

# **ANNUAL REPORT - FY 2000**

## **Radioactive Waste Shipments To And From The Nevada Test Site (NTS)**

**March 2001**

**United States Department of Energy  
Nevada Operations Office  
Las Vegas, Nevada**

*Availability 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.fedworld.gov*  
*Online ordering: <http://www.ntis.gov/ordering.htm>*

*Available electronically at <http://www.doe.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*

## TABLE OF CONTENTS

1.0	INTRODUCTION .....	1
2.0	SUMMARY OF WASTE SHIPMENTS (FY 2000) .....	1
2.1	Waste Transporters (Motor Carriers) .....	2
2.2	Shipments and Volume .....	3
2.3	Transportation Routes .....	3
2.4	Transportation Route Reporting .....	4
3.0	INCIDENT/ACCIDENT DATA .....	7
4.0	EVALUATION OF SHIPPING CAMPAIGNS .....	10
5.0	REFERENCES .....	10
6.0	POINTS OF CONTACT .....	11
7.0	ACRONYM LIST .....	11
8.0	DISTRIBUTION LIST .....	12

## **1.0 INTRODUCTION**

In February 1997, the U.S. Department of Energy (DOE) Nevada Operations Office (NV) 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). DOE/NV committed to several actions, including the preparation of an annual report, which summarizes waste shipments inbound to the Nevada Test Site (NTS) Radioactive Waste Management Sites (RWMSs) at Area 3 and Area 5, and outbound from the NTS. This document satisfies requirements with regard to reporting of low-level radioactive waste (LLW), mixed low-level radioactive waste (MLLW), and Polychlorinated Biphenyl contaminated low-level waste (PCB/LLW) transported to or from the NTS during fiscal year (FY) 2000.

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:

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

## **2.0 SUMMARY OF WASTE SHIPMENTS (FY 2000)**

During FY 2000, disposal at the NTS RWMSs included 645,092 cubic feet (ft<sup>3</sup>) of LLW from 13 generator sites and 1,041 ft<sup>3</sup> of MLLW from an on-site generator, for a total volume of 646,133 ft<sup>3</sup>. The waste was received at the two RWMSs in a total of 520 motor carrier shipments. In addition, there was one outbound shipment of PCB contaminated LLW from the NTS to the Toxic Substance Control Act (TSCA) incinerator located at the DOE East Tennessee Technology Park (ETTP) in Oak Ridge, Tennessee. Of these 521 shipments, none were involved in any vehicular accidents or incidents. The following sections present waste shipment information for FY 2000, including all LLW, MLLW, and PCB/LLW shipments to and from the NTS.

## 2.1 Waste Transporters (Motor Carriers)

Generally, generators utilize more than one motor carrier. The following table (Table 1) lists each waste generator and corresponding motor carrier(s) used for transport of LLW (and MLLW and PCB/LLW for Bechtel Nevada (BN)). Motor carriers are chosen selected by generators and operate in compliance with Title 49 Code Of Federal Regulations (CFR), Transportation and 40 CFR, Protection of Environment.

**Table 1. Waste Transporters**

<b>Generator/Code/Location</b>	<b>Motor Carrier(s) Used</b>
Bechtel Jacobs (BJ) Oak Ridge, TN	Kindrick Trucking Co.
Bechtel Nevada (BN) Las Vegas, NV  Onsite NTS and from Tonopah Test Range - LLW/MLLW  Outbound to ETTP - PCB/LLW	Bechtel Nevada  Hittman Transportation Services
Boeing North American- Rocketdyne (ETEC) Canoga Park, CA	M.P. Environmental
Fernald Environmental Management Project (FEMP) Cincinnati, OH	Landstar Ranger Fluid Transport Inc. R&R Trucking Incorporated (RRISS International)
General Atomics (GA) San Diego, CA	Tri-State Motor Transport N. G. Chemical, Inc.
International Technology (IT) Las Vegas, NV Onsite NTS - LLW	Bechtel Nevada
Lawrence Livermore National Laboratory (LLNL) Livermore, CA	Tri-State Motor Transport TAG Transport R&R Trucking Incorporated (RRISS International)  Landstar Ligon Hittman Transportation Services
Lovelace Respiratory Research Institute (LRRRI) Albuquerque, NM	Fluid Transport Inc.
Mound Plant (MEMP) Miamisburg, OH	Landstar Ranger A.J. Metler
Pantex Plant (PP) Amarillo, TX	Fluid Transport Inc. Triad Transport
Rocky Flats Environmental Technology Site (RFETS) Golden, CO	Colorado/Cast Transportation, Inc. Hittman Transport Services  R&R Trucking, Inc. A.J. Metler
Sandia National Laboratories (SNL/CA) Livermore, CA	Tri-State Motor Transport
Sandia National Laboratories (SNL/NM) Albuquerque, NM	Tri-State Motor Transport

## 2.2 Shipments and Volume

The following table (Table 2) presents a summary of all waste shipments received at or sent from the NTS during FY 2000. Since MLLW is accepted only from in-state (DOE/NV) sources, these shipments are included under BN, the operating contractor for the NTS.

**Table 2. Shipments and Volumes of Waste Sent To and From the NTS (FY 2000)**

Generator Code	Shipments by Quarter				Total Shipments	Total Volume (ft <sup>3</sup> )
	1st	2nd	3rd	4th		
<b>Inbound Shipments</b>						
BJ	0	0	23	37	60	10,920
BN - NTS & TTR, NV	0	2	4	6	12	6,770
BN - MLLW	1	0	0	1	2	1,041
ETEC	7	1	3	1	12	7,031
FEMP	1	9	32	55	97	130,345
GA	34	11	5	7	57	45,552
IT	0	0	1	1	2	253
LLNL	6	8	6	12	32	31,925
LRRRI	0	0	0	1	1	1,280
MEMP	10	7	21	18	56	79,641
PP	0	20	0	4	24	15,730
RFETS	25	42	59	29	155	305,747
SNL/CA	0	1	0	0	1	515
SNL/NM-	0	3	3	3	9	9,383
<b>SUBTOTAL (all inbound shipments to NTS)</b>	<b>84</b>	<b>104</b>	<b>157</b>	<b>175</b>	<b>520</b>	<b>646,133</b>
<b>Outbound Shipments</b>	<b>1st</b>	<b>2nd</b>	<b>3rd</b>	<b>4th</b>		
BN - PCB/LLW	0	0	0	1	1	4
<b>TOTAL (all inbound and outbound shipments)</b>	<b>84</b>	<b>104</b>	<b>157</b>	<b>176</b>	<b>521</b>	<b>646,137</b>

## 2.3 Transportation Routes

There were 11 out-of-state generators who shipped waste to the NTS for disposal in FY 2000. The transportation routes used by the out-of-state generators to the NTS are identified in Figure 1. Transportation routes were selected by the carrier (49 CFR 397.101). A majority of the IT (LLW) and BN (LLW and MLLW) shipments were generated on the NTS and transported to the RWMSs on highways that are not accessible to the general public. BN shipments from the Tonopah Test Range (TTR),

identified in Figure 2, traveled on U.S. Highway 95, a public highway. As a result of geographical considerations, the routes used by selected sources may overlap to a substantial degree (e.g., the routes used by the FEMP and MEMP, both located in Ohio, are essentially the same). Generators that use the same route as another generator with a point of origin farther from the NTS are identified as using the same Route ID as indicated in Table 3.

BN made one outbound shipment of PCB/LLW during FY 2000 from the NTS to the DOE/TSCA incinerator at Oak Ridge, TN. The total volume of the PCB/LLW shipped and incinerated was 4 ft<sup>3</sup>. No residual waste materials were returned to the NTS. The route used for this shipment is identified in Figure 1 (route J). Figures 1 and 2 provide national and regional views of transportation routes used. Table 3 route IDs correspond to Figures 1 and 2.

## **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 I-95 Interchange (“Spaghetti Bowl”) and across Hoover Dam, was substantially decreased in FY 2000. In an ongoing effort by DOE/NV to reduce the use of these particular routes, the DOE/NV Operations Office has engaged in extensive discussions with the generators regarding the avoidance of the “Spaghetti Bowl” and Hoover Dam, and generally persuaded generators toward compliance with this goal.

An additional obligation made by Secretary Richardson was the preparation of a quarterly report to the interested stakeholders disclosing which routes transporters used to reach the NTS.

In summary, these reporting mechanisms and agreements by DOE management to avoid certain geographic and urban areas have caused a major shift in the overall routing of inbound LLW to the NTS within fiscal year 2000. Table 4 is a summary report of the routes taken by generator during each fiscal quarter. Please note that due to on-site transfers, lack of routing disclosure by some transporters, and incomplete data from some transporters, there are some minor discrepancies in the number of shipments reported between Tables 2 and 4.

**Table 3. Transportation Route Identification and Corridor States**

<b>Generator Code</b>	<b>Route ID</b>	<b>Corridor States</b>
BJ	A	TN, KY, IL, MO, IA, NE, WY, UT, NV
BN - (from TTR to NTS)	B	NV
BN - (PCB/LLW from NTS to Oak Ridge, TN)	J	NV, UT, CO, KS, MO, IL, KY, TN
ETEC	K	CA, NV
FEMP	H C	OH, IN, IL, IA, NE, WY, UT, NV OH, IN, IL, MO, OK, TX, NM, AZ, CA, NV
GA	D	CA, NV
IT - (from TTR to NTS)	B	NV
LLNL	E I	CA, NV CA, NV
LRRI	F	NM, AZ, CA, NV
MEMP	H C	OH, IN, IL, IA, NE, WY, UT, NV OH, IN, IL, MO, OK, TX, NM, AZ, CA, NV
PP	F	TX, NM, AZ, CA, NV
RFETS	G	CO, UT, NV
SNL/CA	E I	CA, NV CA, NV
SNL/NM	F	NM, AZ, CA, NV



**Table 4. Shipment Summary of Routes by Quarter for FY 2000**

GENERATOR	1st	2nd	3rd	4th	ROUTES
BJ	0	0	25	33	Northern Route (I-80, US-93, US-6, US-95)
BN	1	2	4	6	On-site; Routing Not Applicable
ETEC	7	1	4	0	Southern Route (I-15, CA-127, NV-373, US-95)
FEMP	1	12	4	2	Southern Route (I-15, CA-127, NV-373, NV-160, US-95)
	0	0	31	47	Northern Route (I-80, US-93, US-6, US-95)
GA	34	11	5	7	Southern Route (I-15, CA-127, NV-373, US-95)
LLNL	0	0	3	1	Northern Route (I-580, I-205, I-15, I-80, US-95)
	0	4	1	3	Northern Route (I-580, I-205, CA-99, CA-58, I-15, US-95) thru Las Vegas Spaghetti Bowl
	6	5	0	3	Southern Route (I-15, CA-127, NV-373, US-95)
LRR1	0	0	0	1	Southern Route (I-40, US-68, US-95, NV-164, I-15, NV-160, US-95)
MEMP	0	0	4	9	Northern Route (I-80, US-93, US-6, US -95)
	10	3	2	8	Southern Route (I-40, US-95, NV-164, I-15, CA-127, NV-373, US-95) or
		2	12	0	Southern Route (I-40, US-95, NV-164, I-15, NV-160, US-95)
		8	1	0	Southern Route (I-40, US-95, over Hoover Dam and Thru Las Vegas Spaghetti Bowl)
PP	0	20	0	4	Southern Route (I-15, CA-127, NV-373, US-95)
RFETS	0	8	0	0	Southern Route (I-40, US-93, US-95) over Hoover Dam and Thru Las Vegas Spaghetti Bowl
	25	31	39	1	Las Vegas Route (I-15, US-95) thru Las Vegas Spaghetti Bowl
	0	0	0	16	Northern Route (I-80, US-93, US-6, US -95)
	0	7	14	5	Las Vegas Route (I-15, Cheyenne/Craig, US-95) Avoids Las Vegas Spaghetti Bowl
SNL/CA	0	1	0	0	Northern California Route (I-580, I-80, US-95)
SNL/NM	0	4	1	3	Southern Route (I-40, US-95, I-515, NV-146, I-15, NV-160, US-95)
	0	0	1	0	Southern Route (I-40, US-95, NV-164, I-15, CA-127, US-95)
<b>TOTALS</b>	84	119	151	149	

**NOTE:** The routes described above are the core routes used by the motor carriers that haul low-level waste to the Nevada Test Site. On a daily basis, variations of these routes are used by the motor carriers. Additional shipments of waste are received from on-site generators, and no routing report was necessary. Some shipments did not disclose routing.

### **3.0 INCIDENT/ACCIDENT DATA**

LLW, MLLW, and PCB/LLW shipments are made in accordance with all applicable DOE, Nuclear Regulatory Commission (NRC), United States Department of Transportation (DOT), EPA, and state and local regulations and requirements. Generators are responsible for evaluating and selecting motor carriers used for transportation of radioactive waste. Generators are also requested to notify the DOE/NV Assistant Manager of Environmental Management whenever a discrepancy, non-compliance, or inadequate performance is identified; or if a transportation incident or emergency situation occurs. BN personnel control waste receipt and disposal activities at the NTS and are responsible for notifying appropriate DOE personnel regarding any non-compliant or refused radioactive waste shipments. BN personnel also immediately notify generators in the event of any shipping paper discrepancies. For the purpose of this report, an incident is defined as a traffic related accident, a load shift, or a leaking package occurring during transportation. During FY 2000, there were no carrier vehicular accidents or incidents associated with any radioactive waste shipments.

Figure 1. National Transportation Routes for LLW and MLLW Carriers (as identified in Table 3)

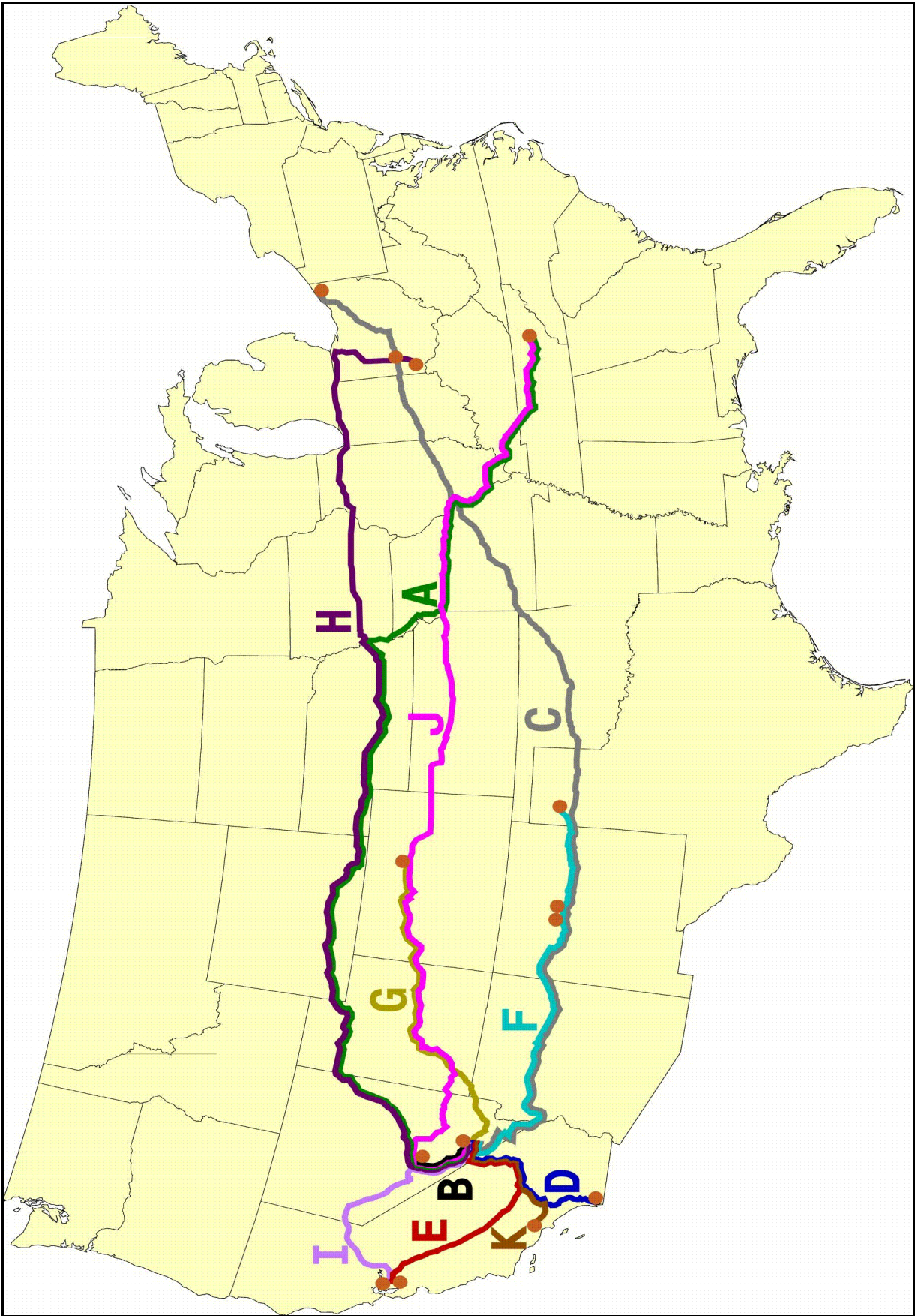
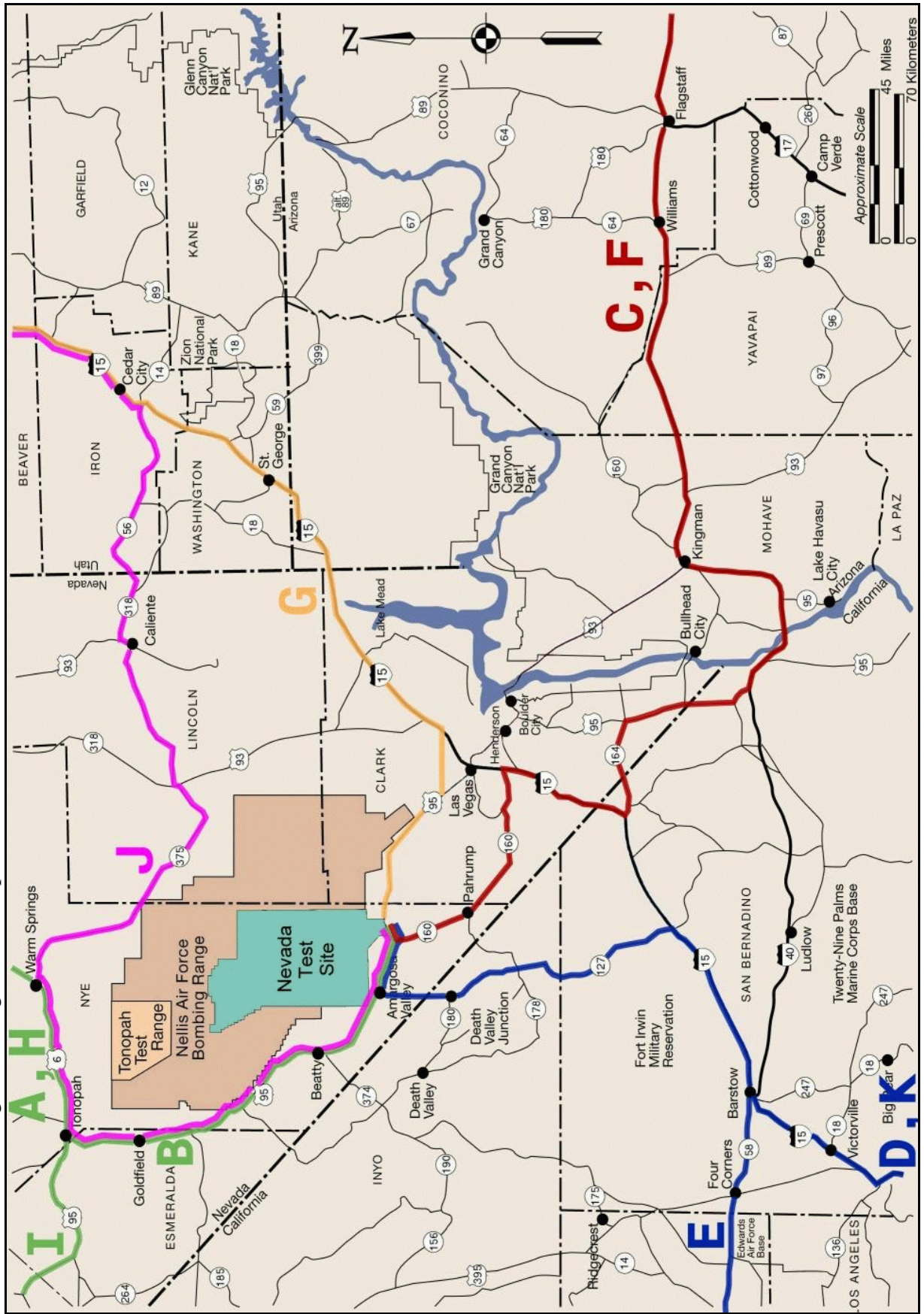




Figure 2. Regional Transportation Routes for LLW and MLLW Carriers (as identified in Table 3)



#### **4.0 EVALUATION OF SHIPPING CAMPAIGNS**

During FY 2000, the NTS received 520 shipments of LLW and MLLW at the Area 3 and Area 5 RWMSs for disposal. Bechtel Nevada made one shipment of PCB/LLW from the NTS to the DOE TSCA incinerator in Oak Ridge, Tennessee. None of the 521 shipments experienced any incidents. All generator shipping campaigns were considered successful.

#### **5.0 REFERENCES**

The primary sources of shipment information were records kept by the BN Waste Management Program, which manages the NTS RWMSs at Area 3 and Area 5. These records provided detailed information on each shipment of LLW and MLLW (dates received, sources, number and type of waste packages, volumes, weight, carrier, and final disposition of the shipments). In addition, incident and accident, and routing information was gathered by reviewing other BN and DOE/NV correspondence and through personal communication with DOE/NV managers, BN management and program personnel, representatives from the waste generator (source) facilities, and carrier personnel.

The following source documents are incorporated by reference:

- C 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.
- C 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.
- C U.S. Department of Transportation (DOT) Regulations, 49 CFR, "Transportation," Office of the Federal Register, National Archives and Records Administration, U.S. Government Printing Office, Washington, DC, 1998
- C U.S. Environmental Protection Agency (EPA) Regulations , 40 CFR, "Protection of the Environment", Office of the Federal Register, National Archives and Records Administration, U.S. Government Printing Office, Washington, DC, 1998

## 6.0 POINTS OF CONTACT

The following are points of contact for questions concerning the transportation of radioactive waste at the NTS or for requests for information relating to waste management and DOE/NV operations.

### TRANSPORTATION

E. Frank Disanza, Acting Transportation Manager  
Waste Management Division  
U.S. Department of Energy  
Nevada Operations Office  
P.O. Box 98518  
Las Vegas, NV 89193-8518  
(702) 295-5855

### WASTE MANAGEMENT

E. Frank DiSanza, Director  
Waste Management Division  
U.S. Department of Energy  
Nevada Operations Office  
P.O. Box 98518  
Las Vegas, NV 89193-8518  
(702) 295-5855

## 7.0 ACRONYM LIST

<b>BJ</b>	Bechtel Jacobs
<b>BN</b>	Bechtel Nevada
<b>CFR</b>	Code of Federal Regulations
<b>ft<sup>3</sup></b>	Cubic feet
<b>DOE/NV</b>	United States Department of Energy Nevada Operations Office
<b>DOT</b>	United States Department of Transportation
<b>ETEC</b>	Boeing North American-Rocketdyne
<b>FEMP</b>	Fernald Environmental Management Project
<b>FY</b>	Fiscal year
<b>GA</b>	General Atomics
<b>IT</b>	International Technologies
<b>LLNL</b>	Lawrence Livermore National Laboratory
<b>LLW</b>	Low-level radioactive waste
<b>LRRRI</b>	Lovelace Respiratory Research Institute
<b>MEMP</b>	Mound Plant
<b>MLLW</b>	Mixed low-level radioactive waste
<b>NRC</b>	Nuclear Regulatory Commission
<b>NTS</b>	Nevada Test Site
<b>PCBs</b>	Polychlorinated Biphenyl
<b>PP</b>	Pantex Plant
<b>RFETS</b>	Rocky Flats Environmental Technology Site
<b>RWMSs</b>	Radioactive Waste Management Sites
<b>SNL/CA</b>	Sandia National Laboratories of California
<b>SNL/NM</b>	Sandia National Laboratories of New Mexico
<b>TSCA</b>	Toxic Substance Control Act
<b>TTR</b>	Tonopah Test Range

## **8.0 DISTRIBUTION LIST**

U.S. Department of Energy  
Nevada Operations Office  
Technical Information Resource Center  
P.O. Box 98518  
Las Vegas, NV 89193-8518

U.S. Department of Energy  
Nevada Operations Office  
Public Reading Facility  
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

U.S. Department of Energy  
National Transportation Program - Albuquerque  
P.O. Box 5400  
Albuquerque, NM 87185