	3.2E-5			
	Cancer Fatalities	1.6E-8			
	Cancer Incidence	5.4E-8	9.7E-10		
	Genetic Effects	3.2E-9			
	Hazard Index			1.6E-6	
WM Workers 221	Dose (FTE-rem)	5.5			
	Cancer Fatalities	2.2E-3			
	Cancer Incidence	7.7E-3	6.1E-7		
	Genetic Effects	3.3E-4			
	Exposure Index			5.9E-6	
	Construction Fatalities				1.5E-2
	Construction Injuries				6.7
	Operation Fatalities				2.7E-2
	Operation Injuries				2.3E1

Table 6.1-9. Risks Associated With Managing LLMW at LBL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3940	Dose (person-rem)	5.0E-4			
	Cancer Fatalities	2.5E-7			
	Cancer Incidence	8.5E-7	3.0E-7		
	Genetic Effects	5.0E-8			
Noninvolved Worker MEI	Dose (rem)	3.9E-7			
	Cancer Fatalities	2.0E-10			
	Cancer Incidence	6.7E-10	2.2E-10		
	Genetic Effects	3.9E-11			
	Hazard Index			2.5E-7	
Offsite Population 1586829	Dose (person-rem)	8.6E-2			
	Cancer Fatalities	4.3E-5			
	Cancer Incidence	1.5E-4	7.8E-6		
	Genetic Effects	8.6E-6			
Offsite MEI	Dose (rem)	1.3E-6			
	Cancer Fatalities	6.5E-10			
	Cancer Incidence	2.2E-9	1.6E-10		
	Genetic Effects	1.3E-10			
	Hazard Index			1.8E-7	
WM Workers 18	Dose (FTE-rem)	1.1E-1			
	Cancer Fatalities	4.3E-5			
	Cancer Incidence	1.5E-4	1.3E-8		
	Genetic Effects	6.4E-6			
	Exposure Index			3.2E-7	
	Construction Fatalities				1.3E-3
	Construction Injuries				5.6E-1
	Operation Fatalities				2.2E-3
	Operation Injuries				1.9

Table 6.1–10. Risks Associated With Managing LLMW at LLNL Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 9504	Dose (person-rem)	1.8E-1			
	Cancer Fatalities	8.8E-5			
	Cancer Incidence	3.0E-4	4.4E-5		
	Genetic Effects	1.8E-5			
Noninvolved Worker MEI	Dose (rem)	6.0E-5			
	Cancer Fatalities	3.0E-8			
	Cancer Incidence	1.0E-7	1.3E-8		
	Genetic Effects	6.0E-9			
	Hazard Index			7.6E-6	
Offsite Population 6324234	Dose (person-rem)	3.8			
	Cancer Fatalities	1.9E-3			
	Cancer Incidence	6.5E-3	1.8E-4		
	Genetic Effects	3.8E-4			
Offsite MEI	Dose (rem)	6.2E-5			
	Cancer Fatalities	3.1E-8			
	Cancer Incidence	1.1E-7	4.0E-9		
	Genetic Effects	6.2E-9			
	Hazard Index			2.4E-6	
WM Workers 329	Dose (FTE-rem)	4.6			
	Cancer Fatalities	1.8E-3			
	Cancer Incidence	6.5E-3	5.8E-6		
	Genetic Effects	2.8E-4			
	Exposure Index			8.5E-6	
	Construction Fatalities				2.3E-2
	Construction Injuries				1.0E1
	Operation Fatalities				4.0E-2
	Operation Injuries				3.4E1

Table 6.1-11. Risks Associated With Managing LLMW at Mound Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1688	Dose (person-rem)	4.2E-4	4.2E-8		
	Cancer Fatalities	2.1E-7			
	Cancer Incidence	7.1E-7			
	Genetic Effects	4.2E-8			
Noninvolved Worker MEI	Dose (rem)	6.6E-7	4.9E-11	2.3E-9	
	Cancer Fatalities	3.3E-10			
	Cancer Incidence	1.1E-9			
	Genetic Effects	6.6E-11			
	Hazard Index				
Offsite Population 3032983	Dose (person-rem)	5.1E-2	1.5E-6		
	Cancer Fatalities	2.5E-5			
	Cancer Incidence	8.6E-5			
	Genetic Effects	5.1E-6			
Offsite MEI	Dose (rem)	2.9E-6	4.9E-11	2.3E-9	
	Cancer Fatalities	1.5E-9			
	Cancer Incidence	5.0E-9			
	Genetic Effects	2.9E-10			
	Hazard Index				
WM Workers 11	Dose (FTE-rem)	6.2E-2	8.6E-9	3.4E-7	7.7E-4 3.3E-1 1.3E-3 1.1
	Cancer Fatalities	2.5E-5			
	Cancer Incidence	8.7E-5			
	Genetic Effects	3.7E-6			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1–12. Risks Associated With Managing LLMW at NTS Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3756	Dose (person-rem)	1.7E-7			
	Cancer Fatalities	8.4E-11			
	Cancer Incidence	2.9E-10	3.8E-12		
	Genetic Effects	1.7E-11			
Noninvolved Worker MEI	Dose (rem)	7.8E-10			
	Cancer Fatalities	3.9E-13			
	Cancer Incidence	1.3E-12	1.6E-14		
	Genetic Effects	7.8E-14			
	Hazard Index			1.3E-11	
Offsite Population 14266	Dose (person-rem)	6.5E-8			
	Cancer Fatalities	3.2E-11			
	Cancer Incidence	1.1E-10	2.9E-13		
	Genetic Effects	6.5E-12			
Offsite MEI	Dose (rem)	1.7E-11			
	Cancer Fatalities	8.0E-15			
	Cancer Incidence	2.8E-14	0.00		
	Genetic Effects	0.00			
	Hazard Index			5.8E-14	
WM Workers 0	Dose (FTE-rem)	1.3E-3			
	Cancer Fatalities	5.2E-7			
	Cancer Incidence	1.8E-6	1.5E-13		
	Genetic Effects	7.8E-8			
	Exposure Index			8.1E-10	
	Construction Fatalities				1.6E-5
	Construction Injuries				7.0E-3
	Operation Fatalities				2.8E-5
	Operation Injuries				2.4E-2

Table 6.1-13. Risks Associated With Managing LLMW at ORR Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3809	Dose (person-rem)	1.9E1			
	Cancer Fatalities	9.6E-3			
	Cancer Incidence	3.3E-2	2.6E-5		
	Genetic Effects	1.9E-3			
Noninvolved Worker MEI	Dose (rem)	1.7E-2			
	Cancer Fatalities	8.7E-6			
	Cancer Incidence	3.0E-5	2.5E-8		
	Genetic Effects	1.7E-6			
	Hazard Index			2.0E-5	
Offsite Population 881652	Dose (person-rem)	4.6E2			
	Cancer Fatalities	2.3E-1			
	Cancer Incidence	7.8E-1	7.8E-5		
	Genetic Effects	4.6E-2			
Offsite MEI	Dose (rem)	1.4E-2			
	Cancer Fatalities	7.0E-6			
	Cancer Incidence	2.4E-5	4.0E-9		
	Genetic Effects	1.4E-6			
	Hazard Index			3.3E-6	
WM Workers 3072	Dose (FTE-rem)	6.7E2			
	Cancer Fatalities	2.7E-1			
	Cancer Incidence	9.4E-1	9.3E-3		
	Genetic Effects	4.0E-2			
	Exposure Index			1.2E-2	
	Construction Fatalities				1.8E-1
	Construction Injuries				7.8E1
	Operation Fatalities				3.7E-1
	Operation Injuries				3.2E2

Table 6.1-14. Risks Associated With Managing LLMW at Pantex Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 2825	Dose (person-rem)	1.1E-3			
	Cancer Fatalities	5.6E-7			
	Cancer Incidence	1.9E-6	1.6E-7		
	Genetic Effects	1.1E-7			
Noninvolved Worker MEI	Dose (rem)	2.1E-6			
	Cancer Fatalities	1.1E-9			
	Cancer Incidence	3.6E-9	2.7E-10		
	Genetic Effects	2.1E-10			
	Hazard Index			3.9E-7	
Offsite Population 265185	Dose (person-rem)	4.4E-3			
	Cancer Fatalities	2.2E-6			
	Cancer Incidence	7.5E-6	1.4E-7		
	Genetic Effects	4.4E-7			
Offsite MEI	Dose (rem)	3.7E-7			
	Cancer Fatalities	1.8E-10			
	Cancer Incidence	6.3E-10	1.2E-11		
	Genetic Effects	3.7E-11			
	Hazard Index			1.7E-8	
WM Workers 74	Dose (FTE-rem)	1.0			
	Cancer Fatalities	4.1E-4			
	Cancer Incidence	1.5E-3	1.2E-7		
	Genetic Effects	6.2E-5			
	Exposure Index			1.3E-6	
	Construction Fatalities				5.5E-3
	Construction Injuries				2.4
	Operation Fatalities				9.0E-3
	Operation Injuries				7.6

Table 6.1-15. Risks Associated With Managing LLMW at PGDP Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1952	Dose (person-rem)	5.7E-1			
	Cancer Fatalities	2.8E-4			
	Cancer Incidence	9.6E-4	1.2E-6		
	Genetic Effects	5.7E-5			
Noninvolved Worker MEI	Dose (rem)	6.9E-4			
	Cancer Fatalities	3.5E-7			
	Cancer Incidence	1.2E-6	1.8E-9		
	Genetic Effects	6.9E-8			
	Hazard Index			6.4E-7	
Offsite Population 500502	Dose (person-rem)	7.1			
	Cancer Fatalities	3.6E-3			
	Cancer Incidence	1.2E-2	2.2E-6		
	Genetic Effects	7.1E-4			
Offsite MEI	Dose (rem)	7.9E-4			
	Cancer Fatalities	4.0E-7			
	Cancer Incidence	1.4E-6	3.1E-10		
	Genetic Effects	7.9E-8			
	Hazard Index			1.1E-7	
WM Workers 89	Dose (FTE-rem)	9.1E-1			
	Cancer Fatalities	3.6E-4			
	Cancer Incidence	1.3E-3	1.0E-6		
	Genetic Effects	5.5E-5			
	Exposure Index			5.1E-6	
	Construction Fatalities				6.2E-3
	Construction Injuries				2.7
	Operation Fatalities				1.1E-2
	Operation Injuries				9.1

Table 6.1-16. Risks Associated With Managing LLMW at Ports Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3226	Dose (person-rem)	1.3E-2			
	Cancer Fatalities	6.7E-6			
	Cancer Incidence	2.3E-5	6.7E-5		
	Genetic Effects	1.3E-6			
Noninvolved Worker MEI	Dose (rem)	7.5E-6			
	Cancer Fatalities	3.8E-9			
	Cancer Incidence	1.3E-8	3.8E-8		
	Genetic Effects	7.5E-10			
	Hazard Index			4.5E-5	
Offsite Population 639602	Dose (person-rem)	1.3E-1			
	Cancer Fatalities	6.4E-5			
	Cancer Incidence	2.2E-4	1.2E-4		
	Genetic Effects	1.3E-5			
Offsite MEI	Dose (rem)	1.6E-5			
	Cancer Fatalities	8.0E-9			
	Cancer Incidence	2.7E-8	2.0E-8		
	Genetic Effects	1.6E-9			
	Hazard Index			2.3E-5	
WM Workers 534	Dose (FTE-rem)	4.1			
	Cancer Fatalities	1.6E-3			
	Cancer Incidence	5.7E-3	1.1E-5		
	Genetic Effects	2.5E-4			
	Exposure Index			3.0E-5	
	Construction Fatalities				3.9E-2
	Construction Injuries				1.7E1
	Operation Fatalities				6.5E-2
	Operation Injuries				5.5E1

Table 6.1-17. Risks Associated With Managing LLMW at RFETS Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 6993	Dose (person-rem)	2.7			
	Cancer Fatalities	1.4E-3			
	Cancer Incidence	4.6E-3	4.1E-4		
	Genetic Effects	2.7E-4			
Noninvolved Worker MEI	Dose (rem)	1.6E-3			
	Cancer Fatalities	8.1E-7			
	Cancer Incidence	2.8E-6	2.1E-7		
	Genetic Effects	1.6E-7			
	Hazard Index			2.3E-5	
Offsite Population 2171877	Dose (person-rem)	5.3E1			
	Cancer Fatalities	2.6E-2			
	Cancer Incidence	9.0E-2	2.0E-3		
	Genetic Effects	5.3E-3			
Offsite MEI	Dose (rem)	7.2E-4			
	Cancer Fatalities	3.6E-7			
	Cancer Incidence	1.2E-6	1.6E-8		
	Genetic Effects	7.2E-8			
	Hazard Index			1.8E-6	
WM Workers 3337	Dose (FTE-rem)	5.5			
	Cancer Fatalities	2.2E-3			
	Cancer Incidence	7.7E-3	4.5E-5		
	Genetic Effects	3.3E-4			
	Exposure Index			1.7E-5	
	Construction Fatalities				9.2E-2
	Construction Injuries				4.0E1
	Operation Fatalities				1.1E-1
	Operation Injuries				9.6E1

Table 6.1-18. Risks Associated With Managing LLMW at SNL-NM Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 10576	Dose (person-rem)	3.0E-3			
	Cancer Fatalities	1.5E-6			
	Cancer Incidence	5.1E-6	1.6E-7		
	Genetic Effects	3.0E-7			
Noninvolved Worker MEI	Dose (rem)	1.2E-6			
	Cancer Fatalities	6.2E-10			
	Cancer Incidence	2.1E-9	6.2E-11		
	Genetic Effects	1.2E-10			
	Hazard Index			7.9E-8	
Offsite Population 610714	Dose (person-rem)	1.5E-1			
	Cancer Fatalities	7.7E-5			
	Cancer Incidence	2.6E-4	1.5E-6		
	Genetic Effects	1.5E-5			
Offsite MEI	Dose (rem)	6.1E-6			
	Cancer Fatalities	3.0E-9			
	Cancer Incidence	1.0E-8	6.2E-11		
	Genetic Effects	6.1E-10			
	Hazard Index			7.9E-8	
WM Workers 12	Dose (FTE-rem)	1.3E-1			
	Cancer Fatalities	5.2E-5			
	Cancer Incidence	1.8E-4	6.8E-10		
	Genetic Effects	7.7E-6			
	Exposure Index			4.9E-8	
	Construction Fatalities				8.9E-4
	Construction Injuries				3.9E-1
	Operation Fatalities				1.5E-3
	Operation Injuries				1.3

Table 6.1-19. Risks Associated With Managing LLMW at SRS Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 15996	Dose (person-rem)	2.6E-1			
	Cancer Fatalities	1.3E-4			
	Cancer Incidence	4.4E-4	2.8E-6		
	Genetic Effects	2.6E-5			
Noninvolved Worker MEI	Dose (rem)	2.3E-4			
	Cancer Fatalities	1.1E-7			
	Cancer Incidence	3.9E-7	3.2E-9		
	Genetic Effects	2.3E-8			
	Hazard Index			3.4E-6	
Offsite Population 620618	Dose (person-rem)	6.2			
	Cancer Fatalities	3.1E-3			
	Cancer Incidence	1.1E-2	5.6E-6		
	Genetic Effects	6.2E-4			
Offsite MEI	Dose (rem)	5.8E-5			
	Cancer Fatalities	2.9E-8			
	Cancer Incidence	9.9E-8	7.2E-11		
	Genetic Effects	5.8E-9			
	Hazard Index			7.6E-8	
WM Workers 1358	Dose (FTE-rem)	5.6E2			
	Cancer Fatalities	2.3E-1			
	Cancer Incidence	7.9E-1	1.2E-3		
	Genetic Effects	3.4E-2			
	Exposure Index			5.8E-3	
	Construction Fatalities				6.5E-2
	Construction Injuries				2.8E1
	Operation Fatalities				1.6E-1
	Operation Injuries				1.4E2

Table 6.1–20. Risks Associated With Managing LLMW at WVDP Under the No Action Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 960	Dose (person-rem)	1.3E-3			
	Cancer Fatalities	6.7E-7			
	Cancer Incidence	2.3E-6	5.9E-9		
	Genetic Effects	1.3E-7			
Noninvolved Worker MEI	Dose (rem)	7.6E-6			
	Cancer Fatalities	3.8E-9			
	Cancer Incidence	1.3E-8	3.0E-11		
	Genetic Effects	7.6E-10			
	Hazard Index			2.9E-8	
Offsite Population 1698391	Dose (person-rem)	5.5E-1			
	Cancer Fatalities	2.7E-4			
	Cancer Incidence	9.3E-4	3.0E-7		
	Genetic Effects	5.5E-5			
Offsite MEI	Dose (rem)	8.2E-6			
	Cancer Fatalities	4.1E-9			
	Cancer Incidence	1.4E-8	1.0E-11		
	Genetic Effects	8.2E-10			
	Hazard Index			9.7E-9	
WM Workers 15	Dose (FTE-rem)	1.7E-1			
	Cancer Fatalities	6.7E-5			
	Cancer Incidence	2.4E-4	2.3E-9		
	Genetic Effects	1.0E-5			
	Exposure Index			8.7E-8	
	Construction Fatalities				1.0E-3
	Construction Injuries				4.5E-1
	Operation Fatalities				1.8E-3
	Operation Injuries				1.5

Table 6.1–21. Risks Associated with Routine Management of LLMW at ANL-E Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 5571	Dose (person-rem)	1.2E-2			
	Cancer Fatalities	6.1E-6			
	Cancer Incidence	2.1E-5	3.7E-7		
	Genetic Effects	1.2E-6			
Noninvolved Worker MEI	Dose (rem)	1.2E-5			
	Cancer Fatalities	6.1E-9			
	Cancer Incidence	2.1E-8	3.4E-10		
	Genetic Effects	1.2E-9			
	Hazard Index			5.4E-7	
Offsite Population 7939785	Dose (person-rem)	2.6			
	Cancer Fatalities	1.3E-3			
	Cancer Incidence	4.5E-3	1.8E-5		
	Genetic Effects	2.6E-4			
Offsite MEI	Dose (rem)	1.4E-5			
	Cancer Fatalities	7.2E-9			
	Cancer Incidence	2.5E-8	1.1E-10		
	Genetic Effects	1.4E-9			
	Hazard Index			1.8E-7	
WM Workers 886	Dose (FTE-rem)	4.8E1			
	Cancer Fatalities	1.9E-2			
	Cancer Incidence	6.7E-2	2.2E-4		
	Genetic Effects	2.9E-3			
	Exposure Index			6.0E-4	
	Construction Fatalities				1.1E-1
	Construction Injuries				4.6E1
	Operation Fatalities				1.1E-1
	Operation Injuries				9.1E1

Table 6.1–22. Risks Associated with Routine Management of LLMW at BNL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3517	Dose (person-rem)	1.4E-4			
	Cancer Fatalities	7.1E-8			
	Cancer Incidence	2.4E-7	2.5E-8		
	Genetic Effects	1.4E-8			
Noninvolved Worker MEI	Dose (rem)	1.6E-7			
	Cancer Fatalities	7.9E-11			
	Cancer Incidence	2.7E-10	1.2E-11		
	Genetic Effects	1.6E-11			
	Hazard Index			1.8E-8	
Offsite Population 5738554	Dose (person-rem)	2.4E-2			
	Cancer Fatalities	1.2E-5			
	Cancer Incidence	4.1E-5	7.3E-7		
	Genetic Effects	2.4E-6			
Offsite MEI	Dose (rem)	3.2E-7			
	Cancer Fatalities	1.6E-10			
	Cancer Incidence	5.4E-10	1.2E-11		
	Genetic Effects	3.2E-11			
	Hazard Index			1.8E-8	
WM Workers 62	Dose (FTE-rem)	3.1E-1			
	Cancer Fatalities	1.2E-4			
	Cancer Incidence	4.3E-4	1.9E-6		
	Genetic Effects	1.8E-5			
	Exposure Index			5.0E-5	
	Construction Fatalities				8.8E-3
	Construction Injuries				3.8
	Operation Fatalities				7.5E-3
	Operation Injuries				6.4

Table 6.1-23. Risks Associated with Routine Management of LLMW at FEMP Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 2456	Dose (person-rem)	3.9E-4			
	Cancer Fatalities	1.9E-7			
	Cancer Incidence	6.6E-7	2.0E-7		
	Genetic Effects	3.9E-8			
Noninvolved Worker MEI	Dose (rem)	3.4E-7			
	Cancer Fatalities	1.7E-10			
	Cancer Incidence	5.8E-10	8.9E-11		
	Genetic Effects	3.4E-11			
	Hazard Index			1.2E-7	
Offsite Population 2764589	Dose (person-rem)	5.2E-2			
	Cancer Fatalities	2.6E-5			
	Cancer Incidence	8.8E-5	2.8E-6		
	Genetic Effects	5.2E-6			
Offsite MEI	Dose (rem)	9.7E-7			
	Cancer Fatalities	4.9E-10			
	Cancer Incidence	1.7E-9	8.9E-11		
	Genetic Effects	9.7E-11			
	Hazard Index			1.2E-7	
WM Workers 533	Dose (FTE-rem)	7.3E-1			
	Cancer Fatalities	2.9E-4			
	Cancer Incidence	1.0E-3	7.3E-5		
	Genetic Effects	4.4E-5			
	Exposure Index			5.6E-4	
	Construction Fatalities				9.6E-2
	Construction Injuries				4.2E1
	Operation Fatalities				6.4E-2
	Operation Injuries				5.5E1

Table 6.1–24. Risks Associated with Routine Management of LLMW at Hanford Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8674	Dose (person-rem)	1.1E-1			
	Cancer Fatalities	5.6E-5			
	Cancer Incidence	1.9E-4	6.7E-7		
	Genetic Effects	1.1E-5			
Noninvolved Worker MEI	Dose (rem)	1.9E-4			
	Cancer Fatalities	9.7E-8			
	Cancer Incidence	3.3E-7	1.3E-9		
	Genetic Effects	1.9E-8			
	Hazard Index			1.8E-6	
Offsite Population 377645	Dose (person-rem)	2.9			
	Cancer Fatalities	1.5E-3			
	Cancer Incidence	5.0E-3	1.1E-6		
	Genetic Effects	2.9E-4			
Offsite MEI	Dose (rem)	6.0E-5			
	Cancer Fatalities	3.0E-8			
	Cancer Incidence	1.0E-7	3.8E-11		
	Genetic Effects	6.0E-9			
	Hazard Index			5.1E-8	
WM Workers 2196	Dose (FTE-rem)	2.5E2			
	Cancer Fatalities	1.0E-1			
	Cancer Incidence	3.5E-1	1.4E-3		
	Genetic Effects	1.5E-2			
	Exposure Index			3.6E-3	
	Construction Fatalities				2.6E-1
	Construction Injuries				1.1E2
	Operation Fatalities				2.7E-1
	Operation Injuries				2.3E2

Table 6.1-25. Risks Associated with Routine Management of LLMW at INEL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem)	1.4E-2			
	Cancer Fatalities	7.0E-6			
	Cancer Incidence	2.4E-5	2.4E-7		
	Genetic Effects	1.4E-6			
Noninvolved Worker MEI	Dose (rem)	1.2E-5			
	Cancer Fatalities	6.0E-9			
	Cancer Incidence	2.0E-8	2.0E-10		
	Genetic Effects	1.2E-9			
	Hazard Index			3.2E-7	
Offsite Population 153061	Dose (person-rem)	1.1E-1			
	Cancer Fatalities	5.2E-5			
	Cancer Incidence	1.8E-4	1.8E-7		
	Genetic Effects	1.1E-5			
Offsite MEI	Dose (rem)	1.3E-5			
	Cancer Fatalities	6.5E-9			
	Cancer Incidence	2.2E-8	2.5E-11		
	Genetic Effects	1.3E-9			
	Hazard Index			4.1E-8	
WM Workers 1588	Dose (FTE-rem)	2.6E2			
	Cancer Fatalities	1.0E-1			
	Cancer Incidence	3.6E-1	4.0E-4		
	Genetic Effects	1.6E-2			
	Exposure Index			1.1E-3	
	Construction Fatalities				2.4E-1
	Construction Injuries				1.0E2
	Operation Fatalities				1.9E-1
	Operation Injuries				1.6E2

Table 6.1–26. Risks Associated with Routine Management of LLMW at KAPL–K Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3896	Dose (person-rem)	3.4E-3	1.3E-9		
	Cancer Fatalities	1.7E-6			
	Cancer Incidence	5.8E-6			
	Genetic Effects	3.4E-7			
Noninvolved Worker MEI	Dose (rem)	1.6E-6	5.2E-13	9.1E-10	
	Cancer Fatalities	7.9E-10			
	Cancer Incidence	2.7E-9			
	Genetic Effects	1.6E-10			
	Hazard Index				
Offsite Population 1290172	Dose (person-rem)	6.0E-1	2.0E-8		
	Cancer Fatalities	3.0E-4			
	Cancer Incidence	1.0E-3			
	Genetic Effects	6.0E-5			
Offsite MEI	Dose (rem)	1.3E-5	5.2E-13	9.1E-10	
	Cancer Fatalities	6.7E-9			
	Cancer Incidence	2.3E-8			
	Genetic Effects	1.3E-9			
	Hazard Index				
WM Workers 44	Dose (FTE-rem)	4.5	2.5E-8	4.9E-6	5.5E-3
	Cancer Fatalities	1.8E-3			
	Cancer Incidence	6.2E-3			
	Genetic Effects	2.7E-4			
	Exposure Index				
	Construction Fatalities				2.4
	Construction Injuries				5.3E-3
	Operation Fatalities				4.5
	Operation Injuries				

Table 6.1-27. Risks Associated with Routine Management of LLMW at KCP Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 4410	Dose (person-rem)	6.4E-5			
	Cancer Fatalities	3.2E-8			
	Cancer Incidence	1.1E-7	3.2E-12		
	Genetic Effects	6.4E-9			
Noninvolved Worker MEI	Dose (rem)	4.5E-8			
	Cancer Fatalities	2.3E-11			
	Cancer Incidence	7.7E-11	0.00		
	Genetic Effects	4.5E-12			
	Hazard Index			3.2E-11	
Offsite Population 1729833	Dose (person-rem)	7.8E-3			
	Cancer Fatalities	3.9E-6			
	Cancer Incidence	1.3E-5	5.5E-11		
	Genetic Effects	7.8E-7			
Offsite MEI	Dose (rem)	3.5E-7			
	Cancer Fatalities	1.8E-10			
	Cancer Incidence	6.0E-10	0.00		
	Genetic Effects	3.5E-11			
	Hazard Index			3.2E-11	
WM Workers 1	Dose (FTE-rem)	8.5E-2			
	Cancer Fatalities	3.4E-5			
	Cancer Incidence	1.2E-4	1.5E-12		
	Genetic Effects	5.1E-6			
	Exposure Index			1.3E-8	
	Construction Fatalities				1.1E-4
	Construction Injuries				4.7E-2
	Operation Fatalities				1.1E-4
	Operation Injuries				9.7E-2

Table 6.1–28. Risks Associated with Routine Management of LLMW at LANL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 11552	Dose (person-rem)	2.4E-2	1.3E-7		
	Cancer Fatalities	1.2E-5			
	Cancer Incidence	4.0E-5			
	Genetic Effects	2.4E-6			
Noninvolved Worker MEI	Dose (rem)	1.8E-5	8.1E-11	1.6E-7	
	Cancer Fatalities	8.7E-9			
	Cancer Incidence	3.0E-8			
	Genetic Effects	1.8E-9			
	Hazard Index				
Offsite Population 159152	Dose (person-rem)	1.2	2.6E-7		
	Cancer Fatalities	5.9E-4			
	Cancer Incidence	2.0E-3			
	Genetic Effects	1.2E-4			
Offsite MEI	Dose (rem)	1.3E-4	3.2E-11	6.3E-8	
	Cancer Fatalities	6.2E-8			
	Cancer Incidence	2.1E-7			
	Genetic Effects	1.3E-8			
	Hazard Index				
WM Workers 590	Dose (FTE-rem)	3.9	4.1E-6	1.4E-5	
	Cancer Fatalities	1.6E-3			
	Cancer Incidence	5.5E-3			
	Genetic Effects	2.3E-4			
	Exposure Index				
	Construction Fatalities				1.3E-1
	Construction Injuries				5.4E1
	Operation Fatalities				7.1E-2
	Operation Injuries				6.1E1

Table 6.1-29. Risks Associated with Routine Management of LLMW at LBL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3940	Dose (person-rem)	3.0E-2	5.1E-9		
	Cancer Fatalities	1.5E-5			
	Cancer Incidence	5.1E-5			
	Genetic Effects	3.0E-6			
Noninvolved Worker MEI	Dose (rem)	2.3E-5	3.9E-12	6.6E-9	
	Cancer Fatalities	1.2E-8			
	Cancer Incidence	4.0E-8			
	Genetic Effects	2.3E-9			
	Hazard Index				
Offsite Population 1586829	Dose (person-rem)	2.0E1	1.3E-7		
	Cancer Fatalities	1.0E-2			
	Cancer Incidence	3.5E-2			
	Genetic Effects	2.0E-3			
Offsite MEI	Dose (rem)	3.2E-4	2.8E-12	4.8E-9	
	Cancer Fatalities	1.6E-7			
	Cancer Incidence	5.5E-7			
	Genetic Effects	3.2E-8			
	Hazard Index				
WM Workers 40	Dose (FTE-rem)	8.9E-2	4.8E-8	8.2E-6	
	Cancer Fatalities	3.6E-5			
	Cancer Incidence	1.3E-4			
	Genetic Effects	5.4E-6			
	Exposure Index				
	Construction Fatalities				5.3E-3
	Construction Injuries				2.3
	Operation Fatalities				4.8E-3
	Operation Injuries				4.1

Table 6.1–30. Risks Associated with Routine Management of LLMW at LLNL Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 9504	Dose (person-rem)	4.3			
	Cancer Fatalities	2.1E-3			
	Cancer Incidence	7.2E-3	1.9E-6		
	Genetic Effects	4.3E-4			
Noninvolved Worker MEI	Dose (rem)	1.5E-3			
	Cancer Fatalities	7.3E-7			
	Cancer Incidence	2.5E-6	5.6E-10		
	Genetic Effects	1.5E-7			
	Hazard Index			6.6E-7	
Offsite Population 6324234	Dose (person-rem)	3.1E2			
	Cancer Fatalities	1.5E-1			
	Cancer Incidence	5.2E-1	8.0E-6		
	Genetic Effects	3.1E-2			
Offsite MEI	Dose (rem)	5.0E-3			
	Cancer Fatalities	2.5E-6			
	Cancer Incidence	8.5E-6	1.8E-10		
	Genetic Effects	5.0E-7			
	Hazard Index			2.0E-7	
WM Workers 831	Dose (FTE-rem)	2.0E1			
	Cancer Fatalities	7.8E-3			
	Cancer Incidence	2.7E-2	9.5E-5		
	Genetic Effects	1.2E-3			
	Exposure Index			3.4E-4	
	Construction Fatalities				1.7E-1
	Construction Injuries				7.2E1
	Operation Fatalities				1.0E-1
	Operation Injuries				8.5E1

Table 6.1–31. Risks Associated with Routine Management of LLMW at Mound Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1688	Dose (person-rem)	4.4E-4			
	Cancer Fatalities	2.2E-7			
	Cancer Incidence	7.5E-7	1.6E-9		
	Genetic Effects	4.4E-8			
Noninvolved Worker MEI	Dose (rem)	7.1E-7			
	Cancer Fatalities	3.6E-10			
	Cancer Incidence	1.2E-9	1.9E-12		
	Genetic Effects	7.1E-11			
	Hazard Index			2.1E-11	
Offsite Population 3032983	Dose (person-rem)	2.5E-1			
	Cancer Fatalities	1.3E-4			
	Cancer Incidence	4.3E-4	5.8E-8		
	Genetic Effects	2.5E-5			
Offsite MEI	Dose (rem)	1.5E-5			
	Cancer Fatalities	7.4E-9			
	Cancer Incidence	2.5E-8	1.9E-12		
	Genetic Effects	1.5E-9			
	Hazard Index			2.1E-11	
WM Workers 7	Dose (FTE-rem)	3.4E-2			
	Cancer Fatalities	1.4E-5			
	Cancer Incidence	4.7E-5	4.9E-9		
	Genetic Effects	2.0E-6			
	Exposure Index			1.1E-6	
	Construction Fatalities				1.2E-3
	Construction Injuries				5.4E-1
	Operation Fatalities				8.7E-4
	Operation Injuries				7.4E-1

Table 6.1–32. Risks Associated with Routine Management of LLMW at NTS Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3756	Dose (person-rem)	3.8E-11			
	Cancer Fatalities	1.9E-14			
	Cancer Incidence	6.5E-14	2.5E-8		
	Genetic Effects	0.00			
Noninvolved Worker MEI	Dose (rem)	1.8E-13			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	1.0E-10		
	Genetic Effects	0.00			
	Hazard Index			6.4E-8	
Offsite Population 14266	Dose (person-rem)	1.5E-11			
	Cancer Fatalities	7.0E-15			
	Cancer Incidence	2.5E-14	1.8E-9		
	Genetic Effects	0.00			
Offsite MEI	Dose (rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	4.8E-13		
	Genetic Effects	0.00			
	Hazard Index			3.0E-10	
WM Workers 0	Dose (FTE-rem)	6.5E-4			
	Cancer Fatalities	2.6E-7			
	Cancer Incidence	9.1E-7	7.5E-14		
	Genetic Effects	3.9E-8			
	Exposure Index			8.1E-10	
	Construction Fatalities				1.2E-5
	Construction Injuries				5.1E-3
	Operation Fatalities				1.2E-5
	Operation Injuries				9.9E-3

Table 6.1-33. Risks Associated with Routine Management of LLMW at ORR Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3809	Dose (person-rem)	8.9E-2			
	Cancer Fatalities	4.4E-5			
	Cancer Incidence	1.5E-4	7.5E-6		
	Genetic Effects	8.9E-6			
Noninvolved Worker MEI	Dose (rem)	8.1E-5			
	Cancer Fatalities	4.0E-8			
	Cancer Incidence	1.4E-7	7.1E-9		
	Genetic Effects	8.1E-9			
	Hazard Index			8.8E-6	
Offsite Population 881652	Dose (person-rem)	2.2			
	Cancer Fatalities	1.1E-3			
	Cancer Incidence	3.7E-3	2.2E-5		
	Genetic Effects	2.2E-4			
Offsite MEI	Dose (rem)	6.7E-5			
	Cancer Fatalities	3.3E-8			
	Cancer Incidence	1.1E-7	1.2E-9		
	Genetic Effects	6.7E-9			
	Hazard Index			1.4E-6	
WM Workers 2530	Dose (FTE-rem)	4.4E2			
	Cancer Fatalities	1.8E-1			
	Cancer Incidence	6.1E-1	5.8E-3		
	Genetic Effects	2.6E-2			
	Exposure Index			1.2E-2	
	Construction Fatalities				2.9E-1
	Construction Injuries				1.3E2
	Operation Fatalities				3.1E-1
	Operation Injuries				2.6E2

Table 6.1-34. Risks Associated with Routine Management of LLMW at Pantex Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 2825	Dose (person-rem)	6.9E-3			
	Cancer Fatalities	3.5E-6			
	Cancer Incidence	1.2E-5	4.0E-9		
	Genetic Effects	6.9E-7			
Noninvolved Worker MEI	Dose (rem)	1.3E-5			
	Cancer Fatalities	6.6E-9			
	Cancer Incidence	2.3E-8	6.8E-12		
	Genetic Effects	1.3E-9			
	Hazard Index			3.0E-8	
Offsite Population 265185	Dose (person-rem)	6.9E-2			
	Cancer Fatalities	3.5E-5			
	Cancer Incidence	1.2E-4	3.5E-9		
	Genetic Effects	6.9E-6			
Offsite MEI	Dose (rem)	5.9E-6			
	Cancer Fatalities	2.9E-9			
	Cancer Incidence	1.0E-8	2.9E-13		
	Genetic Effects	5.9E-10			
	Hazard Index			1.3E-9	
WM Workers 145	Dose (FTE-rem)	8.4E-1			
	Cancer Fatalities	3.4E-4			
	Cancer Incidence	1.2E-3	8.2E-7		
	Genetic Effects	5.0E-5			
	Exposure Index			4.2E-5	
	Construction Fatalities				2.1E-2
	Construction Injuries				9.1
	Operation Fatalities				1.8E-2
	Operation Injuries				1.5E1

Table 6.1-35. Risks Associated with Routine Management of LLMW at PGDP Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1952	Dose (person-rem)	1.9E-2			
	Cancer Fatalities	9.5E-6			
	Cancer Incidence	3.2E-5	3.4E-8		
	Genetic Effects	1.9E-6			
Noninvolved Worker MEI	Dose (rem)	2.3E-5			
	Cancer Fatalities	1.2E-8			
	Cancer Incidence	3.9E-8	5.2E-11		
	Genetic Effects	2.3E-9			
	Hazard Index			2.4E-8	
Offsite Population 500502	Dose (person-rem)	2.4E-1			
	Cancer Fatalities	1.2E-4			
	Cancer Incidence	4.1E-4	6.5E-8		
	Genetic Effects	2.4E-5			
Offsite MEI	Dose (rem)	2.7E-5			
	Cancer Fatalities	1.3E-8			
	Cancer Incidence	4.5E-8	9.0E-12		
	Genetic Effects	2.7E-9			
	Hazard Index			4.1E-9	
WM Workers 144	Dose (FTE-rem)	6.0E-1			
	Cancer Fatalities	2.4E-4			
	Cancer Incidence	8.4E-4	6.2E-6		
	Genetic Effects	3.6E-5			
	Exposure Index			2.9E-4	
	Construction Fatalities				2.9E-2
	Construction Injuries				1.3E1
	Operation Fatalities				1.8E-2
	Operation Injuries				1.5E1

Table 6.1-36. Risks Associated with Routine Management of LLMW at Ports Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3226	Dose (person-rem)	5.7E-4			
	Cancer Fatalities	2.8E-7			
	Cancer Incidence	9.6E-7	1.3E-6		
	Genetic Effects	5.7E-8			
Noninvolved Worker MEI	Dose (rem)	3.2E-7			
	Cancer Fatalities	1.6E-10			
	Cancer Incidence	5.4E-10	7.4E-10		
	Genetic Effects	3.2E-11			
	Hazard Index			1.4E-6	
Offsite Population 639602	Dose (person-rem)	5.4E-3			
	Cancer Fatalities	2.7E-6			
	Cancer Incidence	9.2E-6	2.3E-6		
	Genetic Effects	5.4E-7			
Offsite MEI	Dose (rem)	6.8E-7			
	Cancer Fatalities	3.4E-10			
	Cancer Incidence	1.2E-9	3.9E-10		
	Genetic Effects	6.8E-11			
	Hazard Index			7.5E-7	
WM Workers 1853	Dose (FTE-rem)	3.6			
	Cancer Fatalities	1.4E-3			
	Cancer Incidence	5.0E-3	5.9E-4		
	Genetic Effects	2.1E-4			
	Exposure Index			2.0E-3	
	Construction Fatalities				2.5E-1
	Construction Injuries				1.1E2
	Operation Fatalities				2.2E-1
	Operation Injuries				1.9E2

Table 6.1-37. Risks Associated with Routine Management of LLMW at RFETS Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 6993	Dose (person-rem)	6.8E-3			
	Cancer Fatalities	3.4E-6			
	Cancer Incidence	1.2E-5	1.0E-6		
	Genetic Effects	6.8E-7			
Noninvolved Worker MEI	Dose (rem)	4.1E-6			
	Cancer Fatalities	2.0E-9			
	Cancer Incidence	6.9E-9	5.3E-10		
	Genetic Effects	4.1E-10			
	Hazard Index			1.8E-7	
Offsite Population 2171877	Dose (person-rem)	1.3E-1			
	Cancer Fatalities	6.7E-5			
	Cancer Incidence	2.3E-4	5.2E-6		
	Genetic Effects	1.3E-5			
Offsite MEI	Dose (rem)	1.8E-6			
	Cancer Fatalities	9.1E-10			
	Cancer Incidence	3.1E-9	4.1E-11		
	Genetic Effects	1.8E-10			
	Hazard Index			1.4E-8	
WM Workers 3507	Dose (FTE-rem)	2.6			
	Cancer Fatalities	1.0E-3			
	Cancer Incidence	3.6E-3	5.5E-4		
	Genetic Effects	1.5E-4			
	Exposure Index			3.4E-4	
	Construction Fatalities				3.5E-1
	Construction Injuries				1.5E2
	Operation Fatalities				2.8E-1
	Operation Injuries				2.4E2

Table 6.1–38. Risks Associated with Routine Management of LLMW at SNL–NM Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 10576	Dose (person-rem)	1.6E-3			
	Cancer Fatalities	7.8E-7			
	Cancer Incidence	2.7E-6	2.4E-9		
	Genetic Effects	1.6E-7			
Noninvolved Worker MEI	Dose (rem)	6.5E-7			
	Cancer Fatalities	3.2E-10			
	Cancer Incidence	1.1E-9	9.1E-13		
	Genetic Effects	6.5E-11			
	Hazard Index			3.3E-9	
Offsite Population 610714	Dose (person-rem)	2.8E-1			
	Cancer Fatalities	1.4E-4			
	Cancer Incidence	4.7E-4	2.1E-8		
	Genetic Effects	2.8E-5			
Offsite MEI	Dose (rem)	1.1E-5			
	Cancer Fatalities	5.4E-9			
	Cancer Incidence	1.9E-8	9.1E-13		
	Genetic Effects	1.1E-9			
	Hazard Index			3.3E-9	
WM Workers 20	Dose (FTE-rem)	8.2E-1			
	Cancer Fatalities	3.3E-4			
	Cancer Incidence	1.2E-3	1.7E-8		
	Genetic Effects	4.9E-5			
	Exposure Index			2.8E-6	
	Construction Fatalities				2.6E-3
	Construction Injuries				1.2
	Operation Fatalities				2.5E-3
	Operation Injuries				2.1

Table 6.1-39. Risks Associated with Routine Management of LLMW at SRS Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 15996	Dose (person-rem)	1.2E-1			
	Cancer Fatalities	6.1E-5			
	Cancer Incidence	2.1E-4	4.9E-7		
	Genetic Effects	1.2E-5			
Noninvolved Worker MEI	Dose (rem)	1.1E-4			
	Cancer Fatalities	5.3E-8			
	Cancer Incidence	1.8E-7	5.6E-10		
	Genetic Effects	1.1E-8			
	Hazard Index			6.9E-7	
Offsite Population 620618	Dose (person-rem)	3.5			
	Cancer Fatalities	1.7E-3			
	Cancer Incidence	5.9E-3	9.8E-7		
	Genetic Effects	3.5E-4			
Offsite MEI	Dose (rem)	3.3E-5			
	Cancer Fatalities	1.7E-8			
	Cancer Incidence	5.6E-8	1.3E-11		
	Genetic Effects	3.3E-9			
	Hazard Index			1.6E-8	
WM Workers 1289	Dose (FTE-rem)	2.6E2			
	Cancer Fatalities	1.1E-1			
	Cancer Incidence	3.7E-1	7.0E-4		
	Genetic Effects	1.6E-2			
	Exposure Index			5.8E-3	
	Construction Fatalities				1.7E-1
	Construction Injuries				7.5E1
	Operation Fatalities				1.6E-1
	Operation Injuries				1.3E2

Table 6.1-40. Risks Associated with Routine Management of LLMW at WVDP Under the Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 960	Dose (person-rem)	8.4E-7			
	Cancer Fatalities	4.2E-10			
	Cancer Incidence	1.4E-9	1.0E-10		
	Genetic Effects	8.4E-11			
Noninvolved Worker MEI	Dose (rem)	4.8E-9			
	Cancer Fatalities	2.4E-12			
	Cancer Incidence	8.1E-12	5.1E-13		
	Genetic Effects	4.8E-13		2.1E-10	
	Hazard Index				
Offsite Population 1698391	Dose (person-rem)	5.0E-4			
	Cancer Fatalities	2.5E-7			
	Cancer Incidence	8.6E-7	5.1E-9		
	Genetic Effects	5.0E-8			
Offsite MEI	Dose (rem)	7.6E-9			
	Cancer Fatalities	3.8E-12			
	Cancer Incidence	1.3E-11	1.7E-13		
	Genetic Effects	7.6E-13		7.1E-11	
	Hazard Index				
WM Workers 18	Dose (FTE-rem)	6.2			
	Cancer Fatalities	2.5E-3			
	Cancer Incidence	8.6E-3	1.2E-9		
	Genetic Effects	3.7E-4		9.9E-8	
	Exposure Index				
	Construction Fatalities				2.7E-3
	Construction Injuries				1.2
	Operation Fatalities				2.2E-3
	Operation Injuries				1.8

Table 6.1-41. Risks Associated with Routine Management of LLMW at ANL-E Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 5571	Dose (person-rem)	5.6E-5			
	Cancer Fatalities	2.8E-8			
	Cancer Incidence	9.6E-8	3.0E-9		
	Genetic Effects	5.6E-9			
Noninvolved Worker MEI	Dose (rem)	5.7E-8			
	Cancer Fatalities	2.8E-11			
	Cancer Incidence	9.6E-11	2.7E-12		
	Genetic Effects	5.7E-12			
	Hazard Index			3.5E-9	
Offsite Population 7939785	Dose (person-rem)	1.2E-2			
	Cancer Fatalities	6.0E-6			
	Cancer Incidence	2.1E-5	1.4E-7		
	Genetic Effects	1.2E-6			
Offsite MEI	Dose (rem)	6.6E-8			
	Cancer Fatalities	3.3E-11			
	Cancer Incidence	1.1E-10	9.1E-13		
	Genetic Effects	6.6E-12			
	Hazard Index			1.2E-9	
WM Workers 200	Dose (FTE-rem)	2.6E1			
	Cancer Fatalities	1.0E-2			
	Cancer Incidence	3.6E-2	1.1E-6		
	Genetic Effects	1.6E-3			
	Exposure Index			4.7E-6	
	Construction Fatalities				2.3E-2
	Construction Injuries				9.9
	Operation Fatalities				2.4E-2
	Operation Injuries				2.1E1

Table 6.1-42. Risks Associated with Routine Management of LLMW at BNL Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3517	Dose (person-rem)	6.4E-7			
	Cancer Fatalities	3.2E-10			
	Cancer Incidence	1.1E-9	3.1E-10		
	Genetic Effects	6.4E-11			
Noninvolved Worker MEI	Dose (rem)	7.1E-10			
	Cancer Fatalities	3.6E-13			
	Cancer Incidence	1.2E-12	1.5E-13		
	Genetic Effects	7.1E-14			
	Hazard Index			1.1E-10	
Offsite Population 5738554	Dose (person-rem)	1.1E-4			
	Cancer Fatalities	5.2E-8			
	Cancer Incidence	1.8E-7	9.0E-9		
	Genetic Effects	1.1E-8			
Offsite MEI	Dose (rem)	1.4E-9			
	Cancer Fatalities	7.0E-13			
	Cancer Incidence	2.4E-12	1.5E-13		
	Genetic Effects	1.4E-13			
	Hazard Index			1.1E-10	
WM Workers 16	Dose (FTE-rem)	1.4E-1			
	Cancer Fatalities	5.7E-5			
	Cancer Incidence	2.0E-4	1.6E-8		
	Genetic Effects	8.5E-6			
	Exposure Index			4.4E-7	
	Construction Fatalities				2.0E-3
	Construction Injuries				8.7E-1
	Operation Fatalities				2.0E-3
	Operation Injuries				1.7

Table 6.1-43. Risks Associated with Routine Management of LLMW at FEMP Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 2456	Dose (person-rem)	9.4E-3	5.5E-7		
	Cancer Fatalities	4.7E-6			
	Cancer Incidence	1.6E-5			
	Genetic Effects	9.4E-7			
Noninvolved Worker MEI	Dose (rem)	8.3E-6	2.5E-10	3.8E-7	
	Cancer Fatalities	4.1E-9			
	Cancer Incidence	1.4E-8			
	Genetic Effects	8.3E-10			
	Hazard Index				
Offsite Population 2764589	Dose (person-rem)	1.4	7.9E-6		
	Cancer Fatalities	7.0E-4			
	Cancer Incidence	2.4E-3			
	Genetic Effects	1.4E-4			
Offsite MEI	Dose (rem)	2.7E-5	2.5E-10	3.8E-7	
	Cancer Fatalities	1.3E-8			
	Cancer Incidence	4.5E-8			
	Genetic Effects	2.7E-9			
	Hazard Index				
WM Workers 1233	Dose (FTE-rem)	6.8E1	3.5E-4	1.2E-3	1.7E-1 7.5E1 1.5E-1 1.3E2
	Cancer Fatalities	2.7E-2			
	Cancer Incidence	9.5E-2			
	Genetic Effects	4.1E-3			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1–44. Risks Associated with Routine Management of LLMW at Hanford Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8674	Dose (person-rem)	1.0E-1			
	Cancer Fatalities	5.2E-5			
	Cancer Incidence	1.8E-4	6.5E-7		
	Genetic Effects	1.0E-5			
Noninvolved Worker MEI	Dose (rem)	1.8E-4			
	Cancer Fatalities	8.9E-8			
	Cancer Incidence	3.0E-7	1.3E-9		
	Genetic Effects	1.8E-8			
	Hazard Index			1.7E-6	
Offsite Population 377645	Dose (person-rem)	2.7			
	Cancer Fatalities	1.4E-3			
	Cancer Incidence	4.7E-3	1.1E-6		
	Genetic Effects	2.7E-4			
Offsite MEI	Dose (rem)	5.6E-5			
	Cancer Fatalities	2.8E-8			
	Cancer Incidence	9.6E-8	3.6E-11		
	Genetic Effects	5.6E-9			
	Hazard Index			5.0E-8	
WM Workers 2065	Dose (FTE-rem)	3.0E2			
	Cancer Fatalities	1.2E-1			
	Cancer Incidence	4.2E-1	1.4E-3		
	Genetic Effects	1.8E-2			
	Exposure Index			3.6E-3	
	Construction Fatalities				2.3E-1
	Construction Injuries				1.0E2
	Operation Fatalities				2.5E-1
	Operation Injuries				2.1E2

Table 6.1-45. Risks Associated with Routine Management of LLMW at INEL Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem)	1.4E-2			
	Cancer Fatalities	7.0E-6			
	Cancer Incidence	2.4E-5	2.4E-7		
	Genetic Effects	1.4E-6			
Noninvolved Worker MEI	Dose (rem)	1.2E-5			
	Cancer Fatalities	6.0E-9			
	Cancer Incidence	2.0E-8	2.0E-10		
	Genetic Effects	1.2E-9			
	Hazard Index			3.2E-7	
Offsite Population 153061	Dose (person-rem)	1.1E-1			
	Cancer Fatalities	5.2E-5			
	Cancer Incidence	1.8E-4	1.8E-7		
	Genetic Effects	1.1E-5			
Offsite MEI	Dose (rem)	1.3E-5			
	Cancer Fatalities	6.5E-9			
	Cancer Incidence	2.2E-8	2.5E-11		
	Genetic Effects	1.3E-9			
	Hazard Index			4.1E-8	
WM Workers 1587	Dose (FTE-rem)	2.6E2			
	Cancer Fatalities	1.0E-1			
	Cancer Incidence	3.6E-1	4.0E-4		
	Genetic Effects	1.6E-2			
	Exposure Index			1.1E-3	
	Construction Fatalities				2.4E-1
	Construction Injuries				1.0E2
	Operation Fatalities				1.9E-1
	Operation Injuries				1.6E2

Table 6.1-46. Risks Associated with Routine Management of LLMW at KAPL-K Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3896	Dose (person-rem)	5.3E-6			
	Cancer Fatalities	2.7E-9			
	Cancer Incidence	9.0E-9	1.7E-10		
	Genetic Effects	5.3E-10			
Noninvolved Worker MEI	Dose (rem)	2.5E-9			
	Cancer Fatalities	1.2E-12			
	Cancer Incidence	4.2E-12	6.7E-14		
	Genetic Effects	2.5E-13			
	Hazard Index			4.3E-12	
Offsite Population 1290172	Dose (person-rem)	5.2E-4			
	Cancer Fatalities	2.6E-7			
	Cancer Incidence	8.8E-7	2.6E-9		
	Genetic Effects	5.2E-8			
Offsite MEI	Dose (rem)	1.2E-8			
	Cancer Fatalities	5.8E-12			
	Cancer Incidence	2.0E-11	6.7E-14		
	Genetic Effects	1.2E-12			
	Hazard Index			4.3E-12	
WM Workers 9	Dose (FTE-rem)	1.6			
	Cancer Fatalities	6.3E-4			
	Cancer Incidence	2.2E-3	2.7E-9		
	Genetic Effects	9.4E-5			
	Exposure Index			1.2E-7	
	Construction Fatalities				1.1E-3
	Construction Injuries				4.8E-1
	Operation Fatalities				1.1E-3
	Operation Injuries				9.3E-1

Table 6.1-47. Risks Associated with Routine Management of LLMW at KCP Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 4410	Dose (person-rem)	6.7E-8	5.7E-13		
	Cancer Fatalities	3.3E-11			
	Cancer Incidence	1.1E-10			
	Genetic Effects	6.7E-12			
Noninvolved Worker MEI	Dose (rem)	4.7E-11	0.00	4.4E-13	
	Cancer Fatalities	2.4E-14			
	Cancer Incidence	8.0E-14			
	Genetic Effects	0.00			
	Hazard Index				
Offsite Population 1729833	Dose (person-rem)	4.9E-6	9.7E-12		
	Cancer Fatalities	2.5E-9			
	Cancer Incidence	8.3E-9			
	Genetic Effects	4.9E-10			
Offsite MEI	Dose (rem)	2.2E-10	0.00	4.4E-13	
	Cancer Fatalities	1.1E-13			
	Cancer Incidence	3.8E-13			
	Genetic Effects	2.2E-14			
	Hazard Index				
WM Workers 0	Dose (FTE-rem)	2.0E-3	2.2E-13	1.3E-9	2.9E-5 1.3E-2 2.9E-5 2.5E-2
	Cancer Fatalities	8.0E-7			
	Cancer Incidence	2.8E-6			
	Genetic Effects	1.2E-7			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-48. Risks Associated with Routine Management of LLMW at LANL Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 11552	Dose (person-rem)	2.5E-2			
	Cancer Fatalities	1.2E-5			
	Cancer Incidence	4.2E-5	1.3E-7		
	Genetic Effects	2.5E-6			
Noninvolved Worker MEI	Dose (rem)	1.8E-5			
	Cancer Fatalities	9.0E-9			
	Cancer Incidence	3.1E-8	8.1E-11		
	Genetic Effects	1.8E-9			
	Hazard Index			1.6E-7	
Offsite Population 159152	Dose (person-rem)	1.2			
	Cancer Fatalities	6.1E-4			
	Cancer Incidence	2.1E-3	2.7E-7		
	Genetic Effects	1.2E-4			
Offsite MEI	Dose (rem)	1.3E-4			
	Cancer Fatalities	6.4E-8			
	Cancer Incidence	2.2E-7	3.3E-11		
	Genetic Effects	1.3E-8			
	Hazard Index			6.5E-8	
WM Workers 597	Dose (FTE-rem)	4.5			
	Cancer Fatalities	1.8E-3			
	Cancer Incidence	6.4E-3	4.2E-6		
	Genetic Effects	2.7E-4			
	Exposure Index			1.4E-5	
	Construction Fatalities				1.3E-1
	Construction Injuries				5.5E1
	Operation Fatalities				7.2E-2
	Operation Injuries				6.1E1

Table 6.1-49. Risks Associated with Routine Management of LLMW at LBL Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3940	Dose (person-rem)	1.1E-7			
	Cancer Fatalities	5.6E-11			
	Cancer Incidence	1.9E-10	6.0E-10		
	Genetic Effects	1.1E-11			
Noninvolved Worker MEI	Dose (rem)	8.8E-11			
	Cancer Fatalities	4.4E-14			
	Cancer Incidence	1.5E-13	4.5E-13		
	Genetic Effects	9.0E-15			
	Hazard Index			1.1E-10	
Offsite Population 1586829	Dose (person-rem)	2.0E-5			
	Cancer Fatalities	9.8E-9			
	Cancer Incidence	3.3E-8	1.6E-8		
	Genetic Effects	2.0E-9			
Offsite MEI	Dose (rem)	2.9E-10			
	Cancer Fatalities	1.5E-13			
	Cancer Incidence	5.0E-13	3.3E-13		
	Genetic Effects	2.9E-14			
	Hazard Index			8.0E-11	
WM Workers 8	Dose (FTE-rem)	5.3E-2			
	Cancer Fatalities	2.1E-5			
	Cancer Incidence	7.4E-5	6.7E-9		
	Genetic Effects	3.2E-6			
	Exposure Index			3.2E-7	
	Construction Fatalities				9.4E-4
	Construction Injuries				4.1E-1
	Operation Fatalities				9.4E-4
	Operation Injuries				8.0E-1

Table 6.1–50. Risks Associated with Routine Management of LLMW at LLNL Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 9504	Dose (person-rem)	4.3			
	Cancer Fatalities	2.2E-3			
	Cancer Incidence	7.3E-3	2.0E-6		
	Genetic Effects	4.3E-4			
Noninvolved Worker MEI	Dose (rem)	1.5E-3			
	Cancer Fatalities	7.4E-7			
	Cancer Incidence	2.5E-6	6.0E-10		
	Genetic Effects	1.5E-7			
	Hazard Index			6.7E-7	
Offsite Population 6324234	Dose (person-rem)	3.1E2			
	Cancer Fatalities	1.6E-1			
	Cancer Incidence	5.3E-1	8.4E-6		
	Genetic Effects	3.1E-2			
Offsite MEI	Dose (rem)	5.1E-3			
	Cancer Fatalities	2.6E-6			
	Cancer Incidence	8.7E-6	1.9E-10		
	Genetic Effects	5.1E-7			
	Hazard Index			2.1E-7	
WM Workers 915	Dose (FTE-rem)	5.8E1			
	Cancer Fatalities	2.3E-2			
	Cancer Incidence	8.1E-2	1.0E-4		
	Genetic Effects	3.5E-3			
	Exposure Index			3.5E-4	
	Construction Fatalities				1.8E-1
	Construction Injuries				7.7E1
	Operation Fatalities				1.1E-1
	Operation Injuries				9.4E1

Table 6.1–51. Risks Associated with Routine Management of LLMW at Mound Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1688	Dose (person-rem)	9.7E-8			
	Cancer Fatalities	4.9E-11			
	Cancer Incidence	1.7E-10	1.5E-9		
	Genetic Effects	9.7E-12			
Noninvolved Worker MEI	Dose (rem)	1.5E-10			
	Cancer Fatalities	7.7E-14			
	Cancer Incidence	2.6E-13	1.7E-12		
	Genetic Effects	1.5E-14			
	Hazard Index			9.2E-12	
Offsite Population 3032983	Dose (person-rem)	1.2E-5			
	Cancer Fatalities	5.9E-9			
	Cancer Incidence	2.0E-8	5.3E-8		
	Genetic Effects	1.2E-9			
Offsite MEI	Dose (rem)	6.8E-10			
	Cancer Fatalities	3.4E-13			
	Cancer Incidence	1.2E-12	1.7E-12		
	Genetic Effects	6.8E-14			
	Hazard Index			9.2E-12	
WM Workers 5	Dose (FTE-rem)	3.1E-2			
	Cancer Fatalities	1.2E-5			
	Cancer Incidence	4.3E-5	4.3E-9		
	Genetic Effects	1.9E-6			
	Exposure Index			3.4E-7	
	Construction Fatalities				5.5E-4
	Construction Injuries				2.4E-1
	Operation Fatalities				5.5E-4
	Operation Injuries				4.7E-1

Table 6.1–52. Risks Associated with Routine Management of LLMW at NTS Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3756	Dose (person-rem)	3.8E-11			
	Cancer Fatalities	1.9E-14			
	Cancer Incidence	6.4E-14	2.5E-8		
	Genetic Effects	0.00			
Noninvolved Worker MEI	Dose (rem)	1.8E-13			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	1.0E-10		
	Genetic Effects	0.00			
	Hazard Index			6.4E-8	
Offsite Population 14266	Dose (person-rem)	1.5E-11			
	Cancer Fatalities	7.0E-15			
	Cancer Incidence	2.5E-14	1.8E-9		
	Genetic Effects	0.00			
Offsite MEI	Dose (rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	4.8E-13		
	Genetic Effects	0.00			
	Hazard Index			3.0E-10	
WM Workers 1	Dose (FTE-rem)	1.2E-2			
	Cancer Fatalities	4.6E-6			
	Cancer Incidence	1.6E-5	7.5E-14		
	Genetic Effects	6.9E-7			
	Exposure Index			8.1E-10	
	Construction Fatalities				5.4E-5
	Construction Injuries				2.3E-2
	Operation Fatalities				6.6E-5
	Operation Injuries				5.6E-2

Table 6.1–53. Risks Associated with Routine Management of LLMW at ORR Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3809	Dose (person-rem)	7.7E-2			
	Cancer Fatalities	3.8E-5			
	Cancer Incidence	1.3E-4	6.5E-6		
	Genetic Effects	7.7E-6			
Noninvolved Worker MEI	Dose (rem)	6.9E-5			
	Cancer Fatalities	3.5E-8			
	Cancer Incidence	1.2E-7	6.2E-9		
	Genetic Effects	6.9E-9			
	Hazard Index			8.7E-6	
Offsite Population 881652	Dose (person-rem)	1.9			
	Cancer Fatalities	9.3E-4			
	Cancer Incidence	3.2E-3	1.9E-5		
	Genetic Effects	1.9E-4			
Offsite MEI	Dose (rem)	5.7E-5			
	Cancer Fatalities	2.9E-8			
	Cancer Incidence	9.7E-8	1.0E-9		
	Genetic Effects	5.7E-9			
	Hazard Index			1.4E-6	
WM Workers 2162	Dose (FTE-rem)	2.8E2			
	Cancer Fatalities	1.1E-1			
	Cancer Incidence	3.9E-1	5.1E-3		
	Genetic Effects	1.7E-2			
	Exposure Index			1.2E-2	
	Construction Fatalities				2.2E-1
	Construction Injuries				9.4E1
	Operation Fatalities				2.6E-1
	Operation Injuries				2.2E2

Table 6.1-54. Risks Associated with Routine Management of LLMW at Pantex Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 2825	Dose (person-rem)	6.9E-3			
	Cancer Fatalities	3.5E-6			
	Cancer Incidence	1.2E-5	4.0E-9		
	Genetic Effects	6.9E-7			
Noninvolved Worker MEI	Dose (rem)	1.3E-5			
	Cancer Fatalities	6.6E-9			
	Cancer Incidence	2.3E-8	6.8E-12		
	Genetic Effects	1.3E-9			
	Hazard Index			3.0E-8	
Offsite Population 265185	Dose (person-rem)	6.9E-2			
	Cancer Fatalities	3.5E-5			
	Cancer Incidence	1.2E-4	3.5E-9		
	Genetic Effects	6.9E-6			
Offsite MEI	Dose (rem)	5.9E-6			
	Cancer Fatalities	2.9E-9			
	Cancer Incidence	1.0E-8	2.9E-13		
	Genetic Effects	5.9E-10			
	Hazard Index			1.3E-9	
WM Workers 145	Dose (FTE-rem)	8.4E-1			
	Cancer Fatalities	3.4E-4			
	Cancer Incidence	1.2E-3	8.2E-7		
	Genetic Effects	5.0E-5			
	Exposure Index			4.2E-5	
	Construction Fatalities				2.1E-2
	Construction Injuries				9.1
	Operation Fatalities				1.8E-2
	Operation Injuries				1.5E1

Table 6.1–55. Risks Associated with Routine Management of LLMW at PGDP Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1952	Dose (person-rem)	1.9E-2			
	Cancer Fatalities	9.5E-6			
	Cancer Incidence	3.2E-5	3.4E-8		
	Genetic Effects	1.9E-6			
Noninvolved Worker MEI	Dose (rem)	2.3E-5			
	Cancer Fatalities	1.2E-8			
	Cancer Incidence	3.9E-8	5.2E-11		
	Genetic Effects	2.3E-9			
	Hazard Index			2.4E-8	
Offsite Population 500502	Dose (person-rem)	2.4E-1			
	Cancer Fatalities	1.2E-4			
	Cancer Incidence	4.1E-4	6.5E-8		
	Genetic Effects	2.4E-5			
Offsite MEI	Dose (rem)	2.7E-5			
	Cancer Fatalities	1.3E-8			
	Cancer Incidence	4.5E-8	9.0E-12		
	Genetic Effects	2.7E-9			
	Hazard Index			4.1E-9	
WM Workers 144	Dose (FTE-rem)	9.8E-1			
	Cancer Fatalities	3.9E-4			
	Cancer Incidence	1.4E-3	6.2E-6		
	Genetic Effects	5.9E-5			
	Exposure Index			2.9E-4	
	Construction Fatalities				2.9E-2
	Construction Injuries				1.3E1
	Operation Fatalities				1.8E-2
	Operation Injuries				1.5E1

Table 6.1-56. Risks Associated with Routine Management of LLMW at Ports Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3226	Dose (person-rem)	5.4E-3			
	Cancer Fatalities	2.7E-6			
	Cancer Incidence	9.1E-6	1.3E-6		
	Genetic Effects	5.4E-7			
Noninvolved Worker MEI	Dose (rem)	3.0E-6			
	Cancer Fatalities	1.5E-9			
	Cancer Incidence	5.2E-9	7.4E-10		
	Genetic Effects	3.0E-10			
	Hazard Index			1.5E-6	
Offsite Population 639602	Dose (person-rem)	9.7E-2			
	Cancer Fatalities	4.9E-5			
	Cancer Incidence	1.7E-4	2.3E-6		
	Genetic Effects	9.7E-6			
Offsite MEI	Dose (rem)	1.2E-5			
	Cancer Fatalities	6.0E-9			
	Cancer Incidence	2.1E-8	3.8E-10		
	Genetic Effects	1.2E-9			
	Hazard Index			7.6E-7	
WM Workers 1353	Dose (FTE-rem)	1.5E2			
	Cancer Fatalities	5.9E-2			
	Cancer Incidence	2.1E-1	5.8E-4		
	Genetic Effects	8.9E-3			
	Exposure Index			2.0E-3	
	Construction Fatalities				1.8E-1
	Construction Injuries				7.8E1
	Operation Fatalities				1.6E-1
	Operation Injuries				1.4E2

Table 6.1-57. Risks Associated with Routine Management of LLMW at RFETS Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 6993	Dose (person-rem)	6.8E-3			
	Cancer Fatalities	3.4E-6			
	Cancer Incidence	1.2E-5	1.0E-6		
	Genetic Effects	6.8E-7			
Noninvolved Worker MEI	Dose (rem)	4.1E-6			
	Cancer Fatalities	2.0E-9			
	Cancer Incidence	6.9E-9	5.3E-10		
	Genetic Effects	4.1E-10			
	Hazard Index			1.8E-7	
Offsite Population 2171877	Dose (person-rem)	1.3E-1			
	Cancer Fatalities	6.7E-5			
	Cancer Incidence	2.3E-4	5.2E-6		
	Genetic Effects	1.3E-5			
Offsite MEI	Dose (rem)	1.8E-6			
	Cancer Fatalities	9.0E-10			
	Cancer Incidence	3.1E-9	4.1E-11		
	Genetic Effects	1.8E-10			
	Hazard Index			1.4E-8	
WM Workers 3506	Dose (FTE-rem)	2.6			
	Cancer Fatalities	1.0E-3			
	Cancer Incidence	3.6E-3	5.5E-4		
	Genetic Effects	1.5E-4			
	Exposure Index			3.4E-4	
	Construction Fatalities				3.5E-1
	Construction Injuries				1.5E2
	Operation Fatalities				2.8E-1
	Operation Injuries				2.4E2

Table 6.1–58. Risks Associated with Routine Management of LLMW at SNL–NM Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 10576	Dose (person-rem)	6.9E-7			
	Cancer Fatalities	3.5E-10			
	Cancer Incidence	1.2E-9	6.0E-11		
	Genetic Effects	6.9E-11			
Noninvolved Worker MEI	Dose (rem)	2.9E-10			
	Cancer Fatalities	1.4E-13			
	Cancer Incidence	4.9E-13	2.3E-14		
	Genetic Effects	2.9E-14			
	Hazard Index			3.4E-11	
Offsite Population 610714	Dose (person-rem)	3.6E-5			
	Cancer Fatalities	1.8E-8			
	Cancer Incidence	6.1E-8	5.4E-10		
	Genetic Effects	3.6E-9			
Offsite MEI	Dose (rem)	1.4E-9			
	Cancer Fatalities	7.1E-13			
	Cancer Incidence	2.4E-12	2.3E-14		
	Genetic Effects	1.4E-13			
	Hazard Index			3.4E-11	
WM Workers 5	Dose (FTE-rem)	4.3E-2			
	Cancer Fatalities	1.7E-5			
	Cancer Incidence	6.1E-5	3.4E-10		
	Genetic Effects	2.6E-6			
	Exposure Index			4.9E-8	
	Construction Fatalities				5.9E-4
	Construction Injuries				2.6E-1
	Operation Fatalities				5.9E-4
	Operation Injuries				5.0E-1

Table 6.1–59. Risks Associated with Routine Management of LLMW at SRS Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 15996	Dose (person-rem)	1.2E-1			
	Cancer Fatalities	6.1E-5			
	Cancer Incidence	2.1E-4	4.9E-7		
	Genetic Effects	1.2E-5			
Noninvolved Worker MEI	Dose (rem)	1.1E-4			
	Cancer Fatalities	5.3E-8			
	Cancer Incidence	1.8E-7	5.6E-10		
	Genetic Effects	1.1E-8			
	Hazard Index			6.9E-7	
Offsite Population 620618	Dose (person-rem)	3.5			
	Cancer Fatalities	1.8E-3			
	Cancer Incidence	6.0E-3	9.8E-7		
	Genetic Effects	3.5E-4			
Offsite MEI	Dose (rem)	3.3E-5			
	Cancer Fatalities	1.7E-8			
	Cancer Incidence	5.7E-8	1.3E-11		
	Genetic Effects	3.3E-9			
	Hazard Index			1.6E-8	
WM Workers 1290	Dose (FTE-rem)	2.7E2			
	Cancer Fatalities	1.1E-1			
	Cancer Incidence	3.8E-1	7.0E-4		
	Genetic Effects	1.6E-2			
	Exposure Index			5.9E-3	
	Construction Fatalities				1.7E-1
	Construction Injuries				7.5E1
	Operation Fatalities				1.6E-1
	Operation Injuries				1.3E2

Table 6.1-60. Risks Associated with Routine Management of LLMW at WVDP Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 960	Dose (person-rem)	4.4E-7			
	Cancer Fatalities	2.2E-10			
	Cancer Incidence	7.5E-10	8.9E-11		
	Genetic Effects	4.4E-11			
Noninvolved Worker MEI	Dose (rem)	2.5E-9			
	Cancer Fatalities	1.3E-12			
	Cancer Incidence	4.3E-12	4.5E-13		
	Genetic Effects	2.5E-13			
	Hazard Index			6.2E-11	
Offsite Population 1698391	Dose (person-rem)	3.4E-4			
	Cancer Fatalities	1.7E-7			
	Cancer Incidence	5.8E-7	4.5E-9		
	Genetic Effects	3.4E-8			
Offsite MEI	Dose (rem)	5.2E-9			
	Cancer Fatalities	2.6E-12			
	Cancer Incidence	8.8E-12	1.5E-13		
	Genetic Effects	5.2E-13			
	Hazard Index			2.1E-11	
WM Workers 10	Dose (FTE-rem)	6.9E-2			
	Cancer Fatalities	2.8E-5			
	Cancer Incidence	9.7E-5	1.1E-9		
	Genetic Effects	4.1E-6			
	Exposure Index			8.7E-8	
	Construction Fatalities				2.0E-3
	Construction Injuries				8.6E-1
	Operation Fatalities				1.2E-3
	Operation Injuries				1.1

Table 6.1–61. Risks Associated with Routine Management of LLMW at ANL-E Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 5571	Dose (person-rem)	5.6E-5	3.0E-9		
	Cancer Fatalities	2.8E-8			
	Cancer Incidence	9.6E-8			
	Genetic Effects	5.6E-9			
Noninvolved Worker MEI	Dose (rem)	5.7E-8	2.7E-12	3.5E-9	
	Cancer Fatalities	2.8E-11			
	Cancer Incidence	9.6E-11			
	Genetic Effects	5.7E-12			
	Hazard Index				
Offsite Population 7939785	Dose (person-rem)	1.2E-2	1.4E-7		
	Cancer Fatalities	6.0E-6			
	Cancer Incidence	2.1E-5			
	Genetic Effects	1.2E-6			
Offsite MEI	Dose (rem)	6.6E-8	9.1E-13	1.2E-9	
	Cancer Fatalities	3.3E-11			
	Cancer Incidence	1.1E-10			
	Genetic Effects	6.6E-12			
	Hazard Index				
WM Workers 200	Dose (FTE-rem)	2.6E1	1.1E-6	4.7E-6	2.3E-2 9.9 2.4E-2 2.1E1
	Cancer Fatalities	1.0E-2			
	Cancer Incidence	3.6E-2			
	Genetic Effects	1.6E-3			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-62. Risks Associated with Routine Management of LLMW at BNL Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3517	Dose (person-rem)	6.4E-7	3.1E-10		
	Cancer Fatalities	3.2E-10			
	Cancer Incidence	1.1E-9			
	Genetic Effects	6.4E-11			
Noninvolved Worker MEI	Dose (rem)	7.1E-10	1.5E-13	1.1E-10	
	Cancer Fatalities	3.6E-13			
	Cancer Incidence	1.2E-12			
	Genetic Effects	7.1E-14			
	Hazard Index				
Offsite Population 5738554	Dose (person-rem)	1.1E-4	9.0E-9		
	Cancer Fatalities	5.2E-8			
	Cancer Incidence	1.8E-7			
	Genetic Effects	1.1E-8			
Offsite MEI	Dose (rem)	1.4E-9	1.5E-13	1.1E-10	
	Cancer Fatalities	7.0E-13			
	Cancer Incidence	2.4E-12			
	Genetic Effects	1.4E-13			
	Hazard Index				
WM Workers 16	Dose (FTE-rem)	1.4E-1	1.6E-8	4.4E-7	2.0E-3 8.7E-1 2.0E-3 1.7
	Cancer Fatalities	5.7E-5			
	Cancer Incidence	2.0E-4			
	Genetic Effects	8.5E-6			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1–63. Risks Associated with Routine Management of LLMW at FEMP Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 2456	Dose (person-rem)	2.2E-6			
	Cancer Fatalities	1.1E-9			
	Cancer Incidence	3.7E-9	6.4E-9		
	Genetic Effects	2.2E-10			
Noninvolved Worker MEI	Dose (rem)	1.9E-9			
	Cancer Fatalities	9.4E-13			
	Cancer Incidence	3.2E-12	2.9E-12		
	Genetic Effects	1.9E-13			
	Hazard Index			6.3E-10	
Offsite Population 2764589	Dose (person-rem)	2.9E-4			
	Cancer Fatalities	1.4E-7			
	Cancer Incidence	4.9E-7	9.2E-8		
	Genetic Effects	2.9E-8			
Offsite MEI	Dose (rem)	5.4E-9			
	Cancer Fatalities	2.7E-12			
	Cancer Incidence	9.2E-12	2.9E-12		
	Genetic Effects	5.4E-13			
	Hazard Index			6.3E-10	
WM Workers 269	Dose (FTE-rem)	6.3E-1			
	Cancer Fatalities	2.5E-4			
	Cancer Incidence	8.8E-4	1.5E-6		
	Genetic Effects	3.8E-5			
	Exposure Index			6.7E-6	
	Construction Fatalities				5.6E-2
	Construction Injuries				2.4E1
	Operation Fatalities				3.3E-2
	Operation Injuries				2.8E1

Table 6.1-64. Risks Associated with Routine Management of LLMW at Hanford Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8674	Dose (person-rem)	3.5E-1			
	Cancer Fatalities	1.8E-4			
	Cancer Incidence	6.0E-4	7.1E-7		
	Genetic Effects	3.5E-5			
Noninvolved Worker MEI	Dose (rem)	6.1E-4			
	Cancer Fatalities	3.1E-7			
	Cancer Incidence	1.0E-6	1.4E-9		
	Genetic Effects	6.1E-8			
	Hazard Index			1.9E-6	
Offsite Population 377645	Dose (person-rem)	2.6E1			
	Cancer Fatalities	1.3E-2			
	Cancer Incidence	4.5E-2	1.2E-6		
	Genetic Effects	2.6E-3			
Offsite MEI	Dose (rem)	5.4E-4			
	Cancer Fatalities	2.7E-7			
	Cancer Incidence	9.2E-7	4.0E-11		
	Genetic Effects	5.4E-8			
	Hazard Index			5.5E-8	
WM Workers 2132	Dose (FTE-rem)	3.5E2			
	Cancer Fatalities	1.4E-1			
	Cancer Incidence	4.9E-1	1.5E-3		
	Genetic Effects	2.1E-2			
	Exposure Index			4.0E-3	
	Construction Fatalities				2.4E-1
	Construction Injuries				1.0E2
	Operation Fatalities				2.6E-1
	Operation Injuries				2.2E2

Table 6.1–65. Risks Associated with Routine Management of LLMW at INEL Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem)	9.0E-2			
	Cancer Fatalities	4.5E-5			
	Cancer Incidence	1.5E-4	2.7E-7		
	Genetic Effects	9.0E-6			
Noninvolved Worker MEI	Dose (rem)	7.8E-5			
	Cancer Fatalities	3.9E-8			
	Cancer Incidence	1.3E-7	2.2E-10		
	Genetic Effects	7.8E-9			
	Hazard Index			3.5E-7	
Offsite Population 153061	Dose (person-rem)	1.3			
	Cancer Fatalities	6.3E-4			
	Cancer Incidence	2.1E-3	2.0E-7		
	Genetic Effects	1.3E-4			
Offsite MEI	Dose (rem)	1.6E-4			
	Cancer Fatalities	7.8E-8			
	Cancer Incidence	2.7E-7	2.8E-11		
	Genetic Effects	1.6E-8			
	Hazard Index			4.3E-8	
WM Workers 2010	Dose (FTE-rem)	2.8E2			
	Cancer Fatalities	1.1E-1			
	Cancer Incidence	3.9E-1	5.1E-4		
	Genetic Effects	1.7E-2			
	Exposure Index			1.3E-3	
	Construction Fatalities				3.1E-1
	Construction Injuries				1.3E2
	Operation Fatalities				2.4E-1
	Operation Injuries				2.1E2

Table 6.1-66. Risks Associated with Routine Management of LLMW at KAPL-K Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3896	Dose (person-rem)	5.3E-6			
	Cancer Fatalities	2.7E-9			
	Cancer Incidence	9.0E-9	1.7E-10		
	Genetic Effects	5.3E-10			
Noninvolved Worker MEI	Dose (rem)	2.5E-9			
	Cancer Fatalities	1.2E-12			
	Cancer Incidence	4.2E-12	6.7E-14		
	Genetic Effects	2.5E-13			
	Hazard Index			4.3E-12	
Offsite Population 1290172	Dose (person-rem)	5.2E-4			
	Cancer Fatalities	2.6E-7			
	Cancer Incidence	8.8E-7	2.6E-9		
	Genetic Effects	5.2E-8			
Offsite MEI	Dose (rem)	1.2E-8			
	Cancer Fatalities	5.8E-12			
	Cancer Incidence	2.0E-11	6.7E-14		
	Genetic Effects	1.2E-12			
	Hazard Index			4.3E-12	
WM Workers 9	Dose (FTE-rem)	1.6			
	Cancer Fatalities	6.3E-4			
	Cancer Incidence	2.2E-3	2.7E-9		
	Genetic Effects	9.4E-5			
	Exposure Index			1.2E-7	
	Construction Fatalities				1.1E-3
	Construction Injuries				4.8E-1
	Operation Fatalities				1.1E-3
	Operation Injuries				9.3E-1

Table 6.1-67. Risks Associated with Routine Management of LLMW at KCP Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 4410	Dose (person-rem)	6.7E-8			
	Cancer Fatalities	3.3E-11			
	Cancer Incidence	1.1E-10	5.7E-13		
	Genetic Effects	6.7E-12			
Noninvolved Worker MEI	Dose (rem)	4.7E-11			
	Cancer Fatalities	2.4E-14			
	Cancer Incidence	8.0E-14	0.00		
	Genetic Effects	0.00			
	Hazard Index			4.4E-13	
Offsite Population 1729833	Dose (person-rem)	4.9E-6			
	Cancer Fatalities	2.5E-9			
	Cancer Incidence	8.3E-9	9.7E-12		
	Genetic Effects	4.9E-10			
Offsite MEI	Dose (rem)	2.2E-10			
	Cancer Fatalities	1.1E-13			
	Cancer Incidence	3.8E-13	0.00		
	Genetic Effects	2.2E-14			
	Hazard Index			4.4E-13	
WM Workers 0	Dose (FTE-rem)	2.0E-3			
	Cancer Fatalities	8.0E-7			
	Cancer Incidence	2.8E-6	2.2E-13		
	Genetic Effects	1.2E-7			
	Exposure Index			1.3E-9	
	Construction Fatalities				2.9E-5
	Construction Injuries				1.3E-2
	Operation Fatalities				2.9E-5
	Operation Injuries				2.5E-2

Table 6.1-68. Risks Associated with Routine Management of LLMW at LANL Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 11552	Dose (person-rem)	3.5E-2			
	Cancer Fatalities	1.7E-5			
	Cancer Incidence	5.9E-5	3.4E-6		
	Genetic Effects	3.5E-6			
Noninvolved Worker MEI	Dose (rem)	2.6E-5			
	Cancer Fatalities	1.3E-8			
	Cancer Incidence	4.3E-8	2.1E-9		
	Genetic Effects	2.6E-9			
	Hazard Index			6.5E-7	
Offsite Population 159152	Dose (person-rem)	1.7			
	Cancer Fatalities	8.6E-4			
	Cancer Incidence	2.9E-3	6.9E-6		
	Genetic Effects	1.7E-4			
Offsite MEI	Dose (rem)	1.8E-4			
	Cancer Fatalities	9.1E-8			
	Cancer Incidence	3.1E-7	8.5E-10		
	Genetic Effects	1.8E-8			
	Hazard Index			2.6E-7	
WM Workers 679	Dose (FTE-rem)	5.9			
	Cancer Fatalities	2.3E-3			
	Cancer Incidence	8.2E-3	6.1E-6		
	Genetic Effects	3.5E-4			
	Exposure Index			5.1E-5	
	Construction Fatalities				1.3E-1
	Construction Injuries				5.8E1
	Operation Fatalities				8.2E-2
	Operation Injuries				7.0E1

Table 6.1–69. Risks Associated with Routine Management of LLMW at LBL Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3940	Dose (person-rem)	1.1E-7			
	Cancer Fatalities	5.6E-11			
	Cancer Incidence	1.9E-10	6.0E-10		
	Genetic Effects	1.1E-11			
Noninvolved Worker MEI	Dose (rem)	8.8E-11			
	Cancer Fatalities	4.4E-14			
	Cancer Incidence	1.5E-13	4.5E-13		
	Genetic Effects	9.0E-15			
	Hazard Index			1.1E-10	
Offsite Population 1586829	Dose (person-rem)	2.0E-5			
	Cancer Fatalities	9.8E-9			
	Cancer Incidence	3.3E-8	1.6E-8		
	Genetic Effects	2.0E-9			
Offsite MEI	Dose (rem)	2.9E-10			
	Cancer Fatalities	1.5E-13			
	Cancer Incidence	5.0E-13	3.3E-13		
	Genetic Effects	2.9E-14			
	Hazard Index			8.0E-11	
WM Workers 8	Dose (FTE-rem)	5.3E-2			
	Cancer Fatalities	2.1E-5			
	Cancer Incidence	7.4E-5	6.7E-9		
	Genetic Effects	3.2E-6			
	Exposure Index			3.2E-7	
	Construction Fatalities				9.4E-4
	Construction Injuries				4.1E-1
	Operation Fatalities				9.4E-4
	Operation Injuries				8.0E-1

Table 6.1-70. Risks Associated with Routine Management of LLMW at LLNL Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 9504	Dose (person-rem)	4.1E-5			
	Cancer Fatalities	2.0E-8			
	Cancer Incidence	6.9E-8	1.1E-7		
	Genetic Effects	4.1E-9			
Noninvolved Worker MEI	Dose (rem)	1.4E-8			
	Cancer Fatalities	6.9E-12			
	Cancer Incidence	2.3E-11	3.2E-11		
	Genetic Effects	1.4E-12			
	Hazard Index			7.9E-9	
Offsite Population 6324234	Dose (person-rem)	8.8E-4			
	Cancer Fatalities	4.4E-7			
	Cancer Incidence	1.5E-6	4.5E-7		
	Genetic Effects	8.8E-8			
Offsite MEI	Dose (rem)	1.4E-8			
	Cancer Fatalities	7.2E-12			
	Cancer Incidence	2.5E-11	1.0E-11		
	Genetic Effects	1.4E-12			
	Hazard Index			2.5E-9	
WM Workers 136	Dose (FTE-rem)	1.5			
	Cancer Fatalities	6.2E-4			
	Cancer Incidence	2.2E-3	2.9E-6		
	Genetic Effects	9.2E-5			
	Exposure Index			8.5E-6	
	Construction Fatalities				1.6E-2
	Construction Injuries				7.1
	Operation Fatalities				1.7E-2
	Operation Injuries				1.4E1

Table 6.1–71. Risks Associated with Routine Management of LLMW at Mound Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1688	Dose (person-rem)	9.7E-8			
	Cancer Fatalities	4.9E-11			
	Cancer Incidence	1.7E-10	1.5E-9		
	Genetic Effects	9.7E-12			
Noninvolved Worker MEI	Dose (rem)	1.5E-10			
	Cancer Fatalities	7.7E-14			
	Cancer Incidence	2.6E-13	1.7E-12		
	Genetic Effects	1.5E-14			
	Hazard Index			9.2E-12	
Offsite Population 3032983	Dose (person-rem)	1.2E-5			
	Cancer Fatalities	5.9E-9			
	Cancer Incidence	2.0E-8	5.3E-8		
	Genetic Effects	1.2E-9			
Offsite MEI	Dose (rem)	6.8E-10			
	Cancer Fatalities	3.4E-13			
	Cancer Incidence	1.2E-12	1.7E-12		
	Genetic Effects	6.8E-14			
	Hazard Index			9.2E-12	
WM Workers 5	Dose (FTE-rem)	3.1E-2			
	Cancer Fatalities	1.2E-5			
	Cancer Incidence	4.3E-5	4.3E-9		
	Genetic Effects	1.9E-6			
	Exposure Index			3.4E-7	
	Construction Fatalities				5.5E-4
	Construction Injuries				2.4E-1
	Operation Fatalities				5.5E-4
	Operation Injuries				4.7E-1

Table 6.1-72. Risks Associated with Routine Management of LLMW at NTS Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3756	Dose (person-rem)	3.8E-11			
	Cancer Fatalities	1.9E-14			
	Cancer Incidence	6.5E-14	9.2E-14		
	Genetic Effects	0.00			
Noninvolved Worker MEI	Dose (rem)	1.8E-13			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
	Hazard Index			0.00	
Offsite Population 14266	Dose (person-rem)	1.5E-11			
	Cancer Fatalities	7.0E-15			
	Cancer Incidence	2.5E-14	0.00		
	Genetic Effects	0.00			
Offsite MEI	Dose (rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
	Hazard Index			0.00	
WM Workers 0	Dose (FTE-rem)	6.5E-4			
	Cancer Fatalities	2.6E-7			
	Cancer Incidence	9.1E-7	7.5E-14		
	Genetic Effects	3.9E-8			
	Exposure Index			8.1E-10	
	Construction Fatalities				1.2E-5
	Construction Injuries				5.1E-3
	Operation Fatalities				1.2E-5
	Operation Injuries				9.9E-3

Table 6.1–73. Risks Associated with Routine Management of LLMW at ORR Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3809	Dose (person-rem)	1.0E-1			
	Cancer Fatalities	5.0E-5			
	Cancer Incidence	1.7E-4	6.5E-6		
	Genetic Effects	1.0E-5			
Noninvolved Worker MEI	Dose (rem)	9.1E-5			
	Cancer Fatalities	4.5E-8			
	Cancer Incidence	1.5E-7	6.2E-9		
	Genetic Effects	9.1E-9			
	Hazard Index			8.8E-6	
Offsite Population 881652	Dose (person-rem)	2.4			
	Cancer Fatalities	1.2E-3			
	Cancer Incidence	4.1E-3	1.9E-5		
	Genetic Effects	2.4E-4			
Offsite MEI	Dose (rem)	7.3E-5			
	Cancer Fatalities	3.6E-8			
	Cancer Incidence	1.2E-7	1.0E-9		
	Genetic Effects	7.3E-9			
	Hazard Index			1.4E-6	
WM Workers 2177	Dose (FTE-rem)	3.0E2			
	Cancer Fatalities	1.2E-1			
	Cancer Incidence	4.2E-1	5.2E-3		
	Genetic Effects	1.8E-2			
	Exposure Index			1.3E-2	
	Construction Fatalities				2.2E-1
	Construction Injuries				9.5E1
	Operation Fatalities				2.6E-1
	Operation Injuries				2.2E2

Table 6.1–74. Risks Associated with Routine Management of LLMW at Pantex Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 2825	Dose (person-rem)	4.7E-4			
	Cancer Fatalities	2.3E-7			
	Cancer Incidence	7.9E-7	4.1E-10		
	Genetic Effects	4.7E-8			
Noninvolved Worker MEI	Dose (rem)	8.9E-7			
	Cancer Fatalities	4.4E-10			
	Cancer Incidence	1.5E-9	7.0E-13		
	Genetic Effects	8.9E-11			
	Hazard Index			1.8E-10	
Offsite Population 265185	Dose (person-rem)	4.7E-3			
	Cancer Fatalities	2.3E-6			
	Cancer Incidence	8.0E-6	3.6E-10		
	Genetic Effects	4.7E-7			
Offsite MEI	Dose (rem)	4.0E-7			
	Cancer Fatalities	2.0E-10			
	Cancer Incidence	6.8E-10	3.0E-14		
	Genetic Effects	4.0E-11			
	Hazard Index			7.5E-12	
WM Workers 48	Dose (FTE-rem)	4.2E-1			
	Cancer Fatalities	1.7E-4			
	Cancer Incidence	5.8E-4	5.5E-8		
	Genetic Effects	2.5E-5			
	Exposure Index			1.3E-6	
	Construction Fatalities				8.6E-3
	Construction Injuries				3.8
	Operation Fatalities				5.8E-3
	Operation Injuries				5.0

Table 6.1–75. Risks Associated with Routine Management of LLMW at PGDP Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1952	Dose (person-rem)	1.3E-4	5.1E-9		
	Cancer Fatalities	6.4E-8			
	Cancer Incidence	2.2E-7			
	Genetic Effects	1.3E-8			
Noninvolved Worker MEI	Dose (rem)	1.6E-7	7.8E-12	2.9E-10	
	Cancer Fatalities	7.9E-11			
	Cancer Incidence	2.7E-10			
	Genetic Effects	1.6E-11			
	Hazard Index				
Offsite Population 500502	Dose (person-rem)	1.6E-3	9.7E-9		
	Cancer Fatalities	8.1E-7			
	Cancer Incidence	2.8E-6			
	Genetic Effects	1.6E-7			
Offsite MEI	Dose (rem)	1.8E-7	1.3E-12	5.0E-11	
	Cancer Fatalities	9.0E-11			
	Cancer Incidence	3.1E-10			
	Genetic Effects	1.8E-11			
	Hazard Index				
WM Workers 48	Dose (FTE-rem)	3.7E-1	5.0E-7	5.1E-6	
	Cancer Fatalities	1.5E-4			
	Cancer Incidence	5.2E-4			
	Genetic Effects	2.2E-5			
	Exposure Index				
	Construction Fatalities				7.4E-3
	Construction Injuries				3.2
	Operation Fatalities				5.8E-3
	Operation Injuries				5.0

Table 6.1-76. Risks Associated with Routine Management of LLMW at Ports Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3226	Dose (person-rem)	1.6E-2			
	Cancer Fatalities	8.0E-6			
	Cancer Incidence	2.7E-5	2.1E-6		
	Genetic Effects	1.6E-6			
Noninvolved Worker MEI	Dose (rem)	9.1E-6			
	Cancer Fatalities	4.5E-9			
	Cancer Incidence	1.5E-8	1.2E-9		
	Genetic Effects	9.1E-10			
	Hazard Index			2.1E-6	
Offsite Population 639602	Dose (person-rem)	2.1E-1			
	Cancer Fatalities	1.1E-4			
	Cancer Incidence	3.6E-4	3.7E-6		
	Genetic Effects	2.1E-5			
Offsite MEI	Dose (rem)	2.6E-5			
	Cancer Fatalities	1.3E-8			
	Cancer Incidence	4.5E-8	6.2E-10		
	Genetic Effects	2.6E-9			
	Hazard Index			1.1E-6	
WM Workers 1951	Dose (FTE-rem)	1.9E2			
	Cancer Fatalities	7.7E-2			
	Cancer Incidence	2.7E-1	1.1E-3		
	Genetic Effects	1.2E-2			
	Exposure Index			3.2E-3	
	Construction Fatalities				2.3E-1
	Construction Injuries				1.0E2
	Operation Fatalities				2.4E-1
	Operation Injuries				2.0E2

Table 6.1-77. Risks Associated with Routine Management of LLMW at RFETS Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 6993	Dose (person-rem)	6.9E-3			
	Cancer Fatalities	3.4E-6			
	Cancer Incidence	1.2E-5	1.0E-6		
	Genetic Effects	6.9E-7			
Noninvolved Worker MEI	Dose (rem)	4.1E-6			
	Cancer Fatalities	2.1E-9			
	Cancer Incidence	7.0E-9	5.3E-10		
	Genetic Effects	4.1E-10		1.8E-7	
	Hazard Index				
Offsite Population 2171877	Dose (person-rem)	1.4E-1			
	Cancer Fatalities	6.8E-5			
	Cancer Incidence	2.3E-4	5.2E-6		
	Genetic Effects	1.4E-5			
Offsite MEI	Dose (rem)	1.8E-6			
	Cancer Fatalities	9.2E-10			
	Cancer Incidence	3.1E-9	4.1E-11		
	Genetic Effects	1.8E-10		1.4E-8	
	Hazard Index				
WM Workers 3506	Dose (FTE-rem)	2.9			
	Cancer Fatalities	1.2E-3			
	Cancer Incidence	4.1E-3	5.5E-4		
	Genetic Effects	1.7E-4		3.4E-4	
	Exposure Index				
	Construction Fatalities				3.5E-1
	Construction Injuries				1.5E2
	Operation Fatalities				2.8E-1
	Operation Injuries				2.4E2

Table 6.1–78. Risks Associated with Routine Management of LLMW at SNL–NM Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 10576	Dose (person-rem)	6.9E-7			
	Cancer Fatalities	3.5E-10			
	Cancer Incidence	1.2E-9	6.0E-11		
	Genetic Effects	6.9E-11			
Noninvolved Worker MEI	Dose (rem)	2.9E-10			
	Cancer Fatalities	1.4E-13			
	Cancer Incidence	4.9E-13	2.3E-14		
	Genetic Effects	2.9E-14			
	Hazard Index			3.4E-11	
Offsite Population 610714	Dose (person-rem)	3.6E-5			
	Cancer Fatalities	1.8E-8			
	Cancer Incidence	6.1E-8	5.4E-10		
	Genetic Effects	3.6E-9			
Offsite MEI	Dose (rem)	1.4E-9			
	Cancer Fatalities	7.1E-13			
	Cancer Incidence	2.4E-12	2.3E-14		
	Genetic Effects	1.4E-13			
	Hazard Index			3.4E-11	
WM Workers 5	Dose (FTE-rem)	4.3E-2			
	Cancer Fatalities	1.7E-5			
	Cancer Incidence	6.1E-5	3.4E-10		
	Genetic Effects	2.6E-6			
	Exposure Index			4.9E-8	
	Construction Fatalities				5.9E-4
	Construction Injuries				2.6E-1
	Operation Fatalities				5.9E-4
	Operation Injuries				5.0E-1

Table 6.1-79. Risks Associated with Routine Management of LLMW at SRS Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 15996	Dose (person-rem)	1.2E-1			
	Cancer Fatalities	6.1E-5			
	Cancer Incidence	2.1E-4	4.9E-7		
	Genetic Effects	1.2E-5			
Noninvolved Worker MEI	Dose (rem)	1.1E-4			
	Cancer Fatalities	5.3E-8			
	Cancer Incidence	1.8E-7	5.6E-10		
	Genetic Effects	1.1E-8			
	Hazard Index			6.9E-7	
Offsite Population 620618	Dose (person-rem)	3.5			
	Cancer Fatalities	1.8E-3			
	Cancer Incidence	6.0E-3	9.8E-7		
	Genetic Effects	3.5E-4			
Offsite MEI	Dose (rem)	3.3E-5			
	Cancer Fatalities	1.7E-8			
	Cancer Incidence	5.7E-8	1.3E-11		
	Genetic Effects	3.3E-9			
	Hazard Index			1.6E-8	
WM Workers 1290	Dose (FTE-rem)	2.7E2			
	Cancer Fatalities	1.1E-1			
	Cancer Incidence	3.8E-1	7.0E-4		
	Genetic Effects	1.6E-2			
	Exposure Index			5.9E-3	
	Construction Fatalities				1.7E-1
	Construction Injuries				7.5E1
	Operation Fatalities				1.6E-1
	Operation Injuries				1.3E2

Table 6.1-80. Risks Associated with Routine Management of LLMW at WVDP Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 960	Dose (person-rem)	4.4E-7			
	Cancer Fatalities	2.2E-10			
	Cancer Incidence	7.5E-10	8.9E-11		
	Genetic Effects	4.4E-11			
Noninvolved Worker MEI	Dose (rem)	2.5E-9			
	Cancer Fatalities	1.3E-12			
	Cancer Incidence	4.3E-12	4.5E-13		
	Genetic Effects	2.5E-13			
	Hazard Index			6.2E-11	
Offsite Population 1698391	Dose (person-rem)	3.4E-4			
	Cancer Fatalities	1.7E-7			
	Cancer Incidence	5.8E-7	4.5E-9		
	Genetic Effects	3.4E-8			
Offsite MEI	Dose (rem)	5.2E-9			
	Cancer Fatalities	2.6E-12			
	Cancer Incidence	8.8E-12	1.5E-13		
	Genetic Effects	5.2E-13			
	Hazard Index			2.1E-11	
WM Workers 10	Dose (FTE-rem)	6.9E-2			
	Cancer Fatalities	2.8E-5			
	Cancer Incidence	9.7E-5	1.1E-9		
	Genetic Effects	4.1E-6			
	Exposure Index			8.7E-8	
	Construction Fatalities				2.0E-3
	Construction Injuries				8.6E-1
	Operation Fatalities				1.2E-3
	Operation Injuries				1.1

Table 6.1–81. Risks Associated with Routine Management of LLMW at ANL-E Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 5571	Dose (person-rem)	5.6E-5			
	Cancer Fatalities	2.8E-8			
	Cancer Incidence	9.6E-8	3.0E-9		
	Genetic Effects	5.6E-9			
Noninvolved Worker MEI	Dose (rem)	5.7E-8			
	Cancer Fatalities	2.8E-11			
	Cancer Incidence	9.6E-11	2.7E-12		
	Genetic Effects	5.7E-12			
	Hazard Index			3.5E-9	
Offsite Population 7939785	Dose (person-rem)	1.2E-2			
	Cancer Fatalities	6.0E-6			
	Cancer Incidence	2.1E-5	1.4E-7		
	Genetic Effects	1.2E-6			
Offsite MEI	Dose (rem)	6.6E-8			
	Cancer Fatalities	3.3E-11			
	Cancer Incidence	1.1E-10	9.1E-13		
	Genetic Effects	6.6E-12			
	Hazard Index			1.2E-9	
WM Workers 200	Dose (FTE-rem)	2.6E1			
	Cancer Fatalities	1.0E-2			
	Cancer Incidence	3.6E-2	1.1E-6		
	Genetic Effects	1.6E-3			
	Exposure Index			4.7E-6	
	Construction Fatalities				2.3E-2
	Construction Injuries				9.9
	Operation Fatalities				2.4E-2
	Operation Injuries				2.1E1

Table 6.1–82. Risks Associated with Routine Management of LLMW at BNL Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3517	Dose (person-rem)	6.4E-7			
	Cancer Fatalities	3.2E-10			
	Cancer Incidence	1.1E-9	3.1E-10		
	Genetic Effects	6.4E-11			
Noninvolved Worker MEI	Dose (rem)	7.1E-10			
	Cancer Fatalities	3.6E-13			
	Cancer Incidence	1.2E-12	1.5E-13		
	Genetic Effects	7.1E-14			
	Hazard Index			1.1E-10	
Offsite Population 5738554	Dose (person-rem)	1.1E-4			
	Cancer Fatalities	5.2E-8			
	Cancer Incidence	1.8E-7	9.0E-9		
	Genetic Effects	1.1E-8			
Offsite MEI	Dose (rem)	1.4E-9			
	Cancer Fatalities	7.0E-13			
	Cancer Incidence	2.4E-12	1.5E-13		
	Genetic Effects	1.4E-13			
	Hazard Index			1.1E-10	
WM Workers 16	Dose (FTE-rem)	1.4E-1			
	Cancer Fatalities	5.7E-5			
	Cancer Incidence	2.0E-4	1.6E-8		
	Genetic Effects	8.5E-6			
	Exposure Index			4.4E-7	
	Construction Fatalities				2.0E-3
	Construction Injuries				8.7E-1
	Operation Fatalities				2.0E-3
	Operation Injuries				1.7

Table 6.1-83. Risks Associated with Routine Management of LLMW at FEMP Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 2456	Dose (person-rem)	2.2E-6			
	Cancer Fatalities	1.1E-9			
	Cancer Incidence	3.7E-9	6.4E-9		
	Genetic Effects	2.2E-10			
Noninvolved Worker MEI	Dose (rem)	1.9E-9			
	Cancer Fatalities	9.4E-13			
	Cancer Incidence	3.2E-12	2.9E-12		
	Genetic Effects	1.9E-13			
	Hazard Index			6.3E-10	
Offsite Population 2764589	Dose (person-rem)	2.9E-4			
	Cancer Fatalities	1.4E-7			
	Cancer Incidence	4.9E-7	9.2E-8		
	Genetic Effects	2.9E-8			
Offsite MEI	Dose (rem)	5.4E-9			
	Cancer Fatalities	2.7E-12			
	Cancer Incidence	9.2E-12	2.9E-12		
	Genetic Effects	5.4E-13			
	Hazard Index			6.3E-10	
WM Workers 269	Dose (FTE-rem)	6.3E-1			
	Cancer Fatalities	2.5E-4			
	Cancer Incidence	8.8E-4	1.5E-6		
	Genetic Effects	3.8E-5			
	Exposure Index			6.7E-6	
	Construction Fatalities				5.6E-2
	Construction Injuries				2.4E1
	Operation Fatalities				3.3E-2
	Operation Injuries				2.8E1

Table 6.1–84. Risks Associated with Routine Management of LLMW at Hanford Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8674	Dose (person-rem)	3.5E-1			
	Cancer Fatalities	1.8E-4			
	Cancer Incidence	6.0E-4	7.1E-7		
	Genetic Effects	3.5E-5			
Noninvolved Worker MEI	Dose (rem)	6.1E-4			
	Cancer Fatalities	3.1E-7			
	Cancer Incidence	1.0E-6	1.4E-9		
	Genetic Effects	6.1E-8			
	Hazard Index			1.9E-6	
Offsite Population 377645	Dose (person-rem)	2.6E1			
	Cancer Fatalities	1.3E-2			
	Cancer Incidence	4.5E-2	1.2E-6		
	Genetic Effects	2.6E-3			
Offsite MEI	Dose (rem)	5.4E-4			
	Cancer Fatalities	2.7E-7			
	Cancer Incidence	9.2E-7	4.0E-11		
	Genetic Effects	5.4E-8			
	Hazard Index			5.5E-8	
WM Workers 2132	Dose (FTE-rem)	3.5E2			
	Cancer Fatalities	1.4E-1			
	Cancer Incidence	4.9E-1	1.5E-3		
	Genetic Effects	2.1E-2			
	Exposure Index			4.0E-3	
	Construction Fatalities				2.4E-1
	Construction Injuries				1.0E2
	Operation Fatalities				2.6E-1
	Operation Injuries				2.2E2

Table 6.1–85. Risks Associated with Routine Management of LLMW at INEL Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem)	9.0E-2			
	Cancer Fatalities	4.5E-5			
	Cancer Incidence	1.5E-4	2.2E-7		
	Genetic Effects	9.0E-6			
Noninvolved Worker MEI	Dose (rem)	7.8E-5			
	Cancer Fatalities	3.9E-8			
	Cancer Incidence	1.3E-7	1.8E-10		
	Genetic Effects	7.8E-9			
	Hazard Index			2.8E-7	
Offsite Population 153061	Dose (person-rem)	1.3			
	Cancer Fatalities	6.3E-4			
	Cancer Incidence	2.1E-3	1.6E-7		
	Genetic Effects	1.3E-4			
Offsite MEI	Dose (rem)	1.6E-4			
	Cancer Fatalities	7.8E-8			
	Cancer Incidence	2.7E-7	2.2E-11		
	Genetic Effects	1.6E-8			
	Hazard Index			3.4E-8	
WM Workers 2010	Dose (FTE-rem)	2.8E2			
	Cancer Fatalities	1.1E-1			
	Cancer Incidence	3.9E-1	5.1E-4		
	Genetic Effects	1.7E-2			
	Exposure Index			1.3E-3	
	Construction Fatalities				3.1E-1
	Construction Injuries				1.3E2
	Operation Fatalities				2.4E-1
	Operation Injuries				2.1E2

Table 6.1–86. Risks Associated with Routine Management of LLMW at KAPL–K Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3896	Dose (person-rem)	5.3E-6			
	Cancer Fatalities	2.7E-9			
	Cancer Incidence	9.0E-9	1.7E-10		
	Genetic Effects	5.3E-10			
Noninvolved Worker MEI	Dose (rem)	2.5E-9			
	Cancer Fatalities	1.2E-12			
	Cancer Incidence	4.2E-12	6.7E-14		
	Genetic Effects	2.5E-13			
	Hazard Index			4.3E-12	
Offsite Population 1290172	Dose (person-rem)	5.2E-4			
	Cancer Fatalities	2.6E-7			
	Cancer Incidence	8.8E-7	2.6E-9		
	Genetic Effects	5.2E-8			
Offsite MEI	Dose (rem)	1.2E-8			
	Cancer Fatalities	5.8E-12			
	Cancer Incidence	2.0E-11	6.7E-14		
	Genetic Effects	1.2E-12			
	Hazard Index			4.3E-12	
WM Workers 9	Dose (FTE-rem)	1.6			
	Cancer Fatalities	6.3E-4			
	Cancer Incidence	2.2E-3	2.7E-9		
	Genetic Effects	9.4E-5			
	Exposure Index			1.2E-7	
	Construction Fatalities				1.1E-3
	Construction Injuries				4.8E-1
	Operation Fatalities				1.1E-3
	Operation Injuries				9.3E-1

Table 6.1-87. Risks Associated with Routine Management of LLMW at KCP Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 4410	Dose (person-rem)	6.7E-8			
	Cancer Fatalities	3.3E-11			
	Cancer Incidence	1.1E-10	5.7E-13		
	Genetic Effects	6.7E-12			
Noninvolved Worker MEI	Dose (rem)	4.7E-11			
	Cancer Fatalities	2.4E-14			
	Cancer Incidence	8.0E-14	0.00		
	Genetic Effects	0.00			
	Hazard Index			4.4E-13	
Offsite Population 1729833	Dose (person-rem)	4.9E-6			
	Cancer Fatalities	2.5E-9			
	Cancer Incidence	8.3E-9	9.7E-12		
	Genetic Effects	4.9E-10			
Offsite MEI	Dose (rem)	2.2E-10			
	Cancer Fatalities	1.1E-13			
	Cancer Incidence	3.8E-13	0.00		
	Genetic Effects	2.2E-14			
	Hazard Index			4.4E-13	
WM Workers 0	Dose (FTE-rem)	2.0E-3			
	Cancer Fatalities	8.0E-7			
	Cancer Incidence	2.8E-6	2.2E-13		
	Genetic Effects	1.2E-7			
	Exposure Index			1.3E-9	
	Construction Fatalities				2.9E-5
	Construction Injuries				1.3E-2
	Operation Fatalities				2.9E-5
	Operation Injuries				2.5E-2

Table 6.1-88. Risks Associated with Routine Management of LLMW at LANL Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 11552	Dose (person-rem)	3.5E-2			
	Cancer Fatalities	1.7E-5			
	Cancer Incidence	5.9E-5	1.0E-7		
	Genetic Effects	3.5E-6			
Noninvolved Worker MEI	Dose (rem)	2.6E-5			
	Cancer Fatalities	1.3E-8			
	Cancer Incidence	4.3E-8	6.2E-11		
	Genetic Effects	2.6E-9			
	Hazard Index			1.1E-7	
Offsite Population 159152	Dose (person-rem)	1.7			
	Cancer Fatalities	8.6E-4			
	Cancer Incidence	2.9E-3	2.0E-7		
	Genetic Effects	1.7E-4			
Offsite MEI	Dose (rem)	1.8E-4			
	Cancer Fatalities	9.1E-8			
	Cancer Incidence	3.1E-7	2.5E-11		
	Genetic Effects	1.8E-8			
	Hazard Index			4.4E-8	
WM Workers 679	Dose (FTE-rem)	5.9			
	Cancer Fatalities	2.3E-3			
	Cancer Incidence	8.2E-3	6.1E-6		
	Genetic Effects	3.5E-4			
	Exposure Index			5.1E-5	
	Construction Fatalities				1.3E-1
	Construction Injuries				5.8E1
	Operation Fatalities				8.2E-2
	Operation Injuries				7.0E1

Table 6.1-89. Risks Associated with Routine Management of LLMW at LBL Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3940	Dose (person-rem)	1.1E-7			
	Cancer Fatalities	5.6E-11			
	Cancer Incidence	1.9E-10	6.0E-10		
	Genetic Effects	1.1E-11			
Noninvolved Worker MEI	Dose (rem)	8.8E-11			
	Cancer Fatalities	4.4E-14			
	Cancer Incidence	1.5E-13	4.5E-13		
	Genetic Effects	9.0E-15			
	Hazard Index			1.1E-10	
Offsite Population 1586829	Dose (person-rem)	2.0E-5			
	Cancer Fatalities	9.8E-9			
	Cancer Incidence	3.3E-8	1.6E-8		
	Genetic Effects	2.0E-9			
Offsite MEI	Dose (rem)	2.9E-10			
	Cancer Fatalities	1.5E-13			
	Cancer Incidence	5.0E-13	3.3E-13		
	Genetic Effects	2.9E-14			
	Hazard Index			8.0E-11	
WM Workers 8	Dose (FTE-rem)	5.3E-2			
	Cancer Fatalities	2.1E-5			
	Cancer Incidence	7.4E-5	6.7E-9		
	Genetic Effects	3.2E-6			
	Exposure Index			3.2E-7	
	Construction Fatalities				9.4E-4
	Construction Injuries				4.1E-1
	Operation Fatalities				9.4E-4
	Operation Injuries				8.0E-1

Table 6.1-90. Risks Associated with Routine Management of LLMW at LLNL Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 9504	Dose (person-rem)	4.1E-5			
	Cancer Fatalities	2.0E-8			
	Cancer Incidence	6.9E-8	1.1E-7		
	Genetic Effects	4.1E-9			
Noninvolved Worker MEI	Dose (rem)	1.4E-8			
	Cancer Fatalities	6.9E-12			
	Cancer Incidence	2.3E-11	3.2E-11		
	Genetic Effects	1.4E-12			
	Hazard Index			7.9E-9	
Offsite Population 6324234	Dose (person-rem)	8.8E-4			
	Cancer Fatalities	4.4E-7			
	Cancer Incidence	1.5E-6	4.5E-7		
	Genetic Effects	8.8E-8			
Offsite MEI	Dose (rem)	1.4E-8			
	Cancer Fatalities	7.2E-12			
	Cancer Incidence	2.5E-11	1.0E-11		
	Genetic Effects	1.4E-12			
	Hazard Index			2.5E-9	
WM Workers 136	Dose (FTE-rem)	1.5			
	Cancer Fatalities	6.2E-4			
	Cancer Incidence	2.2E-3	2.9E-6		
	Genetic Effects	9.2E-5			
	Exposure Index			8.5E-6	
	Construction Fatalities				1.6E-2
	Construction Injuries				7.1
	Operation Fatalities				1.7E-2
	Operation Injuries				1.4E1

Table 6.1-91. Risks Associated with Routine Management of LLMW at Mound Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1688	Dose (person-rem)	9.7E-8			
	Cancer Fatalities	4.9E-11			
	Cancer Incidence	1.7E-10	1.5E-9		
	Genetic Effects	9.7E-12			
Noninvolved Worker MEI	Dose (rem)	1.5E-10			
	Cancer Fatalities	7.7E-14			
	Cancer Incidence	2.6E-13	1.7E-12		
	Genetic Effects	1.5E-14			
	Hazard Index			9.2E-12	
Offsite Population 3032983	Dose (person-rem)	1.2E-5			
	Cancer Fatalities	5.9E-9			
	Cancer Incidence	2.0E-8	5.3E-8		
	Genetic Effects	1.2E-9			
Offsite MEI	Dose (rem)	6.8E-10			
	Cancer Fatalities	3.4E-13			
	Cancer Incidence	1.2E-12	1.7E-12		
	Genetic Effects	6.8E-14			
	Hazard Index			9.2E-12	
WM Workers 5	Dose (FTE-rem)	3.1E-2			
	Cancer Fatalities	1.2E-5			
	Cancer Incidence	4.3E-5	4.3E-9		
	Genetic Effects	1.9E-6			
	Exposure Index			3.4E-7	
	Construction Fatalities				5.5E-4
	Construction Injuries				2.4E-1
	Operation Fatalities				5.5E-4
	Operation Injuries				4.7E-1

Table 6.1-92. Risks Associated with Routine Management of LLMW at NTS Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3756	Dose (person-rem)	3.8E-11			
	Cancer Fatalities	1.9E-14			
	Cancer Incidence	6.5E-14	9.5E-7		
	Genetic Effects	0.00			
Noninvolved Worker MEI	Dose (rem)	1.8E-13			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	4.0E-9		
	Genetic Effects	0.00			
	Hazard Index			2.5E-6	
Offsite Population 14266	Dose (person-rem)	1.5E-11			
	Cancer Fatalities	7.0E-15			
	Cancer Incidence	2.5E-14	7.1E-8		
	Genetic Effects	0.00			
Offsite MEI	Dose (rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	1.8E-11		
	Genetic Effects	0.00			
	Hazard Index			1.1E-8	
WM Workers 0	Dose (FTE-rem)	6.5E-4			
	Cancer Fatalities	2.6E-7			
	Cancer Incidence	9.1E-7	7.5E-14		
	Genetic Effects	3.9E-8			
	Exposure Index			8.1E-10	
	Construction Fatalities				1.2E-5
	Construction Injuries				5.1E-3
	Operation Fatalities				1.2E-5
	Operation Injuries				9.9E-3

Table 6.1-93. Risks Associated with Routine Management of LLMW at ORR Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3809	Dose (person-rem)	1.0E-1			
	Cancer Fatalities	5.0E-5			
	Cancer Incidence	1.7E-4	6.5E-6		
	Genetic Effects	1.0E-5			
Noninvolved Worker MEI	Dose (rem)	9.1E-5			
	Cancer Fatalities	4.5E-8			
	Cancer Incidence	1.5E-7	6.2E-9		
	Genetic Effects	9.1E-9			
	Hazard Index			8.8E-6	
Offsite Population 881652	Dose (person-rem)	2.4			
	Cancer Fatalities	1.2E-3			
	Cancer Incidence	4.1E-3	1.9E-5		
	Genetic Effects	2.4E-4			
Offsite MEI	Dose (rem)	7.3E-5			
	Cancer Fatalities	3.6E-8			
	Cancer Incidence	1.2E-7	1.0E-9		
	Genetic Effects	7.3E-9			
	Hazard Index			1.4E-6	
WM Workers 2177	Dose (FTE-rem)	3.0E2			
	Cancer Fatalities	1.2E-1			
	Cancer Incidence	4.2E-1	5.2E-3		
	Genetic Effects	1.8E-2			
	Exposure Index			1.3E-2	
	Construction Fatalities				2.2E-1
	Construction Injuries				9.5E1
	Operation Fatalities				2.6E-1
	Operation Injuries				2.2E2

Table 6.1-94. Risks Associated with Routine Management of LLMW at Pantex Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 2825	Dose (person-rem)	4.7E-4	4.1E-10		
	Cancer Fatalities	2.3E-7			
	Cancer Incidence	7.9E-7			
	Genetic Effects	4.7E-8			
Noninvolved Worker MEI	Dose (rem)	8.9E-7	7.0E-13	1.8E-10	
	Cancer Fatalities	4.4E-10			
	Cancer Incidence	1.5E-9			
	Genetic Effects	8.9E-11			
	Hazard Index				
Offsite Population 265185	Dose (person-rem)	4.7E-3	3.6E-10		
	Cancer Fatalities	2.3E-6			
	Cancer Incidence	8.0E-6			
	Genetic Effects	4.7E-7			
Offsite MEI	Dose (rem)	4.0E-7	3.0E-14	7.5E-12	
	Cancer Fatalities	2.0E-10			
	Cancer Incidence	6.8E-10			
	Genetic Effects	4.0E-11			
	Hazard Index				
WM Workers 48	Dose (FTE-rem)	4.2E-1	5.5E-8	1.3E-6	8.6E-3
	Cancer Fatalities	1.7E-4			
	Cancer Incidence	5.8E-4			
	Genetic Effects	2.5E-5			
	Exposure Index				
	Construction Fatalities				3.8
	Construction Injuries				5.8E-3
	Operation Fatalities				5.0
	Operation Injuries				

Table 6.1-95. Risks Associated with Routine Management of LLMW at PGDP Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1952	Dose (person-rem)	1.3E-4	5.1E-9		
	Cancer Fatalities	6.4E-8			
	Cancer Incidence	2.2E-7			
	Genetic Effects	1.3E-8			
Noninvolved Worker MEI	Dose (rem)	1.6E-7	7.8E-12	2.9E-10	
	Cancer Fatalities	7.9E-11			
	Cancer Incidence	2.7E-10			
	Genetic Effects	1.6E-11			
	Hazard Index				
Offsite Population 500502	Dose (person-rem)	1.6E-3	9.7E-9		
	Cancer Fatalities	8.1E-7			
	Cancer Incidence	2.8E-6			
	Genetic Effects	1.6E-7			
Offsite MEI	Dose (rem)	1.8E-7	1.3E-12	5.0E-11	
	Cancer Fatalities	9.0E-11			
	Cancer Incidence	3.1E-10			
	Genetic Effects	1.8E-11			
	Hazard Index				
WM Workers 48	Dose (FTE-rem)	3.7E-1	5.0E-7	5.1E-6	7.4E-3
	Cancer Fatalities	1.5E-4			
	Cancer Incidence	5.2E-4			
	Genetic Effects	2.2E-5			
	Exposure Index				
	Construction Fatalities				3.2
	Construction Injuries				5.8E-3
	Operation Fatalities				5.0
	Operation Injuries				

Table 6.1-96. Risks Associated with Routine Management of LLMW at Ports Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3226	Dose (person-rem)	1.6E-2			
	Cancer Fatalities	8.0E-6			
	Cancer Incidence	2.7E-5	2.1E-6		
	Genetic Effects	1.6E-6			
Noninvolved Worker MEI	Dose (rem)	9.1E-6			
	Cancer Fatalities	4.5E-9			
	Cancer Incidence	1.5E-8	1.2E-9		
	Genetic Effects	9.1E-10			
	Hazard Index			2.1E-6	
Offsite Population 639602	Dose (person-rem)	2.1E-1			
	Cancer Fatalities	1.1E-4			
	Cancer Incidence	3.6E-4	3.7E-6		
	Genetic Effects	2.1E-5			
Offsite MEI	Dose (rem)	2.6E-5			
	Cancer Fatalities	1.3E-8			
	Cancer Incidence	4.5E-8	6.2E-10		
	Genetic Effects	2.6E-9			
	Hazard Index			1.1E-6	
WM Workers 1951	Dose (FTE-rem)	1.9E2			
	Cancer Fatalities	7.7E-2			
	Cancer Incidence	2.7E-1	1.1E-3		
	Genetic Effects	1.2E-2			
	Exposure Index			3.2E-3	
	Construction Fatalities				2.3E-1
	Construction Injuries				1.0E2
	Operation Fatalities				2.4E-1
	Operation Injuries				2.0E2

Table 6.1-97. Risks Associated with Routine Management of LLMW at RFETS Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 6993	Dose (person-rem)	6.9E-3			
	Cancer Fatalities	3.4E-6			
	Cancer Incidence	1.2E-5	1.0E-6		
	Genetic Effects	6.9E-7			
Noninvolved Worker MEI	Dose (rem)	4.1E-6			
	Cancer Fatalities	2.1E-9			
	Cancer Incidence	7.0E-9	5.3E-10		
	Genetic Effects	4.1E-10			
	Hazard Index			1.8E-7	
Offsite Population 2171877	Dose (person-rem)	1.4E-1			
	Cancer Fatalities	6.8E-5			
	Cancer Incidence	2.3E-4	5.2E-6		
	Genetic Effects	1.4E-5			
Offsite MEI	Dose (rem)	1.8E-6			
	Cancer Fatalities	9.2E-10			
	Cancer Incidence	3.1E-9	4.1E-11		
	Genetic Effects	1.8E-10			
	Hazard Index			1.4E-8	
WM Workers 3506	Dose (FTE-rem)	2.9			
	Cancer Fatalities	1.2E-3			
	Cancer Incidence	4.1E-3	5.5E-4		
	Genetic Effects	1.7E-4			
	Exposure Index			3.4E-4	
	Construction Fatalities				3.5E-1
	Construction Injuries				1.5E2
	Operation Fatalities				2.8E-1
	Operation Injuries				2.4E2

Table 6.1-98. Risks Associated with Routine Management of LLMW at SNL-NM Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 10576	Dose (person-rem)	6.9E-7			
	Cancer Fatalities	3.5E-10			
	Cancer Incidence	1.2E-9	6.0E-11		
	Genetic Effects	6.9E-11			
Noninvolved Worker MEI	Dose (rem)	2.9E-10			
	Cancer Fatalities	1.4E-13			
	Cancer Incidence	4.9E-13	2.3E-14		
	Genetic Effects	2.9E-14			
	Hazard Index			3.4E-11	
Offsite Population 610714	Dose (person-rem)	3.6E-5			
	Cancer Fatalities	1.8E-8			
	Cancer Incidence	6.1E-8	5.4E-10		
	Genetic Effects	3.6E-9			
Offsite MEI	Dose (rem)	1.4E-9			
	Cancer Fatalities	7.1E-13			
	Cancer Incidence	2.4E-12	2.3E-14		
	Genetic Effects	1.4E-13			
	Hazard Index			3.4E-11	
WM Workers 5	Dose (FTE-rem)	4.3E-2			
	Cancer Fatalities	1.7E-5			
	Cancer Incidence	6.1E-5	3.4E-10		
	Genetic Effects	2.6E-6			
	Exposure Index			4.9E-8	
	Construction Fatalities				5.9E-4
	Construction Injuries				2.6E-1
	Operation Fatalities				5.9E-4
	Operation Injuries				5.0E-1

Table 6.1-99. Risks Associated with Routine Management of LLMW at SRS Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 15996	Dose (person-rem)	1.2E-1			
	Cancer Fatalities	6.1E-5			
	Cancer Incidence	2.1E-4	4.7E-7		
	Genetic Effects	1.2E-5			
Noninvolved Worker MEI	Dose (rem)	1.1E-4			
	Cancer Fatalities	5.3E-8			
	Cancer Incidence	1.8E-7	5.4E-10		
	Genetic Effects	1.1E-8			
	Hazard Index			6.3E-7	
Offsite Population 620618	Dose (person-rem)	3.5			
	Cancer Fatalities	1.8E-3			
	Cancer Incidence	6.0E-3	9.4E-7		
	Genetic Effects	3.5E-4			
Offsite MEI	Dose (rem)	3.3E-5			
	Cancer Fatalities	1.7E-8			
	Cancer Incidence	5.7E-8	1.2E-11		
	Genetic Effects	3.3E-9			
	Hazard Index			1.4E-8	
WM Workers 1290	Dose (FTE-rem)	2.7E2			
	Cancer Fatalities	1.1E-1			
	Cancer Incidence	3.8E-1	7.0E-4		
	Genetic Effects	1.6E-2			
	Exposure Index			5.9E-3	
	Construction Fatalities				1.7E-1
	Construction Injuries				7.5E1
	Operation Fatalities				1.6E-1
	Operation Injuries				1.3E2

Table 6.1-100. Risks Associated with Routine Management of LLMW at WVDP Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 960	Dose (person-rem)	4.4E-7			
	Cancer Fatalities	2.2E-10			
	Cancer Incidence	7.5E-10	8.9E-11		
	Genetic Effects	4.4E-11			
Noninvolved Worker MEI	Dose (rem)	2.5E-9			
	Cancer Fatalities	1.3E-12			
	Cancer Incidence	4.3E-12	4.5E-13		
	Genetic Effects	2.5E-13			
	Hazard Index			6.2E-11	
Offsite Population 1698391	Dose (person-rem)	3.4E-4			
	Cancer Fatalities	1.7E-7			
	Cancer Incidence	5.8E-7	4.5E-9		
	Genetic Effects	3.4E-8			
Offsite MEI	Dose (rem)	5.2E-9			
	Cancer Fatalities	2.6E-12			
	Cancer Incidence	8.8E-12	1.5E-13		
	Genetic Effects	5.2E-13			
	Hazard Index			2.1E-11	
WM Workers 10	Dose (FTE-rem)	6.9E-2			
	Cancer Fatalities	2.8E-5			
	Cancer Incidence	9.7E-5	1.1E-9		
	Genetic Effects	4.1E-6			
	Exposure Index			8.7E-8	
	Construction Fatalities				2.0E-3
	Construction Injuries				8.6E-1
	Operation Fatalities				1.2E-3
	Operation Injuries				1.1

Table 6.1-101. Risks Associated with Routine Management of LLMW at ANL-E Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 5571	Dose (person-rem)	5.6E-5			
	Cancer Fatalities	2.8E-8			
	Cancer Incidence	9.6E-8	3.0E-9		
	Genetic Effects	5.6E-9			
Noninvolved Worker MEI	Dose (rem)	5.7E-8			
	Cancer Fatalities	2.8E-11			
	Cancer Incidence	9.6E-11	2.7E-12		
	Genetic Effects	5.7E-12			
	Hazard Index			3.5E-9	
Offsite Population 7939785	Dose (person-rem)	1.2E-2			
	Cancer Fatalities	6.0E-6			
	Cancer Incidence	2.1E-5	1.4E-7		
	Genetic Effects	1.2E-6			
Offsite MEI	Dose (rem)	6.6E-8			
	Cancer Fatalities	3.3E-11			
	Cancer Incidence	1.1E-10	9.1E-13		
	Genetic Effects	6.6E-12			
	Hazard Index			1.2E-9	
WM Workers 200	Dose (FTE-rem)	2.6E1			
	Cancer Fatalities	1.0E-2			
	Cancer Incidence	3.6E-2	1.1E-6		
	Genetic Effects	1.6E-3			
	Exposure Index			4.7E-6	
	Construction Fatalities				2.3E-2
	Construction Injuries				9.9
	Operation Fatalities				2.4E-2
	Operation Injuries				2.1E1

Table 6.1–102. Risks Associated with Routine Management of LLMW at BNL Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3517	Dose (person-rem)	6.4E-7			
	Cancer Fatalities	3.2E-10			
	Cancer Incidence	1.1E-9	3.1E-10		
	Genetic Effects	6.4E-11			
Noninvolved Worker MEI	Dose (rem)	7.1E-10			
	Cancer Fatalities	3.6E-13			
	Cancer Incidence	1.2E-12	1.5E-13		
	Genetic Effects	7.1E-14			
	Hazard Index			1.1E-10	
Offsite Population 5738554	Dose (person-rem)	1.1E-4			
	Cancer Fatalities	5.2E-8			
	Cancer Incidence	1.8E-7	9.0E-9		
	Genetic Effects	1.1E-8			
Offsite MEI	Dose (rem)	1.4E-9			
	Cancer Fatalities	7.0E-13			
	Cancer Incidence	2.4E-12	1.5E-13		
	Genetic Effects	1.4E-13			
	Hazard Index			1.1E-10	
WM Workers 16	Dose (FTE-rem)	1.4E-1			
	Cancer Fatalities	5.7E-5			
	Cancer Incidence	2.0E-4	1.6E-8		
	Genetic Effects	8.5E-6			
	Exposure Index			4.4E-7	
	Construction Fatalities				2.0E-3
	Construction Injuries				8.7E-1
	Operation Fatalities				2.0E-3
	Operation Injuries				1.7

Table 6.1-103. Risks Associated with Routine Management of LLMW at FEMP Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 2456	Dose (person-rem)	2.2E-6			
	Cancer Fatalities	1.1E-9			
	Cancer Incidence	3.7E-9	6.4E-9		
	Genetic Effects	2.2E-10			
Noninvolved Worker MEI	Dose (rem)	1.9E-9			
	Cancer Fatalities	9.5E-13			
	Cancer Incidence	3.2E-12	2.9E-12		
	Genetic Effects	1.9E-13			
	Hazard Index			6.3E-10	
Offsite Population 2764589	Dose (person-rem)	2.9E-4			
	Cancer Fatalities	1.4E-7			
	Cancer Incidence	4.9E-7	9.2E-8		
	Genetic Effects	2.9E-8			
Offsite MEI	Dose (rem)	5.4E-9			
	Cancer Fatalities	2.7E-12			
	Cancer Incidence	9.2E-12	2.9E-12		
	Genetic Effects	5.4E-13			
	Hazard Index			6.3E-10	
WM Workers 269	Dose (FTE-rem)	6.3E-1			
	Cancer Fatalities	2.5E-4			
	Cancer Incidence	8.8E-4	1.5E-6		
	Genetic Effects	3.8E-5			
	Exposure Index			6.8E-6	
	Construction Fatalities				5.6E-2
	Construction Injuries				2.4E1
	Operation Fatalities				3.3E-2
	Operation Injuries				2.8E1

Table 6.1-104. Risks Associated with Routine Management of LLMW at Hanford Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8674	Dose (person-rem)	3.6E-1			
	Cancer Fatalities	1.8E-4			
	Cancer Incidence	6.1E-4	7.4E-7		
	Genetic Effects	3.6E-5			
Noninvolved Worker MEI	Dose (rem)	6.3E-4			
	Cancer Fatalities	3.1E-7			
	Cancer Incidence	1.1E-6	1.5E-9		
	Genetic Effects	6.3E-8			
	Hazard Index			2.0E-6	
Offsite Population 377645	Dose (person-rem)	2.7E1			
	Cancer Fatalities	1.3E-2			
	Cancer Incidence	4.5E-2	1.2E-6		
	Genetic Effects	2.7E-3			
Offsite MEI	Dose (rem)	5.5E-4			
	Cancer Fatalities	2.7E-7			
	Cancer Incidence	9.3E-7	4.1E-11		
	Genetic Effects	5.5E-8			
	Hazard Index			5.6E-8	
WM Workers 2268	Dose (FTE-rem)	3.7E2			
	Cancer Fatalities	1.5E-1			
	Cancer Incidence	5.1E-1	1.6E-3		
	Genetic Effects	2.2E-2			
	Exposure Index			4.0E-3	
	Construction Fatalities				2.7E-1
	Construction Injuries				1.2E2
	Operation Fatalities				2.7E-1
	Operation Injuries				2.3E2

Table 6.1-105. Risks Associated with Routine Management of LLMW at INEL Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem)	9.7E-2			
	Cancer Fatalities	4.8E-5			
	Cancer Incidence	1.6E-4	6.1E-7		
	Genetic Effects	9.7E-6			
Noninvolved Worker MEI	Dose (rem)	8.3E-5			
	Cancer Fatalities	4.2E-8			
	Cancer Incidence	1.4E-7	5.1E-10		
	Genetic Effects	8.3E-9			
	Hazard Index			4.3E-7	
Offsite Population 153061	Dose (person-rem)	1.3			
	Cancer Fatalities	6.7E-4			
	Cancer Incidence	2.3E-3	4.7E-7		
	Genetic Effects	1.3E-4			
Offsite MEI	Dose (rem)	1.7E-4			
	Cancer Fatalities	8.4E-8			
	Cancer Incidence	2.8E-7	6.4E-11		
	Genetic Effects	1.7E-8			
	Hazard Index			5.3E-8	
WM Workers 3281	Dose (FTE-rem)	3.0E2			
	Cancer Fatalities	1.2E-1			
	Cancer Incidence	4.2E-1	1.2E-3		
	Genetic Effects	1.8E-2			
	Exposure Index			1.6E-3	
	Construction Fatalities				4.8E-1
	Construction Injuries				2.1E2
	Operation Fatalities				4.0E-1
	Operation Injuries				3.4E2

Table 6.1–106. Risks Associated with Routine Management of LLMW at KAPL–K Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3896	Dose (person-rem)	5.3E-6			
	Cancer Fatalities	2.7E-9			
	Cancer Incidence	9.0E-9	1.7E-10		
	Genetic Effects	5.3E-10			
Noninvolved Worker MEI	Dose (rem)	2.5E-9			
	Cancer Fatalities	1.2E-12			
	Cancer Incidence	4.2E-12	6.7E-14		
	Genetic Effects	2.5E-13			
	Hazard Index			4.3E-12	
Offsite Population 1290172	Dose (person-rem)	5.2E-4			
	Cancer Fatalities	2.6E-7			
	Cancer Incidence	8.8E-7	2.6E-9		
	Genetic Effects	5.2E-8			
Offsite MEI	Dose (rem)	1.2E-8			
	Cancer Fatalities	5.8E-12			
	Cancer Incidence	2.0E-11	6.7E-14		
	Genetic Effects	1.2E-12			
	Hazard Index			4.3E-12	
WM Workers 9	Dose (FTE-rem)	1.6			
	Cancer Fatalities	6.3E-4			
	Cancer Incidence	2.2E-3	2.7E-9		
	Genetic Effects	9.4E-5			
	Exposure Index			1.2E-7	
	Construction Fatalities				1.1E-3
	Construction Injuries				4.8E-1
	Operation Fatalities				1.1E-3
	Operation Injuries				9.3E-1

Table 6.1-107. Risks Associated with Routine Management of LLMW at KCP Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 4410	Dose (person-rem)	6.7E-8			
	Cancer Fatalities	3.3E-11			
	Cancer Incidence	1.1E-10	5.7E-13		
	Genetic Effects	6.7E-12			
Noninvolved Worker MEI	Dose (rem)	4.7E-11			
	Cancer Fatalities	2.4E-14			
	Cancer Incidence	8.0E-14	0.00		
	Genetic Effects	0.00			
	Hazard Index			4.4E-13	
Offsite Population 1729833	Dose (person-rem)	4.9E-6			
	Cancer Fatalities	2.5E-9			
	Cancer Incidence	8.3E-9	9.7E-12		
	Genetic Effects	4.9E-10			
Offsite MEI	Dose (rem)	2.2E-10			
	Cancer Fatalities	1.1E-13			
	Cancer Incidence	3.8E-13	0.00		
	Genetic Effects	2.2E-14			
	Hazard Index			4.4E-13	
WM Workers 0	Dose (FTE-rem)	2.0E-3			
	Cancer Fatalities	8.0E-7			
	Cancer Incidence	2.8E-6	2.2E-13		
	Genetic Effects	1.2E-7			
	Exposure Index			1.3E-9	
	Construction Fatalities				2.9E-5
	Construction Injuries				1.3E-2
	Operation Fatalities				2.9E-5
	Operation Injuries				2.5E-2

Table 6.1–108. Risks Associated with Routine Management of LLMW at LANL Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 11552	Dose (person-rem)	1.5E-3			
	Cancer Fatalities	7.5E-7			
	Cancer Incidence	2.6E-6	7.0E-7		
	Genetic Effects	1.5E-7			
Noninvolved Worker MEI	Dose (rem)	1.1E-6			
	Cancer Fatalities	5.5E-10			
	Cancer Incidence	1.9E-9	4.3E-10		
	Genetic Effects	1.1E-10			
	Hazard Index			3.6E-7	
Offsite Population 159152	Dose (person-rem)	7.6E-2			
	Cancer Fatalities	3.8E-5			
	Cancer Incidence	1.3E-4	1.4E-6		
	Genetic Effects	7.6E-6			
Offsite MEI	Dose (rem)	8.0E-6			
	Cancer Fatalities	4.0E-9			
	Cancer Incidence	1.4E-8	1.7E-10		
	Genetic Effects	8.0E-10			
	Hazard Index			1.4E-7	
WM Workers 146	Dose (FTE-rem)	1.7			
	Cancer Fatalities	6.9E-4			
	Cancer Incidence	2.4E-3	3.0E-7		
	Genetic Effects	1.0E-4			
	Exposure Index			5.8E-6	
	Construction Fatalities				2.6E-2
	Construction Injuries				1.1E1
	Operation Fatalities				1.8E-2
	Operation Injuries				1.5E1

Table 6.1–109. Risks Associated with Routine Management of LLMW at LBL Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3940	Dose (person-rem)	1.1E-7	6.0E-10		
	Cancer Fatalities	5.6E-11			
	Cancer Incidence	1.9E-10			
	Genetic Effects	1.1E-11			
Noninvolved Worker MEI	Dose (rem)	8.8E-11	4.5E-13	1.1E-10	
	Cancer Fatalities	4.4E-14			
	Cancer Incidence	1.5E-13			
	Genetic Effects	9.0E-15			
	Hazard Index				
Offsite Population 1586829	Dose (person-rem)	2.0E-5	1.6E-8		
	Cancer Fatalities	9.8E-9			
	Cancer Incidence	3.3E-8			
	Genetic Effects	2.0E-9			
Offsite MEI	Dose (rem)	2.9E-10	3.3E-13	8.0E-11	
	Cancer Fatalities	1.5E-13			
	Cancer Incidence	5.0E-13			
	Genetic Effects	2.9E-14			
	Hazard Index				
WM Workers 8	Dose (FTE-rem)	5.3E-2	6.7E-9	3.2E-7	
	Cancer Fatalities	2.1E-5			
	Cancer Incidence	7.4E-5			
	Genetic Effects	3.2E-6			
	Exposure Index				
	Construction Fatalities				9.4E-4
	Construction Injuries				4.1E-1
	Operation Fatalities				9.4E-4
	Operation Injuries				8.0E-1

Table 6.1-110. Risks Associated with Routine Management of LLMW at LLNL Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 9504	Dose (person-rem)	4.1E-5			
	Cancer Fatalities	2.0E-8			
	Cancer Incidence	6.9E-8	1.1E-7		
	Genetic Effects	4.1E-9			
Noninvolved Worker MEI	Dose (rem)	1.4E-8			
	Cancer Fatalities	6.9E-12			
	Cancer Incidence	2.3E-11	3.2E-11		
	Genetic Effects	1.4E-12			
	Hazard Index			7.9E-9	
Offsite Population 6324234	Dose (person-rem)	8.8E-4			
	Cancer Fatalities	4.4E-7			
	Cancer Incidence	1.5E-6	4.5E-7		
	Genetic Effects	8.8E-8			
Offsite MEI	Dose (rem)	1.4E-8			
	Cancer Fatalities	7.2E-12			
	Cancer Incidence	2.5E-11	1.0E-11		
	Genetic Effects	1.4E-12			
	Hazard Index			2.5E-9	
WM Workers 136	Dose (FTE-rem)	1.5			
	Cancer Fatalities	6.2E-4			
	Cancer Incidence	2.2E-3	2.9E-6		
	Genetic Effects	9.2E-5			
	Exposure Index			8.5E-6	
	Construction Fatalities				1.6E-2
	Construction Injuries				7.1
	Operation Fatalities				1.7E-2
	Operation Injuries				1.4E1

Table 6.1-111. Risks Associated with Routine Management of LLMW at Mound Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1688	Dose (person-rem)	9.9E-8			
	Cancer Fatalities	5.0E-11			
	Cancer Incidence	1.7E-10	1.5E-9		
	Genetic Effects	9.9E-12			
Noninvolved Worker MEI	Dose (rem)	1.6E-10			
	Cancer Fatalities	7.9E-14			
	Cancer Incidence	2.7E-13	1.7E-12		
	Genetic Effects	1.6E-14			
	Hazard Index			9.5E-12	
Offsite Population 3032983	Dose (person-rem)	1.2E-5			
	Cancer Fatalities	6.0E-9			
	Cancer Incidence	2.1E-8	5.3E-8		
	Genetic Effects	1.2E-9			
Offsite MEI	Dose (rem)	7.0E-10			
	Cancer Fatalities	3.5E-13			
	Cancer Incidence	1.2E-12	1.7E-12		
	Genetic Effects	7.0E-14			
	Hazard Index			9.5E-12	
WM Workers 5	Dose (FTE-rem)	3.3E-2			
	Cancer Fatalities	1.3E-5			
	Cancer Incidence	4.6E-5	4.6E-9		
	Genetic Effects	2.0E-6			
	Exposure Index			3.8E-7	
	Construction Fatalities				5.8E-4
	Construction Injuries				2.5E-1
	Operation Fatalities				5.8E-4
	Operation Injuries				4.9E-1

Table 6.1-112. Risks Associated with Routine Management of LLMW at NTS Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3756	Dose (person-rem)	3.8E-11			
	Cancer Fatalities	1.9E-14			
	Cancer Incidence	6.5E-14	9.2E-14		
	Genetic Effects	0.00			
Noninvolved Worker MEI	Dose (rem)	1.8E-13			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
	Hazard Index			0.00	
Offsite Population 14266	Dose (person-rem)	1.5E-11			
	Cancer Fatalities	7.0E-15			
	Cancer Incidence	2.5E-14	0.00		
	Genetic Effects	0.00			
Offsite MEI	Dose (rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
	Hazard Index			0.00	
WM Workers 0	Dose (FTE-rem)	6.5E-4			
	Cancer Fatalities	2.6E-7			
	Cancer Incidence	9.1E-7	7.5E-14		
	Genetic Effects	3.9E-8			
	Exposure Index			8.1E-10	
	Construction Fatalities				1.2E-5
	Construction Injuries				5.1E-3
	Operation Fatalities				1.2E-5
	Operation Injuries				9.9E-3

Table 6.1-113. Risks Associated with Routine Management of LLMW at ORR Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3809	Dose (person-rem)	1.3E-1			
	Cancer Fatalities	6.6E-5			
	Cancer Incidence	2.2E-4	9.7E-6		
	Genetic Effects	1.3E-5			
Noninvolved Worker MEI	Dose (rem)	1.2E-4			
	Cancer Fatalities	5.9E-8			
	Cancer Incidence	2.0E-7	9.3E-9		
	Genetic Effects	1.2E-8			
	Hazard Index			1.3E-5	
Offsite Population 881652	Dose (person-rem)	3.3			
	Cancer Fatalities	1.6E-3			
	Cancer Incidence	5.6E-3	2.9E-5		
	Genetic Effects	3.3E-4			
Offsite MEI	Dose (rem)	1.0E-4			
	Cancer Fatalities	5.0E-8			
	Cancer Incidence	1.7E-7	1.5E-9		
	Genetic Effects	1.0E-8			
	Hazard Index			2.0E-6	
WM Workers 3116	Dose (FTE-rem)	6.0E2			
	Cancer Fatalities	2.4E-1			
	Cancer Incidence	8.4E-1	8.6E-3		
	Genetic Effects	3.6E-2			
	Exposure Index			1.6E-2	
	Construction Fatalities				3.3E-1
	Construction Injuries				1.5E2
	Operation Fatalities				3.8E-1
	Operation Injuries				3.2E2

Table 6.1-114. Risks Associated with Routine Management of LLMW at Pantex Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 2825	Dose (person-rem)	4.7E-4			
	Cancer Fatalities	2.3E-7			
	Cancer Incidence	7.9E-7	4.1E-10		
	Genetic Effects	4.7E-8			
Noninvolved Worker MEI	Dose (rem)	8.9E-7			
	Cancer Fatalities	4.4E-10			
	Cancer Incidence	1.5E-9	7.0E-13		
	Genetic Effects	8.9E-11			
	Hazard Index			1.8E-10	
Offsite Population 265185	Dose (person-rem)	4.7E-3			
	Cancer Fatalities	2.3E-6			
	Cancer Incidence	8.0E-6	3.6E-10		
	Genetic Effects	4.7E-7			
Offsite MEI	Dose (rem)	4.0E-7			
	Cancer Fatalities	2.0E-10			
	Cancer Incidence	6.8E-10	3.0E-14		
	Genetic Effects	4.0E-11			
	Hazard Index			7.5E-12	
WM Workers 48	Dose (FTE-rem)	4.2E-1			
	Cancer Fatalities	1.7E-4			
	Cancer Incidence	5.8E-4	5.5E-8		
	Genetic Effects	2.5E-5			
	Exposure Index			1.3E-6	
	Construction Fatalities				8.6E-3
	Construction Injuries				3.8
	Operation Fatalities				5.8E-3
	Operation Injuries				5.0

Table 6.1-115. Risks Associated with Routine Management of LLMW at PGDP Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1952	Dose (person-rem)	1.3E-4	5.1E-9		
	Cancer Fatalities	6.4E-8			
	Cancer Incidence	2.2E-7			
	Genetic Effects	1.3E-8			
Noninvolved Worker MEI	Dose (rem)	1.6E-7	7.8E-12	2.9E-10	
	Cancer Fatalities	7.9E-11			
	Cancer Incidence	2.7E-10			
	Genetic Effects	1.6E-11			
	Hazard Index				
Offsite Population 500502	Dose (person-rem)	1.6E-3	9.7E-9		
	Cancer Fatalities	8.1E-7			
	Cancer Incidence	2.8E-6			
	Genetic Effects	1.6E-7			
Offsite MEI	Dose (rem)	1.8E-7	1.3E-12	5.0E-11	
	Cancer Fatalities	9.0E-11			
	Cancer Incidence	3.1E-10			
	Genetic Effects	1.8E-11			
	Hazard Index				
WM Workers 48	Dose (FTE-rem)	3.7E-1	5.0E-7	5.1E-6	7.4E-3
	Cancer Fatalities	1.5E-4			
	Cancer Incidence	5.2E-4			
	Genetic Effects	2.2E-5			
	Exposure Index				
	Construction Fatalities				3.2
	Construction Injuries				5.8E-3
	Operation Fatalities				5.0
	Operation Injuries				

Table 6.1–116. Risks Associated with Routine Management of LLMW at Ports Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3226	Dose (person-rem)	3.7E-6			
	Cancer Fatalities	1.9E-9			
	Cancer Incidence	6.4E-9	2.8E-8		
	Genetic Effects	3.7E-10			
Noninvolved Worker MEI	Dose (rem)	2.1E-9			
	Cancer Fatalities	1.1E-12			
	Cancer Incidence	3.6E-12	1.6E-11		
	Genetic Effects	2.1E-13			
	Hazard Index			2.0E-8	
Offsite Population 639602	Dose (person-rem)	3.6E-5			
	Cancer Fatalities	1.8E-8			
	Cancer Incidence	6.1E-8	4.9E-8		
	Genetic Effects	3.6E-9			
Offsite MEI	Dose (rem)	4.5E-9			
	Cancer Fatalities	2.3E-12			
	Cancer Incidence	7.6E-12	8.2E-12		
	Genetic Effects	4.5E-13			
	Hazard Index			1.0E-8	
WM Workers 405	Dose (FTE-rem)	2.1			
	Cancer Fatalities	8.3E-4			
	Cancer Incidence	2.9E-3	8.1E-6		
	Genetic Effects	1.2E-4			
	Exposure Index			3.6E-5	
	Construction Fatalities				6.9E-2
	Construction Injuries				3.0E1
	Operation Fatalities				4.9E-2
	Operation Injuries				4.2E1

Table 6.1-117. Risks Associated with Routine Management of LLMW at RFETS Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 6993	Dose (person-rem)	1.4E-4			
	Cancer Fatalities	6.8E-8			
	Cancer Incidence	2.3E-7	7.6E-8		
	Genetic Effects	1.4E-8			
Noninvolved Worker MEI	Dose (rem)	8.1E-8			
	Cancer Fatalities	4.1E-11			
	Cancer Incidence	1.4E-10	3.9E-11		
	Genetic Effects	8.1E-12			
	Hazard Index			2.4E-9	
Offsite Population 2171877	Dose (person-rem)	2.7E-3			
	Cancer Fatalities	1.3E-6			
	Cancer Incidence	4.5E-6	3.8E-7		
	Genetic Effects	2.7E-7			
Offsite MEI	Dose (rem)	3.6E-8			
	Cancer Fatalities	1.8E-11			
	Cancer Incidence	6.1E-11	3.0E-12		
	Genetic Effects	3.6E-12			
	Hazard Index			1.9E-10	
WM Workers 1972	Dose (FTE-rem)	2.5			
	Cancer Fatalities	9.9E-4			
	Cancer Incidence	3.5E-3	1.7E-5		
	Genetic Effects	1.5E-4			
	Exposure Index			1.1E-5	
	Construction Fatalities				1.2E-1
	Construction Injuries				5.2E1
	Operation Fatalities				9.3E-2
	Operation Injuries				7.9E1

Table 6.1-118. Risks Associated with Routine Management of LLMW at SNL-NM Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 10576	Dose (person-rem)	6.9E-7	6.0E-11		
	Cancer Fatalities	3.5E-10			
	Cancer Incidence	1.2E-9			
	Genetic Effects	6.9E-11			
Noninvolved Worker MEI	Dose (rem)	2.9E-10	2.3E-14	3.4E-11	
	Cancer Fatalities	1.4E-13			
	Cancer Incidence	4.9E-13			
	Genetic Effects	2.9E-14			
	Hazard Index				
Offsite Population 610714	Dose (person-rem)	3.6E-5	5.4E-10		
	Cancer Fatalities	1.8E-8			
	Cancer Incidence	6.1E-8			
	Genetic Effects	3.6E-9			
Offsite MEI	Dose (rem)	1.4E-9	2.3E-14	3.4E-11	
	Cancer Fatalities	7.1E-13			
	Cancer Incidence	2.4E-12			
	Genetic Effects	1.4E-13			
	Hazard Index				
WM Workers 5	Dose (FTE-rem)	4.3E-2	3.4E-10	4.9E-8	5.9E-4
	Cancer Fatalities	1.7E-5			
	Cancer Incidence	6.1E-5			
	Genetic Effects	2.6E-6			
	Exposure Index				
	Construction Fatalities				2.6E-1
	Construction Injuries				5.9E-4
	Operation Fatalities				5.0E-1
	Operation Injuries				

Table 6.1-119. Risks Associated with Routine Management of LLMW at SRS Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 15996	Dose (person-rem)	1.2E-1			
	Cancer Fatalities	6.1E-5			
	Cancer Incidence	2.1E-4	4.9E-7		
	Genetic Effects	1.2E-5			
Noninvolved Worker MEI	Dose (rem)	1.1E-4			
	Cancer Fatalities	5.3E-8			
	Cancer Incidence	1.8E-7	5.6E-10		
	Genetic Effects	1.1E-8			
	Hazard Index			6.9E-7	
Offsite Population 620618	Dose (person-rem)	3.5			
	Cancer Fatalities	1.8E-3			
	Cancer Incidence	6.0E-3	9.8E-7		
	Genetic Effects	3.5E-4			
Offsite MEI	Dose (rem)	3.3E-5			
	Cancer Fatalities	1.7E-8			
	Cancer Incidence	5.7E-8	1.3E-11		
	Genetic Effects	3.3E-9			
	Hazard Index			1.6E-8	
WM Workers 1291	Dose (FTE-rem)	2.7E2			
	Cancer Fatalities	1.1E-1			
	Cancer Incidence	3.8E-1	7.0E-4		
	Genetic Effects	1.6E-2			
	Exposure Index			5.9E-3	
	Construction Fatalities				1.7E-1
	Construction Injuries				7.5E1
	Operation Fatalities				1.6E-1
	Operation Injuries				1.3E2

Table 6.1–120. Risks Associated with Routine Management of LLMW at WVDP Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 960	Dose (person-rem)	4.6E-7	9.0E-11		
	Cancer Fatalities	2.3E-10			
	Cancer Incidence	7.8E-10			
	Genetic Effects	4.6E-11			
Noninvolved Worker MEI	Dose (rem)	2.6E-9	4.5E-13	6.9E-11	
	Cancer Fatalities	1.3E-12			
	Cancer Incidence	4.4E-12			
	Genetic Effects	2.6E-13			
	Hazard Index				
Offsite Population 1698391	Dose (person-rem)	3.5E-4	4.5E-9		
	Cancer Fatalities	1.7E-7			
	Cancer Incidence	5.9E-7			
	Genetic Effects	3.5E-8			
Offsite MEI	Dose (rem)	5.2E-9	1.5E-13	2.4E-11	
	Cancer Fatalities	2.6E-12			
	Cancer Incidence	8.9E-12			
	Genetic Effects	5.2E-13			
	Hazard Index				
WM Workers 11	Dose (FTE-rem)	7.3E-2	1.2E-9	9.9E-8	2.0E-3 8.7E-1 1.3E-3 1.1
	Cancer Fatalities	2.9E-5			
	Cancer Incidence	1.0E-4			
	Genetic Effects	4.4E-6			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-121. Risks Associated with Routine Management of LLMW at ANL-E Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 5571	Dose (person-rem)	5.6E-5			
	Cancer Fatalities	2.8E-8			
	Cancer Incidence	9.6E-8	3.0E-9		
	Genetic Effects	5.6E-9			
Noninvolved Worker MEI	Dose (rem)	5.7E-8			
	Cancer Fatalities	2.8E-11			
	Cancer Incidence	9.6E-11	2.7E-12		
	Genetic Effects	5.7E-12			
	Hazard Index			3.5E-9	
Offsite Population 7939785	Dose (person-rem)	1.2E-2			
	Cancer Fatalities	6.0E-6			
	Cancer Incidence	2.1E-5	1.4E-7		
	Genetic Effects	1.2E-6			
Offsite MEI	Dose (rem)	6.6E-8			
	Cancer Fatalities	3.3E-11			
	Cancer Incidence	1.1E-10	9.1E-13		
	Genetic Effects	6.6E-12			
	Hazard Index			1.2E-9	
WM Workers 200	Dose (FTE-rem)	2.6E1			
	Cancer Fatalities	1.0E-2			
	Cancer Incidence	3.6E-2	1.1E-6		
	Genetic Effects	1.6E-3			
	Exposure Index			4.7E-6	
	Construction Fatalities				2.3E-2
	Construction Injuries				9.9
	Operation Fatalities				2.4E-2
	Operation Injuries				2.1E1

Table 6.1-122. Risks Associated with Routine Management of LLMW at BNL Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3517	Dose (person-rem)	6.4E-7			
	Cancer Fatalities	3.2E-10			
	Cancer Incidence	1.1E-9	3.1E-10		
	Genetic Effects	6.4E-11			
Noninvolved Worker MEI	Dose (rem)	7.1E-10			
	Cancer Fatalities	3.6E-13			
	Cancer Incidence	1.2E-12	1.5E-13		
	Genetic Effects	7.1E-14			
	Hazard Index			1.1E-10	
Offsite Population 5738554	Dose (person-rem)	1.1E-4			
	Cancer Fatalities	5.2E-8			
	Cancer Incidence	1.8E-7	9.0E-9		
	Genetic Effects	1.1E-8			
Offsite MEI	Dose (rem)	1.4E-9			
	Cancer Fatalities	7.0E-13			
	Cancer Incidence	2.4E-12	1.5E-13		
	Genetic Effects	1.4E-13			
	Hazard Index			1.1E-10	
WM Workers 16	Dose (FTE-rem)	1.4E-1			
	Cancer Fatalities	5.7E-5			
	Cancer Incidence	2.0E-4	1.6E-8		
	Genetic Effects	8.5E-6			
	Exposure Index			4.4E-7	
	Construction Fatalities				2.0E-3
	Construction Injuries				8.7E-1
	Operation Fatalities				2.0E-3
	Operation Injuries				1.7

Table 6.1-123. Risks Associated with Routine Management of LLMW at FEMP Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 2456	Dose (person-rem)	2.2E-6			
	Cancer Fatalities	1.1E-9			
	Cancer Incidence	3.7E-9	6.4E-9		
	Genetic Effects	2.2E-10			
Noninvolved Worker MEI	Dose (rem)	1.9E-9			
	Cancer Fatalities	9.5E-13			
	Cancer Incidence	3.2E-12	2.9E-12		
	Genetic Effects	1.9E-13			
	Hazard Index			6.3E-10	
Offsite Population 2764589	Dose (person-rem)	2.9E-4			
	Cancer Fatalities	1.4E-7			
	Cancer Incidence	4.9E-7	9.2E-8		
	Genetic Effects	2.9E-8			
Offsite MEI	Dose (rem)	5.4E-9			
	Cancer Fatalities	2.7E-12			
	Cancer Incidence	9.2E-12	2.9E-12		
	Genetic Effects	5.4E-13			
	Hazard Index			6.3E-10	
WM Workers 269	Dose (FTE-rem)	6.3E-1			
	Cancer Fatalities	2.5E-4			
	Cancer Incidence	8.8E-4	1.5E-6		
	Genetic Effects	3.8E-5			
	Exposure Index			6.8E-6	
	Construction Fatalities				5.6E-2
	Construction Injuries				2.4E1
	Operation Fatalities				3.3E-2
	Operation Injuries				2.8E1

Table 6.1-124. Risks Associated with Routine Management of LLMW at Hanford Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8674	Dose (person-rem)	6.6E-1			
	Cancer Fatalities	3.3E-4			
	Cancer Incidence	1.1E-3	7.3E-6		
	Genetic Effects	6.6E-5			
Noninvolved Worker MEI	Dose (rem)	1.2E-3			
	Cancer Fatalities	5.8E-7			
	Cancer Incidence	2.0E-6	1.4E-8		
	Genetic Effects	1.2E-7			
	Hazard Index			1.6E-5	
Offsite Population 377645	Dose (person-rem)	5.0E1			
	Cancer Fatalities	2.5E-2			
	Cancer Incidence	8.5E-2	1.2E-5		
	Genetic Effects	5.0E-3			
Offsite MEI	Dose (rem)	1.0E-3			
	Cancer Fatalities	5.2E-7			
	Cancer Incidence	1.8E-6	4.1E-10		
	Genetic Effects	1.0E-7			
	Hazard Index			4.5E-7	
WM Workers 6706	Dose (FTE-rem)	1.2E3			
	Cancer Fatalities	4.9E-1			
	Cancer Incidence	1.7	1.8E-2		
	Genetic Effects	7.4E-2			
	Exposure Index			2.6E-2	
	Construction Fatalities				8.9E-1
	Construction Injuries				3.9E2
	Operation Fatalities				8.1E-1
	Operation Injuries				6.9E2

Table 6.1-125. Risks Associated with Routine Management of LLMW at INEL Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem)	6.9E-4			
	Cancer Fatalities	3.5E-7			
	Cancer Incidence	1.2E-6	6.4E-9		
	Genetic Effects	6.9E-8			
Noninvolved Worker MEI	Dose (rem)	6.0E-7			
	Cancer Fatalities	3.0E-10			
	Cancer Incidence	1.0E-9	5.4E-12		
	Genetic Effects	6.0E-11			
	Hazard Index			6.2E-9	
Offsite Population 153061	Dose (person-rem)	9.9E-3			
	Cancer Fatalities	4.9E-6			
	Cancer Incidence	1.7E-5	4.9E-9		
	Genetic Effects	9.9E-7			
Offsite MEI	Dose (rem)	1.2E-6			
	Cancer Fatalities	6.1E-10			
	Cancer Incidence	2.1E-9	6.7E-13		
	Genetic Effects	1.2E-10			
	Hazard Index			7.7E-10	
WM Workers 278	Dose (FTE-rem)	1.8E2			
	Cancer Fatalities	7.1E-2			
	Cancer Incidence	2.5E-1	7.0E-6		
	Genetic Effects	1.1E-2			
	Exposure Index			4.3E-5	
	Construction Fatalities				4.1E-2
	Construction Injuries				1.8E1
	Operation Fatalities				3.4E-2
	Operation Injuries				2.9E1

Table 6.1-126. Risks Associated with Routine Management of LLMW at KAPL-K Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3896	Dose (person-rem)	5.3E-6			
	Cancer Fatalities	2.7E-9			
	Cancer Incidence	9.0E-9	1.7E-10		
	Genetic Effects	5.3E-10			
Noninvolved Worker MEI	Dose (rem)	2.5E-9			
	Cancer Fatalities	1.2E-12			
	Cancer Incidence	4.2E-12	6.7E-14		
	Genetic Effects	2.5E-13			
	Hazard Index			4.3E-12	
Offsite Population 1290172	Dose (person-rem)	5.2E-4			
	Cancer Fatalities	2.6E-7			
	Cancer Incidence	8.8E-7	2.6E-9		
	Genetic Effects	5.2E-8			
Offsite MEI	Dose (rem)	1.2E-8			
	Cancer Fatalities	5.8E-12			
	Cancer Incidence	2.0E-11	6.7E-14		
	Genetic Effects	1.2E-12			
	Hazard Index			4.3E-12	
WM Workers 9	Dose (FTE-rem)	1.6			
	Cancer Fatalities	6.3E-4			
	Cancer Incidence	2.2E-3	2.7E-9		
	Genetic Effects	9.4E-5			
	Exposure Index			1.2E-7	
	Construction Fatalities				1.1E-3
	Construction Injuries				4.8E-1
	Operation Fatalities				1.1E-3
	Operation Injuries				9.3E-1

Table 6.1-127. Risks Associated with Routine Management of LLMW at KCP Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 4410	Dose (person-rem)	6.7E-8			
	Cancer Fatalities	3.3E-11			
	Cancer Incidence	1.1E-10	5.7E-13		
	Genetic Effects	6.7E-12			
Noninvolved Worker MEI	Dose (rem)	4.7E-11			
	Cancer Fatalities	2.4E-14			
	Cancer Incidence	8.0E-14	0.00		
	Genetic Effects	0.00			
	Hazard Index			4.4E-13	
Offsite Population 1729833	Dose (person-rem)	4.9E-6			
	Cancer Fatalities	2.5E-9			
	Cancer Incidence	8.3E-9	9.7E-12		
	Genetic Effects	4.9E-10			
Offsite MEI	Dose (rem)	2.2E-10			
	Cancer Fatalities	1.1E-13			
	Cancer Incidence	3.8E-13	0.00		
	Genetic Effects	2.2E-14			
	Hazard Index			4.4E-13	
WM Workers 0	Dose (FTE-rem)	2.0E-3			
	Cancer Fatalities	8.0E-7			
	Cancer Incidence	2.8E-6	2.2E-13		
	Genetic Effects	1.2E-7			
	Exposure Index			1.3E-9	
	Construction Fatalities				2.9E-5
	Construction Injuries				1.3E-2
	Operation Fatalities				2.9E-5
	Operation Injuries				2.5E-2

Table 6.1–128. Risks Associated with Routine Management of LLMW at LANL Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 11552	Dose (person-rem)	1.5E-3			
	Cancer Fatalities	7.5E-7			
	Cancer Incidence	2.6E-6	8.1E-9		
	Genetic Effects	1.5E-7			
Noninvolved Worker MEI	Dose (rem)	1.1E-6			
	Cancer Fatalities	5.5E-10			
	Cancer Incidence	1.9E-9	5.0E-12		
	Genetic Effects	1.1E-10			
	Hazard Index			7.5E-9	
Offsite Population 159152	Dose (person-rem)	7.6E-2			
	Cancer Fatalities	3.8E-5			
	Cancer Incidence	1.3E-4	1.6E-8		
	Genetic Effects	7.6E-6			
Offsite MEI	Dose (rem)	8.0E-6			
	Cancer Fatalities	4.0E-9			
	Cancer Incidence	1.4E-8	2.0E-12		
	Genetic Effects	8.0E-10			
	Hazard Index			3.0E-9	
WM Workers 146	Dose (FTE-rem)	1.7			
	Cancer Fatalities	6.9E-4			
	Cancer Incidence	2.4E-3	3.0E-7		
	Genetic Effects	1.0E-4			
	Exposure Index			5.8E-6	
	Construction Fatalities				2.6E-2
	Construction Injuries				1.1E1
	Operation Fatalities				1.8E-2
	Operation Injuries				1.5E1

Table 6.1-129. Risks Associated with Routine Management of LLMW at LBL Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3940	Dose (person-rem)	1.1E-7			
	Cancer Fatalities	5.6E-11			
	Cancer Incidence	1.9E-10	6.0E-10		
	Genetic Effects	1.1E-11			
Noninvolved Worker MEI	Dose (rem)	8.8E-11			
	Cancer Fatalities	4.4E-14			
	Cancer Incidence	1.5E-13	4.5E-13		
	Genetic Effects	9.0E-15			
	Hazard Index			1.1E-10	
Offsite Population 1586829	Dose (person-rem)	2.0E-5			
	Cancer Fatalities	9.8E-9			
	Cancer Incidence	3.3E-8	1.6E-8		
	Genetic Effects	2.0E-9			
Offsite MEI	Dose (rem)	2.9E-10			
	Cancer Fatalities	1.5E-13			
	Cancer Incidence	5.0E-13	3.3E-13		
	Genetic Effects	2.9E-14			
	Hazard Index			8.0E-11	
WM Workers 8	Dose (FTE-rem)	5.3E-2			
	Cancer Fatalities	2.1E-5			
	Cancer Incidence	7.4E-5	6.7E-9		
	Genetic Effects	3.2E-6			
	Exposure Index			3.2E-7	
	Construction Fatalities				9.4E-4
	Construction Injuries				4.1E-1
	Operation Fatalities				9.4E-4
	Operation Injuries				8.0E-1

Table 6.1-130. Risks Associated with Routine Management of LLMW at LLNL Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 9504	Dose (person-rem)	4.1E-5			
	Cancer Fatalities	2.0E-8			
	Cancer Incidence	6.9E-8	1.1E-7		
	Genetic Effects	4.1E-9			
Noninvolved Worker MEI	Dose (rem)	1.4E-8			
	Cancer Fatalities	6.9E-12			
	Cancer Incidence	2.3E-11	3.2E-11		
	Genetic Effects	1.4E-12			
	Hazard Index			7.9E-9	
Offsite Population 6324234	Dose (person-rem)	8.8E-4			
	Cancer Fatalities	4.4E-7			
	Cancer Incidence	1.5E-6	4.5E-7		
	Genetic Effects	8.8E-8			
Offsite MEI	Dose (rem)	1.4E-8			
	Cancer Fatalities	7.2E-12			
	Cancer Incidence	2.5E-11	1.0E-11		
	Genetic Effects	1.4E-12			
	Hazard Index			2.5E-9	
WM Workers 136	Dose (FTE-rem)	1.5			
	Cancer Fatalities	6.2E-4			
	Cancer Incidence	2.2E-3	2.9E-6		
	Genetic Effects	9.2E-5			
	Exposure Index			8.5E-6	
	Construction Fatalities				1.6E-2
	Construction Injuries				7.1
	Operation Fatalities				1.7E-2
	Operation Injuries				1.4E1

Table 6.1-131. Risks Associated with Routine Management of LLMW at Mound Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1688	Dose (person-rem)	9.9E-8			
	Cancer Fatalities	5.0E-11			
	Cancer Incidence	1.7E-10	1.5E-9		
	Genetic Effects	9.9E-12			
Noninvolved Worker MEI	Dose (rem)	1.6E-10			
	Cancer Fatalities	7.9E-14			
	Cancer Incidence	2.7E-13	1.7E-12		
	Genetic Effects	1.6E-14			
	Hazard Index			9.5E-12	
Offsite Population 3032983	Dose (person-rem)	1.2E-5			
	Cancer Fatalities	6.0E-9			
	Cancer Incidence	2.1E-8	5.3E-8		
	Genetic Effects	1.2E-9			
Offsite MEI	Dose (rem)	7.0E-10			
	Cancer Fatalities	3.5E-13			
	Cancer Incidence	1.2E-12	1.7E-12		
	Genetic Effects	7.0E-14			
	Hazard Index			9.5E-12	
WM Workers 5	Dose (FTE-rem)	3.3E-2			
	Cancer Fatalities	1.3E-5			
	Cancer Incidence	4.6E-5	4.6E-9		
	Genetic Effects	2.0E-6			
	Exposure Index			3.8E-7	
	Construction Fatalities				5.8E-4
	Construction Injuries				2.5E-1
	Operation Fatalities				5.8E-4
	Operation Injuries				4.9E-1

Table 6.1-132. Risks Associated with Routine Management of LLMW at NTS Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3756	Dose (person-rem)	3.8E-11			
	Cancer Fatalities	1.9E-14			
	Cancer Incidence	6.5E-14	9.2E-14		
	Genetic Effects	0.00			
Noninvolved Worker MEI	Dose (rem)	1.8E-13			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
	Hazard Index			0.00	
Offsite Population 14266	Dose (person-rem)	1.5E-11			
	Cancer Fatalities	7.0E-15			
	Cancer Incidence	2.5E-14	0.00		
	Genetic Effects	0.00			
Offsite MEI	Dose (rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	0.00		
	Genetic Effects	0.00			
	Hazard Index			0.00	
WM Workers 0	Dose (FTE-rem)	6.5E-4			
	Cancer Fatalities	2.6E-7			
	Cancer Incidence	9.1E-7	7.5E-14		
	Genetic Effects	3.9E-8			
	Exposure Index			8.1E-10	
	Construction Fatalities				1.2E-5
	Construction Injuries				5.1E-3
	Operation Fatalities				1.2E-5
	Operation Injuries				9.9E-3

Table 6.1-133. Risks Associated with Routine Management of LLMW at ORR Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3809	Dose (person-rem)	4.5E-4	3.7E-7		
	Cancer Fatalities	2.3E-7			
	Cancer Incidence	7.7E-7			
	Genetic Effects	4.5E-8			
Noninvolved Worker MEI	Dose (rem)	4.1E-7	3.6E-10	5.9E-8	
	Cancer Fatalities	2.1E-10			
	Cancer Incidence	7.0E-10			
	Genetic Effects	4.1E-11			
	Hazard Index				
Offsite Population 881652	Dose (person-rem)	1.4E-2	1.1E-6		
	Cancer Fatalities	6.8E-6			
	Cancer Incidence	2.3E-5			
	Genetic Effects	1.4E-6			
Offsite MEI	Dose (rem)	4.2E-7	5.8E-11	9.5E-9	
	Cancer Fatalities	2.1E-10			
	Cancer Incidence	7.1E-10			
	Genetic Effects	4.2E-11			
	Hazard Index				
WM Workers 490	Dose (FTE-rem)	6.0E1	1.5E-4	2.9E-4	7.8E-2
	Cancer Fatalities	2.4E-2			
	Cancer Incidence	8.4E-2			
	Genetic Effects	3.6E-3			
	Exposure Index				
	Construction Fatalities				3.4E1
	Construction Injuries				5.9E-2
	Operation Fatalities				5.0E1
	Operation Injuries				

Table 6.1-134. Risks Associated with Routine Management of LLMW at Pantex Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 2825	Dose (person-rem)	4.7E-4			
	Cancer Fatalities	2.3E-7			
	Cancer Incidence	7.9E-7	4.1E-10		
	Genetic Effects	4.7E-8			
Noninvolved Worker MEI	Dose (rem)	8.9E-7			
	Cancer Fatalities	4.4E-10			
	Cancer Incidence	1.5E-9	7.0E-13		
	Genetic Effects	8.9E-11			
	Hazard Index			1.8E-10	
Offsite Population 265185	Dose (person-rem)	4.7E-3			
	Cancer Fatalities	2.3E-6			
	Cancer Incidence	8.0E-6	3.6E-10		
	Genetic Effects	4.7E-7			
Offsite MEI	Dose (rem)	4.0E-7			
	Cancer Fatalities	2.0E-10			
	Cancer Incidence	6.8E-10	3.0E-14		
	Genetic Effects	4.0E-11			
	Hazard Index			7.5E-12	
WM Workers 48	Dose (FTE-rem)	4.2E-1			
	Cancer Fatalities	1.7E-4			
	Cancer Incidence	5.8E-4	5.5E-8		
	Genetic Effects	2.5E-5			
	Exposure Index			1.3E-6	
	Construction Fatalities				8.6E-3
	Construction Injuries				3.8
	Operation Fatalities				5.8E-3
	Operation Injuries				5.0

Table 6.1-135. Risks Associated with Routine Management of LLMW at PGDP Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 1952	Dose (person-rem)	1.3E-4			
	Cancer Fatalities	6.4E-8			
	Cancer Incidence	2.2E-7	5.1E-9		
	Genetic Effects	1.3E-8			
Noninvolved Worker MEI	Dose (rem)	1.6E-7			
	Cancer Fatalities	7.9E-11			
	Cancer Incidence	2.7E-10	7.8E-12		
	Genetic Effects	1.6E-11			
	Hazard Index			2.9E-10	
Offsite Population 500502	Dose (person-rem)	1.6E-3			
	Cancer Fatalities	8.1E-7			
	Cancer Incidence	2.8E-6	9.7E-9		
	Genetic Effects	1.6E-7			
Offsite MEI	Dose (rem)	1.8E-7			
	Cancer Fatalities	9.0E-11			
	Cancer Incidence	3.1E-10	1.3E-12		
	Genetic Effects	1.8E-11			
	Hazard Index			5.0E-11	
WM Workers 48	Dose (FTE-rem)	3.7E-1			
	Cancer Fatalities	1.5E-4			
	Cancer Incidence	5.2E-4	5.0E-7		
	Genetic Effects	2.2E-5			
	Exposure Index			5.1E-6	
	Construction Fatalities				7.4E-3
	Construction Injuries				3.2
	Operation Fatalities				5.8E-3
	Operation Injuries				5.0

Table 6.1-136. Risks Associated with Routine Management of LLMW at Ports Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3226	Dose (person-rem)	3.7E-6			
	Cancer Fatalities	1.9E-9			
	Cancer Incidence	6.4E-9	2.8E-8		
	Genetic Effects	3.7E-10			
Noninvolved Worker MEI	Dose (rem)	2.1E-9			
	Cancer Fatalities	1.1E-12			
	Cancer Incidence	3.6E-12	1.6E-11		
	Genetic Effects	2.1E-13			
	Hazard Index			2.0E-8	
Offsite Population 639602	Dose (person-rem)	3.6E-5			
	Cancer Fatalities	1.8E-8			
	Cancer Incidence	6.1E-8	4.9E-8		
	Genetic Effects	3.6E-9			
Offsite MEI	Dose (rem)	4.5E-9			
	Cancer Fatalities	2.3E-12			
	Cancer Incidence	7.6E-12	8.2E-12		
	Genetic Effects	4.5E-13			
	Hazard Index			1.0E-8	
WM Workers 405	Dose (FTE-rem)	2.1			
	Cancer Fatalities	8.3E-4			
	Cancer Incidence	2.9E-3	8.1E-6		
	Genetic Effects	1.2E-4			
	Exposure Index			3.6E-5	
	Construction Fatalities				6.9E-2
	Construction Injuries				3.0E1
	Operation Fatalities				4.9E-2
	Operation Injuries				4.2E1

Table 6.1-137. Risks Associated with Routine Management of LLMW at RFETS Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 6993	Dose (person-rem)	1.4E-4			
	Cancer Fatalities	6.8E-8			
	Cancer Incidence	2.3E-7	7.6E-8		
	Genetic Effects	1.4E-8			
Noninvolved Worker MEI	Dose (rem)	8.1E-8			
	Cancer Fatalities	4.1E-11			
	Cancer Incidence	1.4E-10	3.9E-11		
	Genetic Effects	8.1E-12			
	Hazard Index			2.4E-9	
Offsite Population 2171877	Dose (person-rem)	2.7E-3			
	Cancer Fatalities	1.3E-6			
	Cancer Incidence	4.5E-6	3.8E-7		
	Genetic Effects	2.7E-7			
Offsite MEI	Dose (rem)	3.6E-8			
	Cancer Fatalities	1.8E-11			
	Cancer Incidence	6.1E-11	3.0E-12		
	Genetic Effects	3.6E-12			
	Hazard Index			1.9E-10	
WM Workers 1972	Dose (FTE-rem)	2.5			
	Cancer Fatalities	9.9E-4			
	Cancer Incidence	3.5E-3	1.7E-5		
	Genetic Effects	1.5E-4			
	Exposure Index			1.1E-5	
	Construction Fatalities				1.2E-1
	Construction Injuries				5.2E1
	Operation Fatalities				9.3E-2
	Operation Injuries				7.9E1

Table 6.1-138. Risks Associated with Routine Management of LLMW at SNL-NM Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 10576	Dose (person-rem)	6.9E-7			
	Cancer Fatalities	3.5E-10			
	Cancer Incidence	1.2E-9	6.0E-11		
	Genetic Effects	6.9E-11			
Noninvolved Worker MEI	Dose (rem)	2.9E-10			
	Cancer Fatalities	1.4E-13			
	Cancer Incidence	4.9E-13	2.3E-14		
	Genetic Effects	2.9E-14			
	Hazard Index			3.4E-11	
Offsite Population 610714	Dose (person-rem)	3.6E-5			
	Cancer Fatalities	1.8E-8			
	Cancer Incidence	6.1E-8	5.4E-10		
	Genetic Effects	3.6E-9			
Offsite MEI	Dose (rem)	1.4E-9			
	Cancer Fatalities	7.1E-13			
	Cancer Incidence	2.4E-12	2.3E-14		
	Genetic Effects	1.4E-13			
	Hazard Index			3.4E-11	
WM Workers 5	Dose (FTE-rem)	4.3E-2			
	Cancer Fatalities	1.7E-5			
	Cancer Incidence	6.1E-5	3.4E-10		
	Genetic Effects	2.6E-6			
	Exposure Index			4.9E-8	
	Construction Fatalities				5.9E-4
	Construction Injuries				2.6E-1
	Operation Fatalities				5.9E-4
	Operation Injuries				5.0E-1

Table 6.1-139. Risks Associated with Routine Management of LLMW at SRS Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 15996	Dose (person-rem)	1.3E-4			
	Cancer Fatalities	6.5E-8			
	Cancer Incidence	2.2E-7	3.1E-8		
	Genetic Effects	1.3E-8			
Noninvolved Worker MEI	Dose (rem)	1.1E-7			
	Cancer Fatalities	5.7E-11			
	Cancer Incidence	1.9E-10	3.5E-11		
	Genetic Effects	1.1E-11			
	Hazard Index			7.0E-9	
Offsite Population 620618	Dose (person-rem)	2.7E-3			
	Cancer Fatalities	1.3E-6			
	Cancer Incidence	4.6E-6	6.1E-8		
	Genetic Effects	2.7E-7			
Offsite MEI	Dose (rem)	2.5E-8			
	Cancer Fatalities	1.3E-11			
	Cancer Incidence	4.3E-11	7.9E-13		
	Genetic Effects	2.5E-12			
	Hazard Index			1.6E-10	
WM Workers 207	Dose (FTE-rem)	8.2E1			
	Cancer Fatalities	3.3E-2			
	Cancer Incidence	1.1E-1	3.8E-5		
	Genetic Effects	4.9E-3			
	Exposure Index			1.0E-4	
	Construction Fatalities				2.4E-2
	Construction Injuries				1.0E1
	Operation Fatalities				2.5E-2
	Operation Injuries				2.1E1

Table 6.1-140. Risks Associated with Routine Management of LLMW at WVDP Under the Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 960	Dose (person-rem)	4.6E-7	9.0E-11		
	Cancer Fatalities	2.3E-10			
	Cancer Incidence	7.8E-10			
	Genetic Effects	4.6E-11			
Noninvolved Worker MEI	Dose (rem)	2.6E-9	4.5E-13	6.9E-11	
	Cancer Fatalities	1.3E-12			
	Cancer Incidence	4.4E-12			
	Genetic Effects	2.6E-13			
	Hazard Index				
Offsite Population 1698391	Dose (person-rem)	3.5E-4	4.5E-9		
	Cancer Fatalities	1.7E-7			
	Cancer Incidence	5.9E-7			
	Genetic Effects	3.5E-8			
Offsite MEI	Dose (rem)	5.2E-9	1.5E-13	2.4E-11	
	Cancer Fatalities	2.6E-12			
	Cancer Incidence	8.9E-12			
	Genetic Effects	5.2E-13			
	Hazard Index				
WM Workers 11	Dose (FTE-rem)	7.3E-2	1.2E-9	9.9E-8	2.0E-3 8.7E-1 1.3E-3 1.1
	Cancer Fatalities	2.9E-5			
	Cancer Incidence	1.0E-4			
	Genetic Effects	4.4E-6			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-141. Risks Associated With Managing RH-LLMW at Hanford Under Each Alternative (Except No Action)

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8674	Dose (person-rem)	3.5E-5			
	Cancer Fatalities	1.7E-8			
	Cancer Incidence	5.9E-8	9.1E-12		
	Genetic Effects	3.5E-9			
Noninvolved Worker MEI	Dose (rem)	6.0E-8			
	Cancer Fatalities	3.0E-11			
	Cancer Incidence	1.0E-10	1.8E-14		
	Genetic Effects	6.0E-12			
	Hazard Index			1.5E-11	
Offsite Population 377645	Dose (person-rem)	8.8E-4			
	Cancer Fatalities	4.4E-7			
	Cancer Incidence	1.5E-6	1.5E-11		
	Genetic Effects	8.8E-8			
Offsite MEI	Dose (rem)	1.8E-8			
	Cancer Fatalities	9.1E-12			
	Cancer Incidence	3.1E-11	0.00		
	Genetic Effects	1.8E-12			
	Hazard Index			4.4E-13	
WM Workers 1	Dose (FTE-rem)	1.7E-6			
	Cancer Fatalities	6.8E-10			
	Cancer Incidence	2.4E-9	2.3E-11		
	Genetic Effects	1.0E-10			
	Exposure Index			8.2E-8	
	Construction Fatalities				6.9E-5
	Construction Injuries				5.8E-2
	Operation Fatalities				9.8E-5
	Operation Injuries				4.3E-2

Table 6.1-142. Risks Associated With Managing RH-LLMW at INEL Under Each Alternative (Except No Action)

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 8451	Dose (person-rem)	3.1E-2			
	Cancer Fatalities	1.6E-5			
	Cancer Incidence	5.3E-5	2.0E-8		
	Genetic Effects	3.1E-6			
Noninvolved Worker MEI	Dose (rem)	2.7E-5			
	Cancer Fatalities	1.4E-8			
	Cancer Incidence	4.6E-8	1.6E-11		
	Genetic Effects	2.7E-9			
	Hazard Index			3.8E-8	
Offsite Population 153061	Dose (person-rem)	4.1E-1			
	Cancer Fatalities	2.1E-4			
	Cancer Incidence	7.0E-4	1.5E-8		
	Genetic Effects	4.1E-5			
Offsite MEI	Dose (rem)	5.1E-5			
	Cancer Fatalities	2.6E-8			
	Cancer Incidence	8.7E-8	2.0E-12		
	Genetic Effects	5.1E-9			
	Hazard Index			4.8E-9	
WM Workers 569	Dose (FTE-rem)	4.9			
	Cancer Fatalities	2.0E-3			
	Cancer Incidence	6.8E-3	6.6E-5		
	Genetic Effects	2.9E-4			
	Exposure Index			4.6E-4	
	Construction Fatalities				6.9E-2
	Construction Injuries				5.9E1
	Operation Fatalities				9.6E-2
	Operation Injuries				4.2E1

Table 6.1-143. Risks Associated With Managing RH-LLMW at ORNL Under Each Alternative (Except No Action)

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 3809	Dose (person-rem)	5.1E-2			
	Cancer Fatalities	2.5E-5			
	Cancer Incidence	8.6E-5	1.9E-8		
	Genetic Effects	5.1E-6			
Noninvolved Worker MEI	Dose (rem)	4.6E-5			
	Cancer Fatalities	2.3E-8	1.8E-11		
	Cancer Incidence	7.8E-8			
	Genetic Effects	4.6E-9		1.5E-8	
	Hazard Index				
Offsite Population 881652	Dose (person-rem)	2.2			
	Cancer Fatalities	1.1E-3			
	Cancer Incidence	3.7E-3	5.6E-8		
	Genetic Effects	2.2E-4			
Offsite MEI	Dose (rem)	6.8E-5			
	Cancer Fatalities	3.4E-8			
	Cancer Incidence	1.2E-7	2.9E-12		
	Genetic Effects	6.8E-9			
	Hazard Index			2.4E-9	
WM Workers 725	Dose (FTE-rem)	5.3E1			
	Cancer Fatalities	2.1E-2			
	Cancer Incidence	7.5E-2	7.7E-7		
	Genetic Effects	3.2E-3			
	Exposure Index			2.5E-6	
	Construction Fatalities				8.8E-2
	Construction Injuries				7.5E1
	Operation Fatalities				1.9E-1
	Operation Injuries				8.4E1

Table 6.1-144. Risks Associated With Managing RH-LLMW at SRS Under Each Alternative (Except No Action)

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Noninvolved Worker Population 15996	Dose (person-rem)	2.1E-3			
	Cancer Fatalities	1.1E-6			
	Cancer Incidence	3.6E-6	4.3E-10		
	Genetic Effects	2.1E-7			
Noninvolved Worker MEI	Dose (rem)	1.9E-6			
	Cancer Fatalities	9.2E-10			
	Cancer Incidence	3.1E-9	5.0E-13		
	Genetic Effects	1.9E-10			
	Hazard Index			9.0E-10	
Offsite Population 620618	Dose (person-rem)	5.9E-2			
	Cancer Fatalities	3.0E-5			
	Cancer Incidence	1.0E-4	8.7E-10		
	Genetic Effects	5.9E-6			
Offsite MEI	Dose (rem)	5.6E-7			
	Cancer Fatalities	2.8E-10			
	Cancer Incidence	9.6E-10	1.1E-14		
	Genetic Effects	5.6E-11			
	Hazard Index			2.0E-11	
WM Workers 17	Dose (FTE-rem)	3.4E-3			
	Cancer Fatalities	1.4E-6			
	Cancer Incidence	4.8E-6	1.8E-8		
	Genetic Effects	2.1E-7			
	Exposure Index			2.7E-6	
	Construction Fatalities				2.0E-3
	Construction Injuries				1.7
	Operation Fatalities				3.1E-3
	Operation Injuries				1.4

Table 6.1–145. Risks Associated With Disposing LLMW at ANL-E Under Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 64)	Dose (person-rem)	6.8E-1	(Lifetime 5) 9.7E-4	(Lifetime 62) 5.5E-1	
	Cancer Fatalities	3.4E-4			
	Cancer Incidence	1.2E-3			
	Genetic Effects	6.8E-5			
	Hazard Index				
All Lifetimes	Dose (person-rem)	3.0E1	1.3E-2	5.5E-1	
	Cancer Fatalities	1.5E-2			
	Cancer Incidence	5.1E-2			
	Genetic Effects	3.0E-3			
	Hazard Index				
WM Workers	Dose (FTE-rem)	3.1E1			
	Cancer Fatalities	1.2E-2			
	Cancer Incidence	4.3E-2			
	Genetic Effects	1.9E-3			
	Exposure Index				
	Construction Fatalities				1.7E-2
	Construction Injuries				7.6
	Operation Fatalities				2.2E-2
	Operation Injuries				1.9E1

Table 6.1-146. Risks Associated With Disposing LLMW at BNL Under Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 78)	Dose (person-rem)	8.5E-2	(Lifetime 2) 3.2E-5	(Lifetime 61) 1.6E-1	
	Cancer Fatalities	4.2E-5			
	Cancer Incidence	1.4E-4			
	Genetic Effects	8.5E-6			
	Hazard Index				
All Lifetimes	Dose (person-rem)	5.2	9.7E-5	1.6E-1	
	Cancer Fatalities	2.6E-3			
	Cancer Incidence	8.9E-3			
	Genetic Effects	5.2E-4			
	Hazard Index				
WM Workers	Dose (FTE-rem)	1.5E-1			
	Cancer Fatalities	6.1E-5			
	Cancer Incidence	2.1E-4			
	Genetic Effects	9.2E-6			
	Exposure Index				
	Construction Fatalities				3.8E-4
	Construction Injuries				1.7E-1
	Operation Fatalities				1.1E-3
	Operation Injuries				9.7E-1

Table 6.1–147. Risks Associated With Disposing LLMW at FEMP Under Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 53)	Dose (person-rem)	3.0E-1	(Lifetime 7) 5.6E-5	(Lifetime 25) 2.4E-1	
	Cancer Fatalities	1.5E-4			
	Cancer Incidence	5.1E-4			
	Genetic Effects	3.0E-5			
	Hazard Index				
All Lifetimes	Dose (person-rem)	5.0	1.4E-4	2.4E-1	
	Cancer Fatalities	2.5E-3			
	Cancer Incidence	8.5E-3			
	Genetic Effects	5.0E-4			
	Hazard Index				
WM Workers	Dose (FTE-rem)	7.2E-1			2.3E-3 9.8E-1 6.8E-3 5.8
	Cancer Fatalities	2.9E-4			
	Cancer Incidence	1.0E-3			
	Genetic Effects	4.3E-5			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-148. Risks Associated With Disposing LLMW at Hanford Under Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 18)	Dose (person-rem)	1.9			
	Cancer Fatalities	9.4E-4	(Lifetime 34)		
	Cancer Incidence	3.2E-3	4.7E-4		
	Genetic Effects	1.9E-4		(Lifetime 26)	
	Hazard Index			1.4	
All Lifetimes	Dose (person-rem)	3.6E1			
	Cancer Fatalities	1.8E-2			
	Cancer Incidence	6.1E-2	5.0E-3		
	Genetic Effects	3.6E-3			
	Hazard Index			1.4	
WM Workers	Dose (FTE-rem)	5.1E2			
	Cancer Fatalities	2.0E-1			
	Cancer Incidence	7.1E-1			
	Genetic Effects	3.0E-2			
	Exposure Index				
	Construction Fatalities				6.4E-3
	Construction Injuries				2.8
	Operation Fatalities				6.7E-2
	Operation Injuries				5.7E1

Table 6.1–149. Risks Associated With Disposing LLMW at INEL Under Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	(Lifetime 2) 3.0E-5	(Lifetime 2) 8.1E-2	
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00			
	Genetic Effects	0.00			
	Hazard Index				
All Lifetimes	Dose (person-rem)	0.00	4.1E-5	8.1E-2	
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00			
	Genetic Effects	0.00			
	Hazard Index				
WM Workers	Dose (FTE-rem)	3.5E2			4.1E-3 1.8 4.2E-2 3.6E1
	Cancer Fatalities	1.4E-1			
	Cancer Incidence	4.9E-1			
	Genetic Effects	2.1E-2			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-150. Risks Associated With Disposing LLMW at LANL Under Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00	(Lifetime 53)		
	Cancer Incidence	0.00	3.1E-4		
	Genetic Effects	0.00		(Lifetime 49)	
	Hazard Index			3.7E-2	
All Lifetimes	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	5.5E-3		
	Genetic Effects	0.00			
	Hazard Index			3.7E-2	
WM Workers	Dose (FTE-rem)	3.9			
	Cancer Fatalities	1.6E-3			
	Cancer Incidence	5.5E-3			
	Genetic Effects	2.4E-4			
	Exposure Index				
	Construction Fatalities				2.5E-3
	Construction Injuries				1.1
	Operation Fatalities				8.6E-3
	Operation Injuries				7.3

Table 6.1–151. Risks Associated With Disposing LLMW at LLNL Under Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 142)	Dose (person-rem)	2.6E-3	(Lifetime 29) 3.3E-6	(Lifetime 22) 5.5E-4	
	Cancer Fatalities	1.3E-6			
	Cancer Incidence	4.4E-6			
	Genetic Effects	2.6E-7			
	Hazard Index				
All Lifetimes	Dose (person-rem)	4.0E-2	1.9E-4	5.5E-4	
	Cancer Fatalities	2.0E-5			
	Cancer Incidence	6.8E-5			
	Genetic Effects	4.0E-6			
	Hazard Index				
WM Workers	Dose (FTE-rem)	1.0E2			5.0E-3 2.2 1.8E-2 1.5E1
	Cancer Fatalities	4.1E-2			
	Cancer Incidence	1.4E-1			
	Genetic Effects	6.1E-3			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-152. Risks Associated With Disposing LLMW at NTS Under Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00	(Lifetime 41)		
	Cancer Incidence	0.00	2.2E-4		
	Genetic Effects	0.00		(Lifetime 37)	
	Hazard Index			2.4E-2	
All Lifetimes	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	3.5E-3		
	Genetic Effects	0.00			
	Hazard Index			2.4E-2	
WM Workers	Dose (FTE-rem)	1.3			
	Cancer Fatalities	5.3E-4			
	Cancer Incidence	1.9E-3			
	Genetic Effects	7.9E-5			
	Exposure Index				
	Construction Fatalities				1.0E-3
	Construction Injuries				4.4E-1
	Operation Fatalities				1.1E-2
	Operation Injuries				8.9

Table 6.1-153. Risks Associated With Disposing LLMW at ORNL Under Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 22)	Dose (person-rem)	7.6E-3			
	Cancer Fatalities	3.8E-6	(Lifetime 61)		
	Cancer Incidence	1.3E-5	6.4E-3		
	Genetic Effects	7.6E-7		(Lifetime 22)	
	Hazard Index			7.8E-1	
All Lifetimes	Dose (person-rem)	1.2E-1			
	Cancer Fatalities	5.9E-5			
	Cancer Incidence	2.0E-4	4.5E-1		
	Genetic Effects	1.2E-5			
	Hazard Index			7.8E-1	
WM Workers	Dose (FTE-rem)	2.0E2			
	Cancer Fatalities	7.9E-2			
	Cancer Incidence	2.8E-1			
	Genetic Effects	1.2E-2			
	Exposure Index				
	Construction Fatalities				0.00
	Construction Injuries				0.00
	Operation Fatalities				4.8E-2
	Operation Injuries				4.1E1

Table 6.1-154. Risks Associated With Disposing LLMW at Pantex Under Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 96)	Dose (person-rem)	5.4E-3	(Lifetime 10) 4.8E-6	(Lifetime 129) 4.0E-3	
	Cancer Fatalities	2.7E-6			
	Cancer Incidence	9.1E-6			
	Genetic Effects	5.4E-7			
	Hazard Index				
All Lifetimes	Dose (person-rem)	1.7E-1	6.6E-5	4.0E-3	
	Cancer Fatalities	8.6E-5			
	Cancer Incidence	2.9E-4			
	Genetic Effects	1.7E-5			
	Hazard Index				
WM Workers	Dose (FTE-rem)	7.6E-1			1.1E-3 4.6E-1 3.7E-3 3.2
	Cancer Fatalities	3.0E-4			
	Cancer Incidence	1.1E-3			
	Genetic Effects	4.6E-5			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-155. Risks Associated With Disposing LLMW at PGDP Under Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 146)	Dose (person-rem)	1.6E-2	(Lifetime 2) 1.1E-6	(Lifetime 89) 5.5E-3	
	Cancer Fatalities	7.8E-6			
	Cancer Incidence	2.7E-5			
	Genetic Effects	1.6E-6			
	Hazard Index				
All Lifetimes	Dose (person-rem)	1.3E-1	1.8E-5	5.5E-3	
	Cancer Fatalities	6.6E-5			
	Cancer Incidence	2.3E-4			
	Genetic Effects	1.3E-5			
	Hazard Index				
WM Workers	Dose (FTE-rem)	3.5E-1			7.3E-4 3.2E-1 2.2E-3 1.9
	Cancer Fatalities	1.4E-4			
	Cancer Incidence	4.8E-4			
	Genetic Effects	2.1E-5			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-156. Risks Associated With Disposing LLMW at Ports Under Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 145)	Dose (person-rem)	6.1E-2			
	Cancer Fatalities	3.1E-5	(Lifetime 4)		
	Cancer Incidence	1.0E-4	4.4E-4		
	Genetic Effects	6.1E-6		(Lifetime 128)	
	Hazard Index			1.4	
All Lifetimes	Dose (person-rem)	2.2			
	Cancer Fatalities	1.1E-3			
	Cancer Incidence	3.7E-3	5.2E-3		
	Genetic Effects	2.2E-4			
	Hazard Index			1.4	
WM Workers	Dose (FTE-rem)	9.0E1			
	Cancer Fatalities	3.6E-2			
	Cancer Incidence	1.3E-1			
	Genetic Effects	5.4E-3			
	Exposure Index				
	Construction Fatalities				7.4E-3
	Construction Injuries				3.2
	Operation Fatalities				2.2E-2
	Operation Injuries				1.9E1

Table 6.1–157. Risks Associated With Disposing LLMW at RFETS Under Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 38)	Dose (person-rem)	3.1E-3	(Lifetime 26) 1.1E-3	(Lifetime 26) 3.0	
	Cancer Fatalities	1.6E-6			
	Cancer Incidence	5.3E-6			
	Genetic Effects	3.1E-7			
	Hazard Index				
All Lifetimes	Dose (person-rem)	6.1E-2	2.5E-2	3.0	
	Cancer Fatalities	3.1E-5			
	Cancer Incidence	1.0E-4			
	Genetic Effects	6.1E-6			
	Hazard Index				
WM Workers	Dose (FTE-rem)	5.8			1.8E-2 8.0 5.0E-2 4.3E1
	Cancer Fatalities	2.3E-3			
	Cancer Incidence	8.2E-3			
	Genetic Effects	3.5E-4			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1–158. Risks Associated With Disposing LLMW at SNL–NM Under Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 92)	Dose (person-rem)	3.6E-1	(Lifetime 4) 3.6E-6	(Lifetime 10) 2.3E-2	
	Cancer Fatalities	1.8E-4			
	Cancer Incidence	6.1E-4			
	Genetic Effects	3.6E-5			
	Hazard Index				
All Lifetimes	Dose (person-rem)	1.9E1	2.0E-5	2.3E-2	
	Cancer Fatalities	9.3E-3			
	Cancer Incidence	3.2E-2			
	Genetic Effects	1.9E-3			
	Hazard Index				
WM Workers	Dose (FTE-rem)	8.6E-2			
	Cancer Fatalities	3.4E-5			
	Cancer Incidence	1.2E-4			
	Genetic Effects	5.2E-6			
	Exposure Index				
	Construction Fatalities				1.6E-4
	Construction Injuries				7.2E-2
	Operation Fatalities				5.8E-4
	Operation Injuries				4.9E-1

Table 6.1-159. Risks Associated With Disposing LLMW at SRS Under Decentralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 153)	Dose (person-rem)	1.9E-1	(Lifetime 5) 9.9E-4	(Lifetime 5) 2.7	
	Cancer Fatalities	9.7E-5			
	Cancer Incidence	3.3E-4			
	Genetic Effects	1.9E-5			
	Hazard Index				
All Lifetimes	Dose (person-rem)	2.6	2.8E-3	2.7	
	Cancer Fatalities	1.3E-3			
	Cancer Incidence	4.5E-3			
	Genetic Effects	2.6E-4			
	Hazard Index				
WM Workers	Dose (FTE-rem)	9.7E1			
	Cancer Fatalities	3.9E-2			
	Cancer Incidence	1.4E-1			
	Genetic Effects	5.8E-3			
	Exposure Index				
	Construction Fatalities				6.7E-2
	Construction Injuries				2.9E1
	Operation Fatalities				3.5E-2
	Operation Injuries				3.0E1

Table 6.1-160. Risks Associated With Disposing LLMW at FEMP Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 53)	Dose (person-rem)	3.0E-1	(Lifetime 7) 5.6E-5	(Lifetime 25) 2.4E-1	
	Cancer Fatalities	1.5E-4			
	Cancer Incidence	5.1E-4			
	Genetic Effects	3.0E-5			
	Hazard Index				
All Lifetimes	Dose (person-rem)	5.0	1.4E-4	2.4E-1	
	Cancer Fatalities	2.5E-3			
	Cancer Incidence	8.5E-3			
	Genetic Effects	5.0E-4			
	Hazard Index				
WM Workers	Dose (FTE-rem)	7.2E-1			
	Cancer Fatalities	2.9E-4			
	Cancer Incidence	1.0E-3			
	Genetic Effects	4.3E-5			
	Exposure Index				
	Construction Fatalities				2.3E-3
	Construction Injuries				9.8E-1
	Operation Fatalities				6.8E-3
	Operation Injuries				5.8

Table 6.1-161. Risks Associated With Disposing LLMW at Hanford Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 18)	Dose (person-rem)	1.7			
	Cancer Fatalities	8.6E-4	(Lifetime 34)		
	Cancer Incidence	2.9E-3	4.2E-4		
	Genetic Effects	1.7E-4		(Lifetime 26)	
	Hazard Index			1.4	
All Lifetimes	Dose (person-rem)	3.3E1			
	Cancer Fatalities	1.7E-2			
	Cancer Incidence	5.6E-2	4.5E-3		
	Genetic Effects	3.3E-3			
	Hazard Index			1.4	
WM Workers	Dose (FTE-rem)	5.0E2			
	Cancer Fatalities	2.0E-1			
	Cancer Incidence	7.0E-1			
	Genetic Effects	3.0E-2			
	Exposure Index				
	Construction Fatalities				6.4E-3
	Construction Injuries				2.8
	Operation Fatalities				6.7E-2
	Operation Injuries				5.7E1

Table 6.1-162. Risks Associated With Disposing LLMW at INEL Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	(Lifetime 2) 3.0E-5	(Lifetime 2) 8.1E-2	
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00			
	Genetic Effects	0.00			
	Hazard Index				
All Lifetimes	Dose (person-rem)	0.00	4.1E-5	8.1E-2	
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00			
	Genetic Effects	0.00			
	Hazard Index				
WM Workers	Dose (FTE-rem)	3.5E2			4.1E-3 1.8 4.2E-2 3.6E1
	Cancer Fatalities	1.4E-1			
	Cancer Incidence	4.9E-1			
	Genetic Effects	2.1E-2			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-163. Risks Associated With Disposing LLMW at LANL Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00	(Lifetime 53)		
	Cancer Incidence	0.00	3.1E-4		
	Genetic Effects	0.00		(Lifetime 49)	
	Hazard Index			3.7E-2	
All Lifetimes	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	5.5E-3		
	Genetic Effects	0.00			
	Hazard Index			3.7E-2	
WM Workers	Dose (FTE-rem)	4.8			
	Cancer Fatalities	1.9E-3			
	Cancer Incidence	6.7E-3			
	Genetic Effects	2.9E-4			
	Exposure Index				
	Construction Fatalities				2.5E-3
	Construction Injuries				1.1
	Operation Fatalities				8.7E-3
	Operation Injuries				7.4

Table 6.1-164. Risks Associated With Disposing LLMW at LLNL Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 142)	Dose (person-rem)	2.6E-3	(Lifetime 29) 3.3E-6	(Lifetime 22) 5.5E-4	
	Cancer Fatalities	1.3E-6			
	Cancer Incidence	4.4E-6			
	Genetic Effects	2.6E-7			
	Hazard Index				
All Lifetimes	Dose (person-rem)	4.0E-2	1.9E-4	5.5E-4	
	Cancer Fatalities	2.0E-5			
	Cancer Incidence	6.8E-5			
	Genetic Effects	4.0E-6			
	Hazard Index				
WM Workers	Dose (FTE-rem)	1.0E2			5.0E-3 2.2 1.8E-2 1.5E1
	Cancer Fatalities	4.0E-2			
	Cancer Incidence	1.4E-1			
	Genetic Effects	6.1E-3			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-165. Risks Associated With Disposing LLMW at NTS Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00	(Lifetime 41)		
	Cancer Incidence	0.00	2.2E-4		
	Genetic Effects	0.00		(Lifetime 37)	
	Hazard Index			2.4E-2	
All Lifetimes	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	3.5E-3		
	Genetic Effects	0.00			
	Hazard Index			2.4E-2	
WM Workers	Dose (FTE-rem)	1.3			
	Cancer Fatalities	5.3E-4			
	Cancer Incidence	1.9E-3			
	Genetic Effects	7.9E-5			
	Exposure Index				
	Construction Fatalities				3.0E-3
	Construction Injuries				1.3
	Operation Fatalities				1.1E-2
	Operation Injuries				8.9

Table 6.1-166. Risks Associated With Disposing LLMW at ORNL Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 22)	Dose (person-rem)	6.1E-3	(Lifetime 61) 6.4E-3	(Lifetime 22) 7.7E-1	
	Cancer Fatalities	3.0E-6			
	Cancer Incidence	1.0E-5			
	Genetic Effects	6.1E-7			
	Hazard Index				
All Lifetimes	Dose (person-rem)	9.5E-2	4.5E-1	7.7E-1	
	Cancer Fatalities	4.7E-5			
	Cancer Incidence	1.6E-4			
	Genetic Effects	9.5E-6			
	Hazard Index				
WM Workers	Dose (FTE-rem)	1.8E2			
	Cancer Fatalities	7.1E-2			
	Cancer Incidence	2.5E-1			
	Genetic Effects	1.1E-2			
	Exposure Index				
	Construction Fatalities				0.00
	Construction Injuries				0.00
	Operation Fatalities				4.8E-2
	Operation Injuries				4.1E1

Table 6.1-167. Risks Associated With Disposing LLMW at Pantex Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 96)	Dose (person-rem)	5.4E-3	(Lifetime 10) 4.8E-6	(Lifetime 129) 4.0E-3	
	Cancer Fatalities	2.7E-6			
	Cancer Incidence	9.1E-6			
	Genetic Effects	5.4E-7			
	Hazard Index				
All Lifetimes	Dose (person-rem)	1.7E-1	6.6E-5	4.0E-3	
	Cancer Fatalities	8.6E-5			
	Cancer Incidence	2.9E-4			
	Genetic Effects	1.7E-5			
	Hazard Index				
WM Workers	Dose (FTE-rem)	7.6E-1			1.1E-3 4.6E-1 3.7E-3 3.2
	Cancer Fatalities	3.0E-4			
	Cancer Incidence	1.1E-3			
	Genetic Effects	4.6E-5			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-168. Risks Associated With Disposing LLMW at PGDP Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 146)	Dose (person-rem)	1.6E-2	(Lifetime 2) 1.1E-6	(Lifetime 89) 5.5E-3	
	Cancer Fatalities	7.8E-6			
	Cancer Incidence	2.7E-5			
	Genetic Effects	1.6E-6			
	Hazard Index				
All Lifetimes	Dose (person-rem)	1.3E-1	1.8E-5	5.5E-3	
	Cancer Fatalities	6.6E-5			
	Cancer Incidence	2.3E-4			
	Genetic Effects	1.3E-5			
	Hazard Index				
WM Workers	Dose (FTE-rem)	3.5E-1			7.3E-4 3.2E-1 2.2E-3 1.9
	Cancer Fatalities	1.4E-4			
	Cancer Incidence	4.8E-4			
	Genetic Effects	2.1E-5			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-169. Risks Associated With Disposing LLMW at Ports Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family ¹ (Lifetime 145)	Dose (person-rem)	1.7E-1			
	Cancer Fatalities	8.5E-5	(Lifetime 4)		
	Cancer Incidence	2.9E-4	5.6E-4		
	Genetic Effects	1.7E-5		(Lifetime 126)	
	Hazard Index			2.1	
All Lifetimes	Dose (person-rem)	6.1			
	Cancer Fatalities	3.1E-3			
	Cancer Incidence	1.0E-2	6.4E-3		
	Genetic Effects	6.1E-4			
	Hazard Index			2.1	
WM Workers	Dose (FTE-rem)	1.5E2			
	Cancer Fatalities	5.8E-2			
	Cancer Incidence	2.0E-1			
	Genetic Effects	8.7E-3			
	Exposure Index				
	Construction Fatalities				1.2E-2
	Construction Injuries				5.4
	Operation Fatalities				3.5E-2
	Operation Injuries				3.0E1

Table 6.1-170. Risks Associated With Disposing LLMW at RFETS Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 38)	Dose (person-rem)	3.1E-3	(Lifetime 26) 1.1E-3	(Lifetime 26) 3.0	
	Cancer Fatalities	1.6E-6			
	Cancer Incidence	5.3E-6			
	Genetic Effects	3.1E-7			
	Hazard Index				
All Lifetimes	Dose (person-rem)	6.1E-2	2.5E-2	3.0	
	Cancer Fatalities	3.1E-5			
	Cancer Incidence	1.0E-4			
	Genetic Effects	6.1E-6			
	Hazard Index				
WM Workers	Dose (FTE-rem)	5.8			1.8E-2 8.0 5.0E-2 4.3E1
	Cancer Fatalities	2.3E-3			
	Cancer Incidence	8.2E-3			
	Genetic Effects	3.5E-4			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-171. Risks Associated With Disposing LLMW at SRS Under Regionalized Alternative 1

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 153)	Dose (person-rem)	1.9E-1	(Lifetime 5) 9.9E-4	(Lifetime 5) 2.7	
	Cancer Fatalities	9.7E-5			
	Cancer Incidence	3.3E-4			
	Genetic Effects	1.9E-5			
	Hazard Index				
All Lifetimes	Dose (person-rem)	2.6	2.8E-3	2.7	
	Cancer Fatalities	1.3E-3			
	Cancer Incidence	4.4E-3			
	Genetic Effects	2.6E-4			
	Hazard Index				
WM Workers	Dose (FTE-rem)	9.7E1			6.7E-2 2.9E1 3.5E-2 3.0E1
	Cancer Fatalities	3.9E-2			
	Cancer Incidence	1.4E-1			
	Genetic Effects	5.8E-3			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-172. Risks Associated With Disposing LLMW at Hanford Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 18)	Dose (person-rem)	2.6			
	Cancer Fatalities	1.3E-3	(Lifetime 34)		
	Cancer Incidence	4.5E-3	4.3E-4		
	Genetic Effects	2.6E-4		(Lifetime 26)	
	Hazard Index			1.6	
All Lifetimes	Dose (person-rem)	4.4E1			
	Cancer Fatalities	2.2E-2			
	Cancer Incidence	7.5E-2	4.7E-3		
	Genetic Effects	4.4E-3			
	Hazard Index			1.6	
WM Workers	Dose (FTE-rem)	5.3E2			
	Cancer Fatalities	2.1E-1			
	Cancer Incidence	7.4E-1			
	Genetic Effects	3.2E-2			
	Exposure Index				
	Construction Fatalities				6.7E-3
	Construction Injuries				2.9
	Operation Fatalities				6.9E-2
	Operation Injuries				5.9E1

Table 6.1-173. Risks Associated With Disposing LLMW at INEL Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	(Lifetime 2) 3.0E-5	(Lifetime 2) 8.4E-2	
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00			
	Genetic Effects	0.00			
	Hazard Index				
All Lifetimes	Dose (person-rem)	0.00	4.2E-5	8.4E-2	
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00			
	Genetic Effects	0.00			
	Hazard Index				
WM Workers	Dose (FTE-rem)	4.1E2			4.8E-3
	Cancer Fatalities	1.7E-1			
	Cancer Incidence	5.8E-1			
	Genetic Effects	2.5E-2			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-174. Risks Associated With Disposing LLMW at LANL Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00	(Lifetime 53)		
	Cancer Incidence	0.00	1.7E-4		
	Genetic Effects	0.00		(Lifetime 49)	
	Hazard Index			1.8E-2	
All Lifetimes	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	3.2E-3		
	Genetic Effects	0.00			
	Hazard Index			1.8E-2	
WM Workers	Dose (FTE-rem)	2.9E1			
	Cancer Fatalities	1.2E-2			
	Cancer Incidence	4.0E-2			
	Genetic Effects	1.7E-3			
	Exposure Index				
	Construction Fatalities				2.9E-2
	Construction Injuries				1.3E1
	Operation Fatalities				9.7E-2
	Operation Injuries				8.3E1

Table 6.1-175. Risks Associated With Disposing LLMW at NTS Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	(Lifetime 41) 1.4E-9	(Lifetime 37) 6.4E-8	
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00			
	Genetic Effects	0.00			
	Hazard Index				
All Lifetimes	Dose (person-rem)	0.00	2.1E-8	6.4E-8	
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00			
	Genetic Effects	0.00			
	Hazard Index				
WM Workers	Dose (FTE-rem)	1.8E-2			
	Cancer Fatalities	7.2E-6			
	Cancer Incidence	2.5E-5			
	Genetic Effects	1.1E-6			
	Exposure Index				
	Construction Fatalities				8.5E-5
	Construction Injuries				3.7E-2
	Operation Fatalities				3.0E-4
	Operation Injuries				2.5E-1

Table 6.1-176. Risks Associated With Disposing LLMW at ORNL Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 22)	Dose (person-rem)	7.1E-3	(Lifetime 61) 1.2E-2	(Lifetime 22) 1.1	
	Cancer Fatalities	3.6E-6			
	Cancer Incidence	1.2E-5			
	Genetic Effects	7.1E-7			
	Hazard Index				
All Lifetimes	Dose (person-rem)	1.2E-1	8.1E-1	1.1	
	Cancer Fatalities	5.8E-5			
	Cancer Incidence	2.0E-4			
	Genetic Effects	1.2E-5			
	Hazard Index				
WM Workers	Dose (FTE-rem)	2.3E2			
	Cancer Fatalities	9.3E-2			
	Cancer Incidence	3.3E-1			
	Genetic Effects	1.4E-2			
	Exposure Index				
	Construction Fatalities				0.00
	Construction Injuries				0.00
	Operation Fatalities				5.6E-2
	Operation Injuries				4.8E1

Table 6.1-177. Risks Associated With Disposing LLMW at SRS Under Regionalized Alternative 2

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 153)	Dose (person-rem)	1.9E-1	(Lifetime 5) 9.9E-4	(Lifetime 5) 2.7	
	Cancer Fatalities	9.7E-5			
	Cancer Incidence	3.3E-4			
	Genetic Effects	1.9E-5			
	Hazard Index				
All Lifetimes	Dose (person-rem)	2.6	2.8E-3	2.7	
	Cancer Fatalities	1.3E-3			
	Cancer Incidence	4.4E-3			
	Genetic Effects	2.6E-4			
	Hazard Index				
WM Workers	Dose (FTE-rem)	9.7E1			6.7E-2 2.9E1 3.5E-2 3.0E1
	Cancer Fatalities	3.9E-2			
	Cancer Incidence	1.4E-1			
	Genetic Effects	5.8E-3			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-178. Risks Associated With Disposing LLMW at NTS Under Regionalized Alternative 3

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00	(Lifetime 41)		
	Cancer Incidence	0.00	2.8E-3		
	Genetic Effects	0.00		(Lifetime 36)	
	Hazard Index			3.1E-1	
All Lifetimes	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	5.4E-2		
	Genetic Effects	0.00			
	Hazard Index			3.1E-1	
WM Workers	Dose (FTE-rem)	9.2E2			
	Cancer Fatalities	3.7E-1			
	Cancer Incidence	1.3			
	Genetic Effects	5.5E-2			
	Exposure Index				
	Construction Fatalities				5.2E-2
	Construction Injuries				2.3E1
	Operation Fatalities				1.3E-1
	Operation Injuries				1.1E2

Table 6.1-179. Risks Associated With Disposing LLMW at Hanford Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 18)	Dose (person-rem)	2.8	(Lifetime 34) 4.7E-4	(Lifetime 26) 1.6	
	Cancer Fatalities	1.4E-3			
	Cancer Incidence	4.7E-3			
	Genetic Effects	2.8E-4			
	Hazard Index				
All Lifetimes	Dose (person-rem)	4.7E1	5.1E-3	1.6	
	Cancer Fatalities	2.4E-2			
	Cancer Incidence	8.0E-2			
	Genetic Effects	4.7E-3			
	Hazard Index				
WM Workers	Dose (FTE-rem)	5.3E2			6.7E-3 2.9 6.9E-2 5.9E1
	Cancer Fatalities	2.1E-1			
	Cancer Incidence	7.4E-1			
	Genetic Effects	3.2E-2			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-180. Risks Associated With Disposing LLMW at INEL Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00	(Lifetime 2)		
	Cancer Incidence	0.00	1.7E-5		
	Genetic Effects	0.00		(Lifetime 2)	
	Hazard Index			4.5E-2	
All Lifetimes	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	2.2E-5		
	Genetic Effects	0.00			
	Hazard Index			4.5E-2	
WM Workers	Dose (FTE-rem)	7.2E2			
	Cancer Fatalities	2.9E-1			
	Cancer Incidence	1.0			
	Genetic Effects	4.3E-2			
	Exposure Index				
	Construction Fatalities				9.9E-3
	Construction Injuries				4.3
	Operation Fatalities				9.6E-2
	Operation Injuries				8.1E1

Table 6.1-181. Risks Associated With Disposing LLMW at LANL Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00	(Lifetime 53)		
	Cancer Incidence	0.00	4.7E-7		
	Genetic Effects	0.00		(Lifetime 49)	
	Hazard Index			2.2E-5	
All Lifetimes	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	8.4E-6		
	Genetic Effects	0.00			
	Hazard Index			2.2E-5	
WM Workers	Dose (FTE-rem)	3.9			
	Cancer Fatalities	1.6E-3			
	Cancer Incidence	5.5E-3			
	Genetic Effects	2.4E-4			
	Exposure Index				
	Construction Fatalities				1.6E-2
	Construction Injuries				7.2
	Operation Fatalities				5.8E-2
	Operation Injuries				4.9E1

Table 6.1-182. Risks Associated With Disposing LLMW at ORNL Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 22)	Dose (person-rem)	8.7E-3	(Lifetime 61) 1.2E-2	(Lifetime 22) 1.1	
	Cancer Fatalities	4.3E-6			
	Cancer Incidence	1.5E-5			
	Genetic Effects	8.7E-7			
	Hazard Index				
All Lifetimes	Dose (person-rem)	1.4E-1	8.2E-1	1.1	
	Cancer Fatalities	7.0E-5			
	Cancer Incidence	2.4E-4			
	Genetic Effects	1.4E-5			
	Hazard Index				
WM Workers	Dose (FTE-rem)	2.4E2			
	Cancer Fatalities	9.4E-2			
	Cancer Incidence	3.3E-1			
	Genetic Effects	1.4E-2			
	Exposure Index				
	Construction Fatalities				0.00
	Construction Injuries				0.00
	Operation Fatalities				5.5E-2
	Operation Injuries				4.7E1

Table 6.1-183. Risks Associated With Disposing LLMW at NTS Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00	(Lifetime 41)		
	Cancer Incidence	0.00	1.4E-9		
	Genetic Effects	0.00		(Lifetime 37)	
	Hazard Index			6.4E-8	
All Lifetimes	Dose (person-rem)	0.00			
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00	2.1E-8		
	Genetic Effects	0.00			
	Hazard Index			6.4E-8	
WM Workers	Dose (FTE-rem)	1.8E-2			
	Cancer Fatalities	7.2E-6			
	Cancer Incidence	2.5E-5			
	Genetic Effects	1.1E-6			
	Exposure Index				
	Construction Fatalities				2.9E-5
	Construction Injuries				1.3E-2
	Operation Fatalities				3.0E-4
	Operation Injuries				2.5E-1

Table 6.1-184. Risks Associated With Disposing LLMW at SRS Under Regionalized Alternative 4

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 153)	Dose (person-rem)	1.9E-1	(Lifetime 5) 9.9E-4	(Lifetime 5) 2.7	
	Cancer Fatalities	9.7E-5			
	Cancer Incidence	3.3E-4			
	Genetic Effects	1.9E-5			
	Hazard Index				
All Lifetimes	Dose (person-rem)	2.6	2.8E-3	2.7	
	Cancer Fatalities	1.3E-3			
	Cancer Incidence	4.5E-3			
	Genetic Effects	2.6E-4			
	Hazard Index				
WM Workers	Dose (FTE-rem)	9.7E1			6.7E-2 2.9E1 3.5E-2 3.0E1
	Cancer Fatalities	3.9E-2			
	Cancer Incidence	1.4E-1			
	Genetic Effects	5.8E-3			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-185. Risks Associated With Disposing LLMW at Hanford Under Centralized Alternative

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 18)	Dose (person-rem)	3.9E1	(Lifetime 6) 9.5E-4	(Lifetime 26) 2.4	
	Cancer Fatalities	1.9E-2			
	Cancer Incidence	6.6E-2			
	Genetic Effects	3.9E-3			
	Hazard Index				
All Lifetimes	Dose (person-rem)	5.0E2	8.5E-3	2.4	
	Cancer Fatalities	2.5E-1			
	Cancer Incidence	8.6E-1			
	Genetic Effects	5.0E-2			
	Hazard Index				
WM Workers	Dose (FTE-rem)	9.1E2			
	Cancer Fatalities	3.6E-1			
	Cancer Incidence	1.3			
	Genetic Effects	5.4E-2			
	Exposure Index				
	Construction Fatalities				1.9E-2
	Construction Injuries				8.1
	Operation Fatalities				1.3E-1
	Operation Injuries				1.1E2

Table 6.1-186. Risks Associated With Disposing Remote Handled LLMW at Hanford

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 18)	Dose (person-rem)	4.8E-4			
	Cancer Fatalities	2.4E-7	(Lifetime 34)		
	Cancer Incidence	8.2E-7	2.6E-8		
	Genetic Effects	4.8E-8		(Lifetime 34)	
	Hazard Index			7.2E-5	
All Lifetimes	Dose (person-rem)	1.0E-2			
	Cancer Fatalities	5.0E-6			
	Cancer Incidence	1.7E-5	2.6E-7		
	Genetic Effects	1.0E-6			
	Hazard Index			7.2E-5	
WM Workers	Dose (FTE-rem)	2.3E-8			
	Cancer Fatalities	9.2E-12			
	Cancer Incidence	3.2E-11			
	Genetic Effects	1.4E-12			
	Exposure Index				
	Construction Fatalities				5.5E-6
	Construction Injuries				2.4E-3
	Operation Fatalities				1.9E-5
	Operation Injuries				1.6E-2

Table 6.1–187. Risks Associated With Disposing Remote Handled LLMW at INEL

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 0)	Dose (person-rem)	0.00	(Lifetime 2) 7.6E-7	(Lifetime 2) 2.1E-3	
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00			
	Genetic Effects	0.00			
	Hazard Index				
All Lifetimes	Dose (person-rem)	0.00	1.2E-6	2.1E-3	
	Cancer Fatalities	0.00			
	Cancer Incidence	0.00			
	Genetic Effects	0.00			
	Hazard Index				
WM Workers	Dose (FTE-rem)	2.5			4.4E-3 1.9 1.5E-2 1.3E1
	Cancer Fatalities	9.9E-4			
	Cancer Incidence	3.5E-3			
	Genetic Effects	1.5E-4			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-188. Risks Associated With Disposing Remote Handled LLMW at ORNL

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 22)	Dose (person-rem)	1.7E-1	(Lifetime 61) 8.1E-6	(Lifetime 22) 7.5E-4	
	Cancer Fatalities	8.3E-5			
	Cancer Incidence	2.8E-4			
	Genetic Effects	1.7E-5			
	Hazard Index				
All Lifetimes	Dose (person-rem)	2.6	5.7E-4	7.5E-4	
	Cancer Fatalities	1.3E-3			
	Cancer Incidence	4.4E-3			
	Genetic Effects	2.6E-4			
	Hazard Index				
WM Workers	Dose (FTE-rem)	1.3			4.3E-3 1.9 5.0E-3 4.2
	Cancer Fatalities	5.0E-4			
	Cancer Incidence	1.8E-3			
	Genetic Effects	7.5E-5			
	Exposure Index				
	Construction Fatalities				
	Construction Injuries				
	Operation Fatalities				
	Operation Injuries				

Table 6.1-189. Risks Associated With Disposing Remote Handled LLMW at SRS

Receptor	Endpoint	Radionuclides	Hazardous Chemicals		Physical Hazards
			Carcinogens	Noncarcinogens	
Most-Exposed Farm Family (Lifetime 153)	Dose (person-rem)	4.1E-3			
	Cancer Fatalities	2.1E-6	(Lifetime 5)		
	Cancer Incidence	7.0E-6	4.7E-6		
	Genetic Effects	4.1E-7		(Lifetime 5)	
	Hazard Index			1.3E-2	
All Lifetimes	Dose (person-rem)	5.8E-2			
	Cancer Fatalities	2.9E-5			
	Cancer Incidence	9.8E-5	1.3E-5		
	Genetic Effects	5.8E-6			
	Hazard Index			1.3E-2	
WM Workers	Dose (FTE-rem)	1.6E-3			
	Cancer Fatalities	6.4E-7			
	Cancer Incidence	2.2E-6			
	Genetic Effects	9.5E-8			
	Exposure Index				
	Construction Fatalities				8.2E-4
	Construction Injuries				3.6E-1
	Operation Fatalities				3.9E-4
	Operation Injuries				3.3E-1