

## TABLE OF CONTENTS

TABLE OF CONTENTS .....	i
LIST OF FIGURES.....	viii
LIST OF TABLES .....	ix
ACRONYMS AND ABBREVIATIONS.....	xiii
UNITS CONVERSION GUIDE .....	xvii
SUMMARY .....	S-1
1. INTRODUCTION AND BACKGROUND .....	1-1
1.1 Introduction .....	1-1
1.2 Radioactive Waste at the Idaho National Engineering and Environmental Laboratory.....	1-1
1.2.1 Waste Types.....	1-1
1.2.2 Volumes Analyzed.....	1-1
1.2.3 Condition of Waste at Idaho National Engineering and Environmental Laboratory .....	1-2
1.2.4 Additional Quantities of Waste .....	1-2
1.3 Background .....	1-3
1.4 The Proposed Advanced Mixed Waste Treatment Project.....	1-6
1.5 Relationship of this Environmental Impact Statement to other Department of Energy <i>National Environmental Policy Act Documents</i> .....	1-8
1.6 Public Scoping .....	1-9
1.6.1 Public Scoping Process.....	1-9
1.6.2 Results of Public Scoping .....	1-10
1.7 Content of the Environmental Impact Statement.....	1-11
2. PURPOSE AND NEED FOR AGENCY ACTION .....	2-1
3. ADVANCED MIXED WASTE TREATMENT PROJECT FACILITY DESCRIPTION AND ALTERNATIVES.....	3-1
3.1 Advanced Mixed Waste Treatment Project Facility .....	3-1
3.1.1 The Advanced Mixed Waste Treatment Project Facility Description .....	3-1
3.1.2 Advanced Mixed Waste Treatment Project Process Description.....	3-5
3.2 No Action Alternative .....	3-8
3.3 Proposed Action.....	3-9
3.4 Non-Thermal Treatment Alternative .....	3-10
3.5 Treatment and Storage Alternative.....	3-10
3.6 Alternatives Considered But Not Analyzed .....	3-11
3.6.1 Advanced Mixed Waste Treatment Project Technology Selection Process .....	3-14
3.7 Preferred Alternative .....	3-19
3.8 Comparison of Impacts .....	3-19
4. AFFECTED ENVIRONMENT .....	4.1-1
4.1 Introduction .....	4.1-1
4.2 Land Use .....	4.2-1
4.2.1 Existing and Planned Land Use at the Advanced Mixed Waste Treatment Project Site.....	4.2-1

---

4.2.2	Existing and Planned Land Use at Idaho National Engineering and Environmental Laboratory and in Surrounding Areas .....	4.2-1
4.3	Socioeconomics.....	4.3-1
4.3.1	Employment and Income.....	4.3-1
4.3.2	Population and Housing.....	4.3-2
4.3.3	Community Services.....	4.3-3
4.4	Cultural Resources.....	4.4-1
4.4.1	Archaeological Sites and Historic Structures .....	4.4-1
4.4.2	Native American Cultural Resources.....	4.4-2
4.4.3	Paleontological Resources.....	4.4-3
4.5	Aesthetic and Scenic Resources .....	4.5-1
4.5.1	Visual Character of the Advanced Mixed Waste Treatment Project Site.....	4.5-1
4.5.2	Scenic Areas.....	4.5-1
4.6	Geology .....	4.6-1
4.6.1	General Geology.....	4.6-1
4.6.2	Mineral Resources.....	4.6-4
4.6.3	Seismic Hazards.....	4.6-4
4.6.4	Volcanic Hazards .....	4.6-4
4.7	Air Resources .....	4.7-1
4.7.1	Climate and Meteorology .....	4.7-1
4.7.2	Standards and Regulations.....	4.7-3
4.7.3	Radiological Air Quality.....	4.7-3
4.7.4	Nonradiological Conditions.....	4.7-7
4.8	Water Resources.....	4.8-1
4.8.1	Surface Water .....	4.8-1
4.8.2	Subsurface Water.....	4.8-2
4.8.3	Water Use and Rights .....	4.8-9
4.9	Ecological Resources .....	4.9-1
4.9.1	Flora .....	4.9-1
4.9.2	Fauna.....	4.9-1
4.9.3	Threatened, Endangered, and Sensitive Species .....	4.9-2
4.9.4	Wetlands .....	4.9-3
4.9.5	Radioecology.....	4.9-3
4.10	Noise .....	4.10-1
4.11	Traffic and Transportation .....	4.11-1
4.11.1	Roadways.....	4.11-1
4.11.2	Railroads.....	4.11-3
4.11.3	Airports and Air Traffic.....	4.11-3
4.11.4	Accidents .....	4.11-3
4.11.5	Transportation of Waste and Materials .....	4.11-4
4.12	Occupational and Public Health and Safety .....	4.12-1
4.12.1	Radiological Health Risk .....	4.12-1
4.12.2	Nonradiological Health Risk .....	4.12-2
4.12.3	Industrial Safety .....	4.12-3
4.13	Idaho National Engineering and Environmental Laboratory Services .....	4.13-1
4.13.1	Water Consumption.....	4.13-1
4.13.2	Electricity Consumption.....	4.13-1
4.13.3	Fuel Consumption .....	4.13-1
4.13.4	Wastewater Disposal .....	4.13-1
4.13.5	Security and Emergency Protection .....	4.13-2

---

4.13.6	Waste Minimization/Pollution Prevention.....	4.13-3
5.	ENVIRONMENTAL IMPACTS.....	5.1-1
5.1	Introduction .....	5.1-1
5.2	Land Use .....	5.2-1
5.2.1	Methodology .....	5.2-1
5.2.2	Land Use Impacts from the No Action Alternative.....	5.2-1
5.2.3	Land Use Impacts from the Proposed Action.....	5.2-1
5.2.4	Land Use Impacts from the Non-Thermal Treatment Alternative .....	5.2-2
5.2.5	Land Use Impacts from the Treatment and Storage Alternative.....	5.2-2
5.3	Socioeconomics.....	5.3-1
5.3.1	Methodology .....	5.3-1
5.3.2	Socioeconomic Impacts from the No Action Alternative .....	5.3-1
5.3.3	Socioeconomic Impacts from the Proposed Action.....	5.3-1
5.3.4	Socioeconomic Impacts from the Non-Thermal Treatment Alternative.....	5.3-2
5.3.5	Socioeconomic Impacts from the Treatment and Storage Alternative.....	5.3-2
5.4	Cultural Resources.....	5.4-1
5.4.1	Methodology .....	5.4-1
5.4.2	Cultural Resource Impacts from the No Action Alternative.....	5.4-1
5.4.3	Cultural Resource Impacts from the Proposed Action.....	5.4-1
5.4.4	Cultural Resource Impacts from the Non-Thermal Treatment Alternative ...	5.4-3
5.4.5	Cultural Resource Impacts from the Treatment and Storage Alternative.....	5.4-3
5.5	Aesthetic and Scenic Resources.....	5.5-1
5.5.1	Methodology .....	5.5-1
5.5.2	Aesthetic and Scenic Resource Impacts from the No Action Alternative.....	5.5-1
5.5.3	Aesthetic and Scenic Resource Impacts from the Proposed Action .....	5.5-2
5.5.4	Aesthetic and Scenic Resource Impacts from the Non-Thermal Treatment Alternative.....	5.5-2
5.5.5	Aesthetic and Scenic Resource Impacts from the Treatment and Storage Alternative.....	5.5-2
5.6	Geology .....	5.6-1
5.6.1	Methodology .....	5.6-1
5.6.2	Geologic Impacts from the No Action Alternative.....	5.6-1
5.6.3	Geologic Impacts from the Proposed Action.....	5.6-1
5.6.4	Geologic Impacts from the Non-Thermal Treatment Alternative .....	5.6-2
5.6.5	Geologic Impacts from the Treatment and Storage Alternative.....	5.6-2
5.7	Air Resources .....	5.7-1
5.7.1	Methodology .....	5.7-1
5.7.2	Sources and Emissions.....	5.7-3
5.7.3	Radiological Impacts .....	5.7-5
5.7.4	Nonradiological Impacts .....	5.7-8
5.7.5	Air Resource Impacts from Alternatives Due to Mobile Sources .....	5.7-20
5.7.6	Air Resource Impacts from Alternatives Due to Construction .....	5.7-20
5.7.7	Advanced Mixed Waste Treatment Project Design Measures to Minimize Impacts .....	5.7-21
5.8	Water Resources.....	5.8-1
5.8.1	Methodology .....	5.8-1
5.8.2	Water Resources Impacts from the No Action Alternative .....	5.8-1

---

5.8.3	Water Resources Impacts from the Proposed Action.....	5.8-2
5.8.4	Water Resources Impacts from the Non-Thermal Treatment Alternative .....	5.8-3
5.8.5	Water Resources Impacts for the Treatment and Storage Alternative.....	5.8-3
5.9	Ecological Resources .....	5.9-1
5.9.1	Methodology .....	5.9-1
5.9.2	Ecological Impacts from No Action Alternative.....	5.9-1
5.9.3	Ecological Impacts from the Proposed Action.....	5.9-1
5.9.4	Ecological Impacts from the Non-Thermal Treatment Alternative .....	5.9-3
5.9.5	Ecological Impacts from the Treatment and Storage Alternative .....	5.9-3
5.10	Noise .....	5.10-1
5.10.1	Methodology .....	5.10-1
5.10.2	Noise Impacts from Alternatives .....	5.10-1
5.11	Traffic and Transportation .....	5.11-1
5.11.1	Methodology .....	5.11-1
5.11.2	Traffic and Transportation Impacts from the No Action Alternative.....	5.11-1
5.11.3	Traffic and Transportation Impacts from the Proposed Action.....	5.11-1
5.11.4	Traffic and Transportation Impacts from the Non-Thermal Treatment Alternative.....	5.11-2
5.11.5	Traffic and Transportation Impacts from the Treatment and Storage Alternative.....	5.11-2
5.12	Occupational and Public Health and Safety .....	5.12-1
5.12.1	Radiological Exposure and Health Effects.....	5.12-1
5.12.2	Nonradiological Exposure and Health Effects.....	5.12-3
5.12.3	Industrial Safety .....	5.12-3
5.13	Idaho National Engineering and Environmental Laboratory Services .....	5.13-1
5.13.1	Methodology .....	5.13-1
5.13.2	Idaho National Engineering and Environmental Laboratory Services Impacts from the No Action Alternative .....	5.13-1
5.13.3	Idaho National Engineering and Environmental Laboratory Services Impacts from the Proposed Action .....	5.13-1
5.13.4	Idaho National Engineering and Environmental Laboratory Services Impacts from the Non-Thermal Treatment Alternative .....	5.13-3
5.13.5	Idaho National Engineering and Environmental Laboratory Services Impacts from the Treatment and Storage Alternative .....	5.13-3
5.14	Facility Accidents .....	5.14-1
5.14.1	Historical Perspective .....	5.14-1
5.14.2	Methodology .....	5.14-2
5.14.3	Facility Accident Impacts from the No Action Alternative .....	5.14-3
5.14.4	Facility Accident Impacts from the Proposed Action.....	5.14-4
5.14.5	Facility Accident Impacts from the Non-Thermal Treatment Alternative .....	5.14-6
5.14.6	Facility Accident Impacts from the Treatment and Storage Alternative .....	5.14-6
5.15	Cumulative Impacts .....	5.15-1
5.16	Unavoidable Adverse Impacts .....	5.16-1
5.16.1	Cultural Resources .....	5.16-1
5.16.2	Aesthetic and Scenic Resources .....	5.16-1
5.16.3	Air Resources.....	5.16-1
5.16.4	Water Resources .....	5.16-1
5.16.5	Ecological Resources.....	5.16-2

---

5.17	Relationship Between Short-Term Use of the Environment and the Maintenance and Enhancement of Long-Term Productivity.....	5.17-1
5.17.1	No Action Alternative.....	5.17-1
5.17.2	Proposed Action .....	5.17-1
5.17.3	Non-Thermal Treatment Alternative.....	5.17-1
5.17.4	Treatment and Storage Alternative .....	5.17-1
5.18	Irreversible and Irrecoverable Commitments of Resources.....	5.18-1
5.19	Mitigation.....	5.19-1
5.19.1	Cultural Resources .....	5.19-1
5.19.2	Aesthetic and Scenic Resources .....	5.19-1
5.19.3	Geology.....	5.19-1
5.19.4	Air Resources.....	5.19-1
5.19.5	Water Resources .....	5.19-2
5.19.6	Ecological Resources.....	5.19-2
5.19.7	Transportation.....	5.19-2
5.19.8	Occupational and Public Health and Safety .....	5.19-2
5.19.9	Idaho National Engineering and Environmental Laboratory Services.....	5.19-2
5.19.10	Accidents .....	5.19-2
5.20	Environmental Justice .....	5.20-1
5.20.1	Methodology .....	5.20-1
5.20.2	Potential Impacts on Minority and Low-Income Populations from the Consumption of Fish and Wildlife .....	5.20-2
5.20.3	Impacts from Advanced Mixed Waste Treatment Project Alternatives .....	5.20-2
5.21	Long-Term Storage Impacts .....	5.21-1
6.	LIST OF PREPARERS AND REVIEWERS.....	6-1
7.	STATUTES, REGULATIONS, CONSULTATIONS, AND OTHER REQUIREMENTS ....	7-1
7.1	Statutes and Regulations .....	7-1
7.1.1	Federal and State Environmental Statutes and Regulations .....	7-1
7.1.2	Other Pertinent Laws or Requirements .....	7-3
7.2	Additional Comparisons Between Alternatives.....	7-4
7.3	Consultation.....	7-4
8.	INDEX .....	8-1
9.	REFERENCES .....	9-1
10.	DISTRIBUTION LIST .....	10-1
APPENDICES		
A	CONSULTATION LETTERS .....	A-1
B	FACILITY DESCRIPTION INFORMATION .....	B-1
B-1	Non-Thermal Treatment Operations .....	B-1
B-1.1	Supercompactor .....	B-2
B-1.2	Macroencapsulation System.....	B-3
B-1.3	Special Case Waste Glovebox.....	B-5
B-2	Incinerators.....	B-7

---

B-2.1	Emissions/Compliance .....	B-9
B-2.2	Incinerator System.....	B-12
B-2.3	Air Pollution Control System .....	B-14
B-2.4	Automatic Waste Feed Cutoff System.....	B-16
B-2.5	Programmable Electronic System.....	B-16
B-2.6	Maximum Allowable Control Technology .....	B-17
B-2.7	<i>Toxic Substances Control Act</i> .....	B-17
B-2.8	Maintenance .....	B-17
B-2.9	Fast Shutdown Procedures.....	B-17
B-2.10	Automatic Waste Feed Cutoff Pre-alarms .....	B-18
B-3	Vitrification .....	B-18
B-3.1	Description of Melter.....	B-21
C	SETTLEMENT AGREEMENT	
	Public Service Co. of Colorado v. Batt and United States v. Batt .....	C-1
D	GLOSSARY .....	D-1
E	TECHNICAL METHODOLOGIES AND KEY DATA .....	E-1-1
E-1	Socioeconomics.....	E-1-1
E-1.1	Methodology and Key Assumptions for Socioeconomics.....	E-1-1
E-1.2	Population, Housing, and Community Services .....	E-1-2
E-1.3	Key Assumptions.....	E-1-2
E-2	Geology and Water .....	E-2-1
E-2.1	Geology.....	E-2-1
E-2.1.1	Seismicity .....	E-2-1
E-2.1.2	Volcanism.....	E-2-3
E-2.2	Water Resources .....	E-2-12
E-2.2.1	Surface Water .....	E-2-12
E-2.2.2	Subsurface Water.....	E-2-13
E-3	Air Resources .....	E-3-1
E-3.1	The Idaho National Engineering and Environmental Laboratory Environment .....	E-3-2
E-3.1.1	Radiation and Airborne Radioactivity .....	E-3-2
E-3.1.2	Background Nonradiological Air Quality .....	E-3-2
E-3.2	Air Quality and Environmental Protection Standards and Regulations.....	E-3-3
E-3.2.1	Ambient Air Quality Standards.....	E-3-5
E-3.2.2	Prevention of Deterioration.....	E-3-5
E-3.2.3	National Emissions Standards for Hazardous Air Pollutants.....	E-3-6
E-3.2.4	State of Idaho Permit Programs .....	E-3-7
E-3.2.5	State of Idaho Rules for Toxic Air Pollutants.....	E-3-8
E-3.2.6	Standards for Hazardous Wastes and Toxic Substance Control .....	E-3-9
E-3.2.7	Department of Energy Orders and Guides .....	E-3-10
E-3.2.8	Measures to Minimize Impacts .....	E-3-10
E-3.3	Air Quality Impact Assessment Methodology .....	E-3-16
E-3.3.1	Source Term Estimation .....	E-3-16
E-3.3.2	Radiological Assessment Methodology .....	E-3-17
E-3.3.3	Nonradiological Assessment Methodology .....	E-3-25
E-4	Occupational and Public Health and Safety .....	E-4-1

E-4.1	Radiological Health and Safety .....	E-4-1
E-4.2	Nonradiological Hazards .....	E-4-4
E-5	Facility Accidents .....	E-5-1
E-5.1	Introduction.....	E-5-1
E-5.2	Methodology .....	E-5-1
E-5.2.1	Selection of Accident Scenarios .....	E-5-1
E-5.2.2	Computer Modeling to Estimate Radiation Doses.....	E-5-4
E-5.2.3	Modeling for Hazardous Chemical Releases.....	E-5-5
E-5.3	Inventory of Radioactive and Hazardous Materials.....	E-5-7
E-5.4	Accident Consequence Assessment.....	E-5-12
E-5.4.1	Source Terms.....	E-5-12
E-5.4.2	Meteorological Parameters .....	E-5-27
F	PROJECT HISTORY .....	F-1
G	ADVANCED MIXED WASTE TREATMENT PROJECT ENVIRONMENTAL IMPACT STATEMENT CONTRACTOR AND SUBCONTRACTOR DISCLOSURE STATEMENTS .....	
		G-1

## LIST OF FIGURES

1.3-1	Decisions leading to the execution of the AMWTP EIS .....	1-4
1.4-1	Layout of the Radioactive Waste Management Complex .....	1-7
3-1	Location of the AMWTP facility.....	3-2
3-2	Three dimensional view of the TSA, showing the AMWTP facility.....	3-3
4.2-1	INEEL site vicinity map .....	4.2-2
4.2-2	Selected land uses at the INEEL and in surrounding region.....	4.2-3
4.6-1	Geologic features in the region of the INEEL .....	4.6-2
4.6-2	Map of INEEL showing locations of VRZs and lava flow hazard zones.....	4.6-3
4.7-1	Annual average wind direction and speed at meteorological monitoring stations on the INEEL .....	4.7-2
4.7-2	Offsite environmental dosimeter and foodstuff sampling locations.....	4.7-6
4.8-1	Locations of selected INEEL facilities shown with the predicted inundation area for the probable maximum flood-inducing overtopping failure of the Mackay Dam (Bennett 1990) .....	4.8-3
4.8-2	USGS aquifer water level monitoring wells in the RWMC vicinity.....	4.8-5
4.8-3	Water level map of the Snake River Plain Aquifer at the SDA of the RWMC .....	4.8-6
4.8-4	NW-SE Cross-Section along the RWMC southern boundary (Becker et al. 1996).....	4.8-7
4.9-1	Approximate distribution of vegetation map at the INEEL.....	4.9-2
4.9-2	Surface water features at the INEEL.....	4.9-4
4.11-1	Regional roadway infrastructure in southeastern Idaho .....	4.11-2
5.7-1	Dose to onsite worker, maximally exposed offsite individual, and collective population due to projected airborne radionuclide emissions under each of the four AMWTP alternatives .....	5.7-9
5.7-2	Cumulative criteria pollutant impacts at INEEL boundary (left) and public road locations (right), as percentages of the applicable Ambient Air Quality Standards. Impacts for the Treatment and Storage Alternative would be identical to the Proposed Action Alternative.....	5.7-12
5.20-1	Minority population distribution for INEEL and surrounding counties .....	5.20-4
5.20-2	Low-income distribution by poverty status for INEEL and surrounding counties.....	5.20-5
B-2-1	AMWTP facility incinerator schematic .....	B-8
B-2-2	AMWTP facility incinerator Air Pollution Control System .....	B-10
B-3-1	Simplified process flow diagram of the melter .....	B-19
B-3-2	Simplified process flow diagram of the melter Air Pollution Control System .....	B-20
E-2.1.1-1	Geologic features in region of the INEEL .....	E-2-2
E-2.1.1-2	Seismic hazard map for a return period of 500 years .....	E-2-4
E-2.1.1-3	Seismic hazard map for a return period of 2000 years .....	E-2-5
E-2.1.1-4	Contributions of the seismic sources to the mean seismic hazard at RWMC.....	E-2-6
E-2.1.1-5	Contributions of the fault sources to the mean seismic hazard at RWMC .....	E-2-7
E-2.1.1-6	Contributions of the volcanic sources to the mean seismic hazard at RWMC .....	E-2-8
E-2.1.1-7	Contributions of the regional source zones to the mean seismic hazard at RWMC .....	E-2-9
E-2.1.2-1	Map showing volcanic vents and volcanic recurrence interval for volcanic zones in the INEEL region.....	E-2-10
E-3-1	Overview of Federal, State, and DOE programs for air quality management .....	E-3-4
E-3-2	Schematic of Zone 3 and glovebox exhaust system (BNFL 1998b) .....	E-3-11
E-3-3	Simplified schematic of the incinerator air pollution control system (BNFL 1998a).....	E-3-14
E-3-4	Simplified schematic of the melter air pollution control system (BNFL 1998a).....	E-3-15
E-3-5	Diagram of main stack flues (MK 1997) .....	E-3-28

## LIST OF TABLES

S-1	Summary of mixed waste volume by waste category.....	S-2
1.2-1	Summary of mixed waste volume by waste category.....	1-2
1.5-1	NEPA reviews related to the AMWTP decision.....	1-9
3.6-1	Environmental Comparison of Contractor Proposed AMWTP Technologies .....	3-16
3.8-1	Summary Comparison of Alternative Environmental Impacts (In Addition to Baseline).....	3-20
4.2-1	Summary of land use within the primary facility areas of the INEEL .....	4.2-4
4.3-1	Employment by sector in 1995 .....	4.3-1
4.3-2	Population estimates for the INEEL ROI.....	4.3-2
4.3-3	ROI housing characteristics (1990) .....	4.3-3
4.7-1	Summary of airborne radionuclide emissions (in curies) for 1995 and 1996 from facility areas at the INEEL .....	4.7-4
4.7-2	Comparison of recent criteria air pollutant emissions estimates for the INEEL with the levels assessed under the maximum emissions case in the DOE INEL EIS .....	4.7-8
4.7-3	PSD increment consumption at Class II areas at the INEEL by existing (1996) sources subject to PSD regulation .....	4.7-11
4.8-1	Summary of highest detected contaminant concentrations in groundwater within the RWMC (1995 to 1996) .....	4.8-8
4.9-1	Sensitive, rare, or unique plant species that may be found on the INEEL .....	4.9-3
4.11-1	Baseline traffic for selected highway segments in the vicinity of the INEEL .....	4.11-1
4.11-2	Baseline annual vehicle miles traveled for traffic related to the INEEL.....	4.11-3
4.11-3	Collective doses and fatalities from incident-free onsite shipments at the INEEL for 1995 to 2005 .....	4.11-4
4.12-1	Lifetime excess fatal cancer risk due to annual exposure to routine airborne releases at the INEEL.....	4.12-1
4.12-2	Increased population risk of developing excess fatal cancers due to routine airborne releases at the INEEL .....	4.12-2
4.13-1	Water consumption at the RWMC and the INEEL .....	4.13-1
4.13-2	Average fuel consumption amounts at the INEEL and the RWMC.....	4.13-2
5.7-1	Radionuclide emission rates (curies per year) for operation of the AMWTP under the Proposed Action and Non-Thermal Treatment Alternatives.....	5.7-4
5.7-2	Projected nonradiological emission rates for the proposed AMWTP and support equipment .....	5.7-6
5.7-3	Summary of radiation dose associated with airborne radionuclide emissions from the proposed AMWTP alternatives.....	5.7-7
5.7-4	Radiation doses over the projected operating lifetime of the AMWTP .....	5.7-8
5.7-5	Cumulative criteria pollutant emissions at public access locations for the proposed AMWTP alternatives.....	5.7-11
5.7-6	Ambient air concentrations of toxic air pollutants for proposed AMWTP alternatives .....	5.7-14
5.7-7	Onsite concentrations of toxic air pollutants for proposed AMWTP alternatives .....	5.7-15
5.7-8	PSD increment consumption at Craters of the Moon Wilderness Area for the combined effects of existing sources, foreseeable increases, and the proposed AMWTP.....	5.7-18
5.7-9	PSD increment consumption at INEEL boundary and public road locations (Class II areas) for the combined effects of existing sources, foreseeable increases, and the proposed AMWTP .....	5.7-19
5.10-1	Predicted noise impact from sources related to the proposed AMWTP .....	5.10-1
5.12-1	Fatal cancer risk summary from radiological exposure resulting from annual radiological emissions .....	5.12-2

5.12.2	Summary of radiation doses and human health impacts associated with airborne emissions over the projected operating lifetime of the AMWTP .....	5.12-2
5.12-3	Lifetime cancer risk for annual release of non-radiological carcinogenic air pollutants.....	5.12-4
5.12.4	Estimated industrial safety impacts by alternative for duration of construction and operation.....	5.12-5
5.13-1	AMWTP services compared to INEEL services .....	5.13-2
5.14-1	Likelihood categories of potential accidents.....	5.14-2
5.14-2	Bounding accidents for TRU wastes.....	5.14-3
5.14-3	Bounding accident results for 100-meter co-located workers .....	5.14-4
5.14-4	Bounding accident results for toxicological releases.....	5.14-4
5.14-5	Preliminary accident screening for proposed AMWTP.....	5.14-5
5.14-6	Source terms for bounding accident scenarios for Proposed Action .....	5.14-5
5.15-1	Projects at the INEEL associated with Alternative B (Ten-Year Plan) and Alternative D (maximum treatment, storage, and disposal) .....	5.15-2
5.15-2	Offsite activities included in the Assessment of Cumulative Impacts in the DOE INEL EIS.....	5.15-3
5.15-3	Cumulative impacts by resource area and alternative .....	5.15-5
5.15-4	Cumulative transportation-related radiological collective doses and cancer fatalities (1953 to 2005) .....	5.15-8
5.15-5	Health-related cumulative impacts.....	5.15-11
5.18-1	Commitment of resources by alternative.....	5.18-2
5.20-1	Selected demographic characteristics for the INEEL region of influence.....	5.20-3
5.21-1	Radiological Impacts to Inadvertent Intruders Following Loss of Institutional Control at INEEL.....	5.21-3
5.21-2	Maximum Lifetime MEI and Population Impacts at INEEL Under No Action Alternative 2.....	5.21-4
B-2-1	Incinerator operating conditions for LLMW .....	B-7
B-3-1	Summary of vitrification process specifications .....	B-22
E-2.1.2-1	Estimated volcanic-recurrence intervals and corresponding annual eruption probabilities (in parentheses) for volcanic zones and boreholes of the INEEL area .....	E-2-11
E-3-1	Proposed MACT standards for combustion of hazardous waste and maximum estimated AMWTP stack concentrations.....	E-3-8
E-3-2	Radionuclide emission rates for individual sources (curies per year).....	E-3-18
E-3-3	Projected nonradiological emission rates for the proposed AMWTP and support equipment.....	E-3-19
E-3-4	AMWTP stack exit parameters .....	E-3-29
E-4.1-1	Risk of fatal cancer and other health effects from exposure to radiation .....	E-4-1
E-4.1-2	Summary of radiation dose and human health impacts associated with airborne emissions from the AMWTP .....	E-4-2
E-4.1-3	Summary of radiation dose and human health impacts associated with airborne emissions over the projected operating lifetime of the AMWTP .....	E-4-2
E-4.1-4	Estimated doses to members of the public from INEEL airborne releases for years 1995 and 1996 .....	E-4-2
E-4.1-5	Estimated natural background radiation dose for the Snake River Plain.....	E-4-3
E-4.1-6	Collective total effective dose equivalent (TEDE) of individuals with measurable dose for the DOE Complex, INEEL, and RWMC .....	E-4-3
E-4.1-7	RWMC total measured dose .....	E-4-4
E-4.2-1	DOE Complex, INEEL, and RWMC injury, illness, and fatality statistics.....	E-4-4
E-5.2-1	Frequencies and consequences of hazards evaluated .....	E-5-2
E-5.2-2	Design basis accident scenarios for the AMWTP.....	E-5-2

---

E-5.2-3 Basic toxicological criteria for derivation of TOX-1 and TOX-2 .....	E-5-6
E-5.3-1 Volume and decayed activity in waste stored in the TSA.....	E-5-8
E-5.3-2 General concentration distribution of waste at the TSA.....	E-5-8
E-5.3-3 Radionuclide Inventory for TSA Waste and Scaled for the AMWTP facility.....	E-5-9
E-5.3-4 Breakdown of TSA waste by container type .....	E-5-10
E-5.3-5 Hazardous chemical inventory for waste stored at the TSA.....	E-5-11
E-5.4-1 Source term for fire involving waste in the box/drum line .....	E-5-14
E-5.4-2 Source Term for Loss of All AC power .....	E-5-16
E-5.4-3 Source Term for Dropped Waste Box Outdoor During Transfer .....	E-5-18
E-5.4-4 Source Term for Fire in TRU Waste in the TSA-RE .....	E-5-19
E-5.4-5 Source Term for Incinerator Explosion.....	E-5-21
E-5.4-6 Source Term for Wind-Borne Missile Breach of Building Structure.....	E-5-22
E-5.4-7 Source Term for Fire Involving Waste Transfer Vehicle .....	E-5-23
E-5.4-8 Source Term for Vitrifier Explosion.....	E-5-24
E-5.4-9 Source Term for Type II Storage Module Fire.....	E-5-26
F-1-1 Summary of Non-Treatment and Treatment Alternatives .....	F-5
F-1-2 Treatment Alternatives with Respect to Objectives .....	F-7
F-1-3 Evaluation of Feasible Options with Respect to the Objectives.....	F-11
F-1-4 Summary of Private Sector Treatment of Alpha LLMW and TRU Mixed Waste .....	F-13
F-1-5 Summary of Adjusted Transportation Costs to 1996 Dollars .....	F-17
F-1-6 Summary of WIPP WAC characterization, transportation, and disposal requirements .....	F-17
F-1-7 Summary of AMWTP WAC for INEEL wastes .....	F-19
F-1-8 Summary of WAC for wastes received from non-INEEL sites .....	F-21
F-1-9 Existing Wastes Stored at the TSA .....	F-24