DOE/NV--1096

Annual Transportation Report for Radioactive Waste Shipments to and from the Nevada Test Site

Fiscal Year 2005

Prepared December 2005

U.S. Department of Energy
National Nuclear Security Administration
Nevada Site Office

Available for sale to the public from-

U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
Phone: 800.553.6847
Fax: 703.605.6900
Email: orders@ntis.gov
Online ordering: http://www.ntis.gov/ordering.htm

Available electronically at http://www.osti.gov/bridge

Available for a processing fee to U.S. Department of Energy and its contractors, in paper, from-

U.S. Department of Energy
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, TN 37831-0062
Phone: 865.576.8401
Fax: 865.576.5728
Email: reports@adonis.osti.gov

DOE/NV -- 1096

ANNUAL REPORT - FY 2005

Radioactive Waste Shipments to and From the Nevada Test Site (NTS)

December 2005

United States Department of Energy
National Nuclear Security Administration
Nevada Site Office
Las Vegas, Nevada

This page intentionally left blank

TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 SUMMARY OF WASTE SHIPMENTS (FY 2005) 1
2.1 Waste Transporters (Motor Carriers) 3
2.2 Shipments and Volume 5
2.3 Transportation Routes 6
2.4 Transportation Route Reporting 10

3.0 INCIDENT/ACCIDENT DATA 10

4.0 EVALUATION OF SHIPPING CAMPAIGNS 11

5.0 REFERENCES 11

6.0 POINTS OF CONTACT 12

7.0 ACRONYM LIST 12

8.0 DISTRIBUTION LIST 13

This page intentionally left blank

1.0 INTRODUCTION

In February 1997, the U.S. Department of Energy, Nevada Operations Office issued the Mitigation Action Plan which addressed potential impacts described in the "Final Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada" (DOE/EIS 0243). The U.S. Department of Energy, Nevada Operations Office committed to several actions, including the preparation of an annual report, which summarizes waste shipments to and from the Nevada Test Site (NTS) Radioactive Waste Management Sites (RWMSs) at Area 3 and Area 5. This document satisfies requirements with regard to low-level radioactive waste (LLW) and mixed low-level radioactive waste (MLLW) transported to or from the NTS during fiscal year (FY) 2005. In addition, this document provides shipment, volume, and route information on transuranic (TRU) waste shipped from the NTS to the Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico. This outbound shipping campaign commenced in FY 2004.

This report has been prepared in accordance with the specifications contained in Section 4.1.1 (Commitments) of the "NTS Environmental Impact Statement, Mitigation Action Plan" (February 1997). Tabular summaries are provided which include the following data:

- Sources of and carriers for LLW and MLLW shipments to or from the NTS;
- Number and external volume of LLW and MLLW shipments;
- Identification of highway routes used by carriers; and
- Incident/accident data applicable to LLW and MLLW shipments.

2.0 SUMMARY OF WASTE SHIPMENTS (FY 2005)

In FY 2005, disposal of LLW/MLLW at the two NTS RWMSs consisted of 1,390 inbound offsite shipments, from 25 approved generators. These shipments were transported on 19 different approved motor carriers. A total of 2,066,827 ft^3 of LLW was disposed of at the NTS by offsite generators in FY 2005. No MLLW was shipped to the NTS in FY 2005.

Two onsite generators disposed of 24,943 ft^3 of LLW in FY 2005. This volume was transported in 50 onsite transfers. Motor carriers utilized for these shipments were government vehicle (Bechtel Nevada) and R&R Trucking. No MLLW was disposed of by onsite generators in FY 2005.

A total of 2,091,770 ft^3 LLW was disposed of at the NTS in FY 2005.

Three outbound shipments (2,095 ft^3) of MLLW were made from the NTS to Envirocare in Utah. Twenty-nine shipments of TRU waste (8,476 ft^3) were made from the NTS to WIPP in FY 2005. Tabular information for these shipments is included in this report.

Table 1 provides a summary of inbound, outbound, and onsite shipments for FY 2005. Names and codes for approved generators and carriers used in this report are located in Tables 2 and 3, respectively.

Table 1. FY 2005 NTS Inbound, Outbound and On-site Shipment Summary Information

Inbound	Offsite Generators	NTS Generators	Carriers	Shipments	Volume ft^3
LLW (offsite)	25	0	19	1,390	2,066,827
LLW (onsite)	0	2	1	50	24,943
MLLW	0	0	0	0	0
Outbound	**Offsite Generators**	**NTS Generators**	**Carriers**	**Shipments**	**Volume ft^3**
LLW	0	0	0	0	0
MLLW	0	1	1 1/	3	2,095
TRU	0	1	2 2/	29	8,476

1/ CAST Transportation was utilized for these MLLW shipments.
2/ Tri-State Motor Transit and CAST Specialty Transport were utilized for these TRU shipments.

Table 2. List of Approved Generators Shipping To The NTS In FY 2005

APPROVED GENERATOR, STATE	GENERATOR CODE
ABERDEEN PROVING GROUNDS	AP
BECHTEL JACOBS OAK RIDGE	OR
BECHTEL NEVADA (ONSITE ONLY)	DP
BOEING ROCKETDYNE	BN
BRITISH NUCLEAR FUELS, LTD. INC.	ET
BWXT Y-12 PLANT	BW
DURATEK OAK RIDGE	DR
FLUOR FERNALD	WM
GENERAL ATOMICS	BG
IDAHO ENGINEERING & ENVIRONMENTAL LAB	IN
KAISER HILL (ROCKY FLATS)	RF
LAWRENCE LIVERMORE NATIONAL LAB	LL
LOS ALAMOS NATIONAL LABORATORY	LA
MOUND APPLIED TECHNOLOGIES	MD
NUCLEAR FUEL SERVICES	NF
PADUCAH GASEOUS DIFFUSION PLANT	PD
PANTEX PLANT	PX
PORTSMOUTH GASEOUS DIFFUSION PLANT	PO
PRINCETON PLASMA PHYSICS LAB	PL
SANDIA NATIONAL LAB-CA	SL
SANDIA NATIONAL LAB-NM	SA
STOLLER-NAVARRO JOINT VENTURE (ONSITE ONLY)	IT
TT FOSTER WHEELER	FW
UT BATTELLE FOR DEFENSE NATIONAL STOCKPILE CENTER 3/	TH
UT BATTELLE OAK RIDGE NATIONAL LABORATORY	OL
WEST VALLEY DEMONSTARTION PROJECT	WV
WESTINGHOUSE SAVANNAH RIVER	SR

3/ UT Battelle shipped from sites in Curtis Bay, MD and Hammond, IN in FY 2005

Table 3. List of Approved Motor Carriers Utilized in FY 2005

APPROVED MOTOR CARRIER	CARRIER CODE
AATCO	AADD
BUFFALO FUEL COMPANY	BFUI
CAST TRANSPORTATION	COLO
CAST SPECIALTY TRANSPORT 4/	CAST
DAVIS TRUCKING	DAVS
FLUID TRANSPORTS	FLAI
GOVERNMENT VEHICLE	GT+
HITTMAN TRANSPORT	HITT
LANDSTAR AMERICA EXPRESS	LEAM
LANDSTAR INWAY	LDWY
LANDSTAR LIGON	LIGS
LANDSTAR RANGER	LRGR
INTERSTATE VENTURES	ITSV
AJ METLER	MAJH
MP ENVIRONMENTAL	MPES
R&R TRUCKING	RRUK
SOUTHERN FREIGHT LOGISITICS	SFLG
SPECIALTY TRANSPORT	SPCN
TAG TRANSPORT	TAGD
TRI-STATE MOTOR TRANSIT 5/	TSMT

4/ CAST Specialty Transport is an approved TRU shipment carrier only.
5/ Tri-State Motor Transit is approved to transport both TRU and LLW shipments.

2.1 Waste Transporters (Motor Carriers)

Generators often use more than one motor carrier to facilitate their shipments. Table 4 identifies each generator and the corresponding carrier(s) utilized for transport of inbound, offsite LLW shipments. Table 5 identifies each generator and the corresponding carrier(s) utilized for transport of outbound, offsite shipments of TRU and MLLW. Table 6 identifies each generator and the corresponding carrier(s) utilized for transport of onsite transfers of LLW. Motor carriers operate in compliance with regulations located in Title 49 Code of Federal Regulations, “Transportation,” and are selected by the generator.

Table 4. Waste Transporters Utilized by Generator for Inbound Shipments

	AP	BG	BN	BW	DR	ET	FW	IN	LA	LL	MD	NF	OL	OR	PD	PL	PO	PX	RF	SA	SL	SR	TH	WM	WV
AADD																			1						
BFUI																									42
COLO																			452						
DAVS														7											
FLAI											4			2				6		7		3		1	
GT+										4															
HITT					1		3							20	18										
ITSV														3											
LDWY											33				1							7			
LEAM																						2			
LIGS											4			2								8		1	
LRGR						1					77			1	5							22		1	
MAJH				3									1	5			10					41			
MPES			50						10												1				
RRUK	4													1			1		1						
SFLG												21													
SPCN																	4								
TAGD							4							24			16						258		
TSMT		1		7				13		9				6	56	1	37		66						

Table 5. Waste Transporters Utilized by NTS Generators for Outbound Shipments

	DP
COLO	3
CAST/TSMT	29

Table 6. Waste Transporters Utilized by NTS Generators for Onsite Shipments

	DP	IT
GT+	45	4
RRUK	1	

2.2 Shipments and Volume

Table 7 provides a summary of all LLW, MLLW, and TRU shipments, including volume, to and from the NTS during FY 2005.

Table 7. Shipments and Volumes of Waste Sent To and From the NTS (FY 2005)

Offsite Inbound Low-Level Waste Shipments	Shipments by Quarter					Volume
Generator Code	1st	2nd	3rd	4th	Total	(ft3)
AP				4	4	1,619
BG				1	1	738
BN	40		8	2	50	20,734
BW				10	10	7,425
DR				1	1	204
ET	1				1	904
FW	6		1		7	2,283
IN	3	6	1	3	13	19,316
LA				10	10	4,803
LL	5	5		3	13	10,906
MD	30	19	39	30	118	178,484
NF		1	13	7	21	10,080
OL				1	1	2,643
OR	3	12	26	30	71	60,103
PD				80	80	76,699
PL				1	1	455
PO		17	19	32	68	86,661
PX	1	1	2	2	6	5,485
RF	244	233	38	5	520	1,098,749
SA		1	2	4	7	16,071
SL			1		1	141
SR	13	28	37	5	83	42,725
TH	50	72	75	61	258	350,880
WM	1			2	3	2,087
WV	15		4	23	42	66,632
Totals	412	395	266	317	1,390	2,066,827
Onsite Low-Level Waste Shipments	Shipments by Quarter					Volume
Generator Code	1st	2nd	3rd	4th	Total	(ft3)
DP	3	1	6	36	46	24,732
IT	1	1	1	1	4	108
Total	4	2	7	37	50	24,840
Outbound Mixed Low-Level Waste Shipments	Shipments by Quarter					Volume
Generator Code	1st	2nd	3rd	4th	Total	(ft3)
DP		1		2	3	700
Total		1		2	3	700
Outbound Transuranic Waste Shipments	Shipments by Quarter					Volume
Generator Code	1st	2nd	3rd	4th	Total	(ft3)
DP	11	9	5	4	29	8,476
Total	11	9	5	4	29	8,476

2.3 Transportation Routes

Twenty-five out-of-state approved generators shipped LLW to the NTS for disposal in FY 2005. Table 8 provides specific routes utilized by each generator and the number of shipments in FY 2005. Figures 1 and 2 provide graphical interpretations of the general cross country and local/regional transportation routes, respectively.

Figure 1
FY 2005 National Low-Level Waste General Transportation Routes

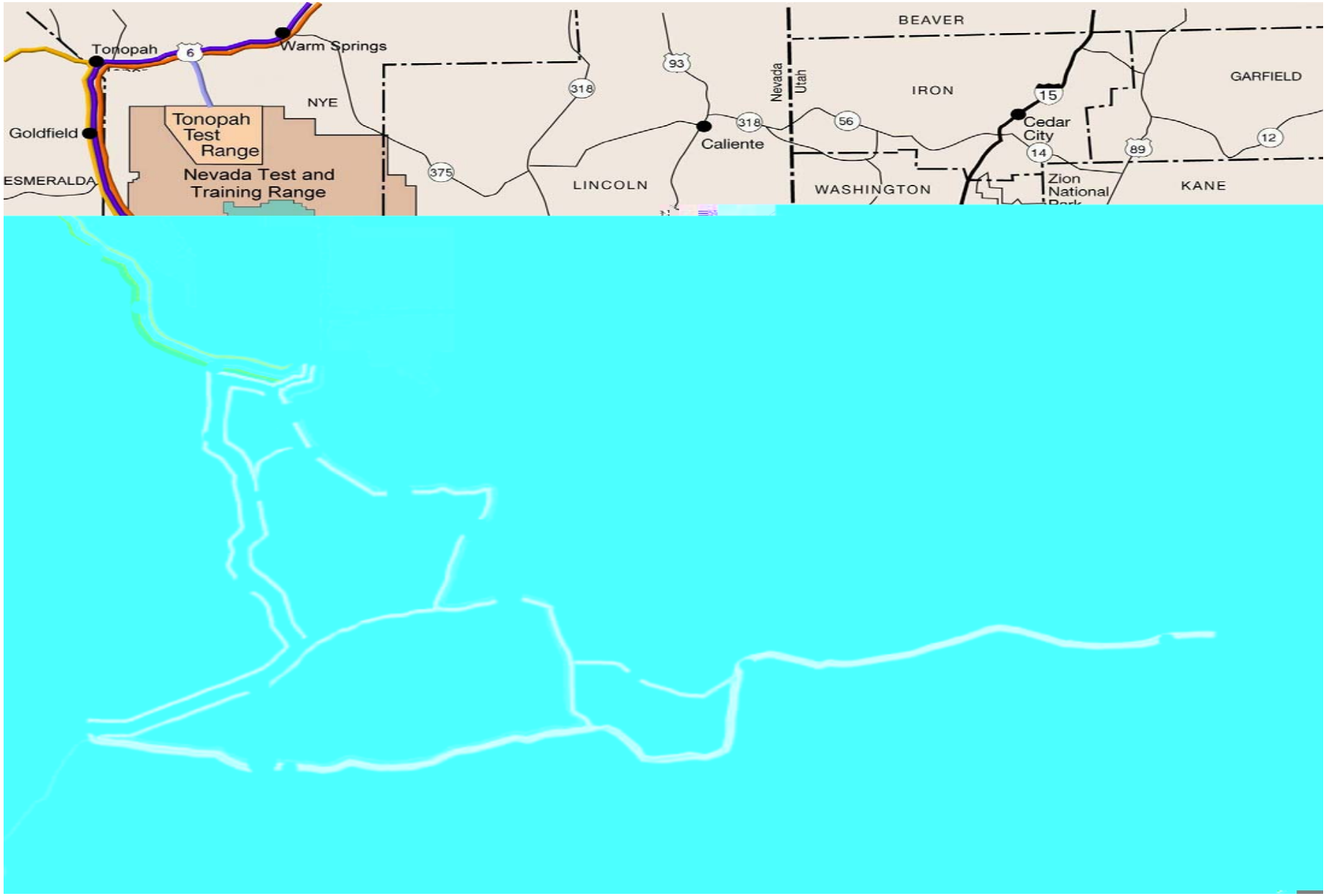
Tonopah
6
Warm Springs
NYE
Goldfield
Tonopah Test Range
Nevada Test and Training Range
ESMERALDA
375
318
93
LINCOLN
Caliente
318
Nevada
Utah
56
BEAVER
IRON
15
Cedar City
14
WASHINGTON
Zion National
GARFIELD
89
12
KANE

Table 8. Shipment Summary of Offsite Inbound and Outbound Regional Routes for FY 2005

DESCRIPTION	AP	BG	BN	BW	DP	DR	ET	FW	IN	IT	LA	LL	MD	NF	OL	OR	PD	PL	PO	PX	RF	SA	SL	SR	TH	WM	WV
I-15, CA-127, CA-178, NV-372, NV-160, US-95			50									2											1				
I-15, CA-127, NV-373, US-95												9															
I-15, NV-160, US-95		1																									
I-40, I-15, CA-127, NV-373, US-95								1					1			3											
I-40, I-15, NV-160, US-95													1														
I-40, US-93, AZ-68, NV-163, US-95, NV-164, I-15, CA-127, NV-373, US-95													1														
I-40, US-93, AZ-68, NV-163, US-95, NV-164, I-15, NV-160, US-95								1					3			6	17		31					3			
I-40, US-95, NV-164, I-15, CA-127, CA-178, NV-372, NV-160, US-95	2																										
I-40, US-95, NV-164, I-15, CA-127, NV-373, US-95								4					1			1									3		
I-40, US-95, NV-164, I-15, NV-160, US-95				10		1	1	1			10		110	21	1	51	63		34	6		7		78	194	3	
I-80, US-50/95-ALT, US-50, US-95												2															
I-80, US-93-ALT, US-6, US-95	2				3 6/				13							10			3		2			2	61		42
US-50, US-6/50, US-6, US-95													1					1			518						
US-95, NV-373, CA-127, I-15, I-40, US-285, SR-200, US-180/62					29 7/																						

6/ Outbound MLLW shipments to Envirocare.
7/ Outbound TRU shipments to WIPP.

2.4 Transportation Route Reporting

As a result of obligations made by former DOE Secretary Richardson, the transportation of inbound LLW shipments through the Las Vegas I-15 and US-95 Interchange ("Spaghetti Bowl") and across Hoover Dam have substantially decreased since FY 2000.

Due to the events of September 11, 2001, tractor trailers are no longer allowed to travel across Hoover Dam. The U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office (NNSA/NSO) continues to engage in discussions with the generators regarding the avoidance of the Spaghetti Bowl. The NTS Waste Acceptance Criteria has been updated to include wording requiring generators to notify their carriers to avoid Hoover Dam and the Spaghetti Bowl.

No shipments of LLW were transported through the Spaghetti Bowl in FY 2005.

NNSA/NSO continues to honor an additional obligation made by former Secretary Richardson, and endorsed by the current administration, by preparing quarterly reports disclosing which routes transporters used to reach the NTS. These reports may be found on the Internet at http://www.nv.doe.gov/emprograms/environment/wastemanagement/twg.htm .

3.0 INCIDENT/ACCIDENT DATA

For the purpose of this report, an incident is defined as a traffic-related accident, a load shift, or a reported leaking/breached package which occurs during transportation.

Generators are instructed to notify the NNSA/NSO Assistant Manager of Environmental Management whenever a discrepancy, non-compliance, or inadequate performance is identified; or if a transportation incident or emergency situation occurs. There was one transportation incident reported in FY 2005.

On July 18, 2005 a CH2M Hill Mound shipment was involved in a minor traffic accident near Winslow, Arizona. There was no damage to the trailer, or breach of the containers.

Bechtel Nevada personnel control NNSA/NSO waste receipt and disposal activities at the NTS and are responsible for notifying appropriate personnel regarding any non-compliant or refused radioactive waste shipments. Bechtel Nevada personnel also immediately notify generators in the event of any shipping paper discrepancies.

Below is a summary of issues observed during waste receipt and disposal activities in FY 2005. These issues are reported to the generators who then implement appropriate corrective actions to prevent recurrence.

- A broken drum ring was discovered on 55-gallon drum. No contamination detected.
- A BN Heavy Equipment Operator backed a front-end loader into, and breached, a SeaLand container containing LLW. There was no release of removable

contamination, no injuries, and no equipment damage aside from the breached SeaLand as a result of this event.

- On one shipment, barcode labels had fallen off three of the five packages.
- Various minor clerical errors were observed and reported to generators.

4.0 EVALUATION OF SHIPPING CAMPAIGNS

One of the 1,422 off site inbound/outbound shipments experienced incidents while in transit to the NTS. All generator shipping campaigns were considered successful.

5.0 REFERENCES

The primary sources of shipment information in this report were records kept by the Bechtel Nevada Waste Management Program, who manages the NTS RWMSs at Area 3 and Area 5. These records provided detailed information on each shipment of LLW and MLLW (dates received, generators, number and type of waste packages, volumes, weight, carrier, and final disposition of shipments). In addition, incident and accident information was gathered by reviewing other Bechtel Nevada and NNSA/NSO correspondence and through personal communication with NNSA/NSO managers, Bechtel Nevada management and program personnel, representatives from the waste generator facilities, and carrier personnel. Route information was gathered from quarterly routing reports generated by NNSA/NSO.

The following source documents are incorporated by reference:

- U.S. Department of Energy, Nevada Operations Office, “Final Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada” DOE/EIS 0243, Las Vegas, Nevada, August 1996.
- U.S. Department of Energy, Nevada Operations Office, “Mitigation Action Plan - Final Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada” DOE/EIS 0243, Las Vegas, Nevada, February 1997.
- U.S. Department of Transportation (DOT) Regulations, 49 CFR, “Transportation,” *Code of Federal Regulations*, Office of the Federal Register, National Archives and Records Administration, U.S. Government Printing Office, Washington, DC, 1998

6.0 POINTS OF CONTACT

Please contact the following personnel for questions concerning the transportation of radioactive waste at the NTS or for requests for information relating to waste management and NNSA/NSO operations.

WASTE MANAGEMENT

E. Frank DiSanza, Director
U.S. Department of Energy
National Nuclear Security Administration
Nevada Site Office
Waste Management Project
P.O. Box 98518
Las Vegas, NV 89193-8518
(702) 295-5855

7.0 ACRONYM LIST

ft^3	Cubic Feet
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
dpm	Disintegrations per minute
EPA	U.S. Environmental Protection Agency
FY	Fiscal Year
LLW	Low-level radioactive waste
MLLW	Mixed Low-Level Radioactive Waste
NNSA/NSO	U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office
NRC	U.S. Nuclear Regulatory Commission
NTS	Nevada Test Site
RWMSs	Radioactive Waste Management Sites
WMP	Waste Management Project

8.0 DISTRIBUTION LIST

U.S. Department of Energy
National Nuclear Security Administration
Nevada Site Office
Technical Library
P.O. Box 98518
Las Vegas, NV 89193-8518

U.S. Department of Energy
National Nuclear Security Administration
Nevada Site Office
Public Reading Facility
c/o Nuclear Testing Archive
P.O. Box 98521
Las Vegas, NV 89193-8521

U.S. Department of Energy
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, TN 37831-0062