

4th QUARTER / ANNUAL TRANSPORTATION REPORT FY2016

Waste Shipments To and From the Nevada National Security
Site (NNS), Radioactive Waste Management Complex

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National Nuclear Security Administration
Nevada Field Office

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1.0 INTRODUCTION

This report satisfies the U.S. Department of Energy (DOE), National Nuclear Security Administration Nevada Field Office (NNSA/NFO) commitment to prepare a quarterly summary report of waste shipments to the Nevada National Security Site (NNS) Radioactive Waste Management Complex (RWMC) at Area 5. This report summarizes both the 4th quarter and fiscal year (FY) 2016 low-level radioactive waste (LLW), mixed low-level radioactive waste (MLLW) and classified non-radioactive (CNR) shipments. There were no shipments sent for offsite treatment from a NNS facility and returned to the NNS this quarter of FY2016.

Tabular summaries are provided which include the following:

- Sources of and carriers for LLW, MLLW and CNR shipments to and from the NNS;
- Number and external volume of LLW, MLLW and CNR shipments;
- Highway routes used by carriers; and
- Incident/accident data applicable to LLW, MLLW and CNR shipments.

In this report shipments are accounted for upon arrival at the NNS, while disposal volumes are accounted for upon waste burial. Volume reports showing cubic feet (ft³) generated using the Low-Level Waste Information System may vary slightly due to rounding conventions for volumetric conversions from cubic meters to cubic feet.

2.0 SUMMARY OF WASTE SHIPMENTS AND VOLUMES DISPOSED

Total LLW and MLLW Received from Offsite Generators

A total of 270,508 ft³ of LLW and MLLW was disposed at the NNS by 15 approved radioactive waste generators in 306 shipments. These shipments were transported using 11 approved motor carriers (including government vehicles).

Total NNS Onsite LLW/MLLW

A total of 15,312 ft³ of LLW was disposed by two approved NNS onsite radioactive waste generators in 16 onsite transfers. Government vehicles were used for these transfers.

Total CNR Received from Offsite Generators

A total of 878 ft³ of CNR was disposed at the NNS by two approved waste generators in three shipments. These shipments were transported using two approved motor carriers.

Table 1 provides a summary of inbound (offsite and onsite) and non-radioactive classified shipments. Table 2 provides a list of approved waste generators that shipped to or on the NNS in the 4th quarter of FY2016.

Table 1

NNSS Inbound, Onsite, and Classified Non-Radioactive Shipment Summary for 4th Quarter of FY2016

Inbound	Offsite Generators	NNSS Generators	Approved Carriers	Shipments	Volume ft³
LLW / MLLW (offsite)	15	0	11	306	270,508
LLW / MLLW (onsite)	0	2	1	16	15,312
Classified Non-Radioactive	1	1	2	3	878

Table 2

Approved Generators Shipping To/On the NNSS in 4th Quarter of FY2016

	GENERATOR NAME	GENERATOR CODE
1	Advanced Mixed Waste Treatment Project	AM
2	Battelle Energy Alliance	NE
3	Consolidated Nuclear Security, LLC Pantex	PX
4	Consolidated Nuclear Security, LLC Y-12	BW
5	Duratek / Energy Solutions	DR
6	Idaho National Laboratory	IN
7	Lawrence Livermore National Laboratory	LL
8	Los Alamos National Laboratory	LA
9	National Security Technologies	DP
10	Navarro	IT
11	Oak Ridge Reservation	OR
12	PermaFix (M&EC)	PF
13	Sandia National Laboratory	SA
14	UT-Battelle / Oak Ridge National Laboratory	OL
15	Northwind Solutions, LLC	FW

2.1 Waste Transporters (Motor Carriers)

Motor carriers operate in compliance with Title 49 Code of Federal Regulations (CFR), "Transportation," and are selected by the waste generator. Generators often use multiple motor carriers during the year to facilitate their shipments. Table 3 provides a list of the approved carriers used to transport LLW, MLLW and CNR shipments to the NNSS. Government trucks were used for the shipment from the LLNL site and for all of the onsite shipments from Navarro and NSTec.

No shipments bound for the NNSS were transported via intermodal (rail/highway) conveyance, also referred to as transloading, in the 4th quarter of FY2016.

Table 3
Approved Motor Carriers Used in 4th Quarter of FY2016

	APPROVED MOTOR CARRIER	CARRIER CODE
1	AJ METLER (dba SPECIALTY TRANSPORT, INC.)	MAJH
2	CAST TRANSPORTATION	COLO
3	FLUID TRANSPORTS, INC.	FLAI
4	GOVERNMENT VEHICLE	GT+
5	HITTMAN TRANSPORT	HITT
6	HUBBARD TRUCKING	HTAL
7	INTERSTATE VENTURES	ITSV
8	M.P. ENVIRONMENTAL SERVICES, INC.	MPES
9	R&R TRUCKING, INC.	RRUK
10	SAVAGE LOGISTICS	SVGH
11	TRI-STATE MOTOR TRANSIT	TSMT

2.2 Shipments

Table 4 provides a summary of all LLW and MLLW offsite shipments received at NNSS. Table 5 provides a summary of NNSS onsite transfers of LLW and MLLW. Table 6 provides a summary of all CNR shipments received at NNSS. The three tables include a summary for FY2016 in the “Total” column.

**Table 4
Offsite Shipments of LLW and MLLW Transported to the NNSS**

Offsite Inbound Shipments Generator, State	Shipments by Quarter				
	1 st	2 nd	3 rd	4 th	Total
Aberdeen Proving Ground, MD	2	0	3	0	5
Advanced Mixed Waste Treatment Project, ID	9	22	10	18	59
Argonne National Laboratory, IL	0	2	4	0	6
Battelle Energy Alliance, ID	0	8	15	12	35
Brookhaven National Laboratory, NY	0	1	0	0	1
Consolidated Nuclear Security, LLC – Pantex, TX	0	1	1	1	3
Consolidated Nuclear Security, LLC – Y-12 Plant, TN	19	29	22	34	104
Duratek/Energy Solutions, TN	3	0	0	5	8
Idaho National Laboratory, ID	6	21	14	25	66
Lawrence Livermore National Laboratory, CA	3	3	1	2	9
Los Alamos National Laboratory, NM	1	10	15	15	41
National Security Technologies, NV	0	1	0	0	1
Navarro, NV	0	0	0	1	1
Nuclear Fuel Services, TN	13	7	5	0	25
Oak Ridge Reservation, TN	18	28	108	87	241
PermaFix (M&EC), TN, WA, FL	28	24	25	94	171
Portsmouth Gaseous Diffusion Plant, OH	128	139	18	0	285
Sandia National Laboratories, NM	4	1	6	4	15
Savannah River Site, SC	0	2	4	0	6
UT-Battelle/Oak Ridge National Laboratory, TN	3	4	6	2	15
Northwind Solutions, LLC, TN	4	2	1	6	13
Total Shipments	241	305	258	306	1,110

**Table 5
 NNSS Onsite Transfers of LLW and MLLW**

Onsite Transfers	Shipments by Quarter				
Generator, State	1st	2nd	3rd	4th	Total
National Security Technologies LLC, NV	1	3	2	3	9
Navarro, NV	0	2	9	13	24
Total Transfers	1	5	11	16	33

**Table 6
 Classified Non-Radioactive Shipments Transported to the NNSS**

Offsite Inbound Shipments	Shipments by Quarter				
Generator, State	1st	2nd	3rd	4th	Total
National Security Technologies, NV	0	1	0	2	3
PermaFix (M&EC), TN, WA, FL	1	0	1	0	2
Sandia National Laboratories, NM	2	1	2	1	6
Total Transfers	3	2	3	3	11

2.3 Transportation Route Reporting

The NNSA/NFO continues to engage in discussions with waste generators regarding avoiding the Las Vegas Metropolitan Area. The NNSS Waste Acceptance Criteria includes wording requiring generators to notify their carriers to avoid this area and to select routes which minimize radiological risk.

Due to the events of September 11, 2001, tractor trailers continue to be restricted from travel near the Hoover Dam. The NNSS WAC states, "Waste transportation to the NNSS, regardless of DOT classification, shall avoid the Hoover Dam Bypass Bridge and Las Vegas".

Quarterly and annual transportation reports may be found on the Internet at <http://www.nnss.gov/pages/programs/RWM/Reports.html>

The following two pages provide details and a graphic depiction of waste shipment routes traveled to the NNSS from July 1, 2016 to September 30, 2016.

LOW-LEVEL, MIXED LOW-LEVEL & CLASSIFIED NON-RADIOACTIVE WASTE SHIPMENTS TO THE NEVADA NATIONAL SECURITY SITE

FOURTH QUARTER REPORT, FY2016 (JULY, AUGUST, SEPTEMBER 2016)

RouteType	Route Description	Route Legend	Origin State>>	CA	ID	ID	ID	NM	NM	NV	NV	TN	TN	TN, WA, FL	TN	TN	TN	TX
			Total Shipments by Route	Lawrence Livermore National Laboratory	Advanced Mixed Waste Treatment Project	Battelle Energy Alliance	Idaho National Laboratory	Sandia National Laboratory	Los Alamos National Laboratory	National Security Technologies	Navarro	Consolidated Nuclear Security Y-12 Plant	Duratek / Energy Solutions	Materials & Energy Corporation (M&EC) Perma-Fix	Oak Ridge Reservation	Oak Ridge National Laboratory	Northwind Solutions, LLC	Consolidated Nuclear Security Pantex Plant
CALIFORNIA	I-15, CA-127, CA-178, NV-372, NV-160, US-95		96	2										94				
SOUTHERN	I-40, US-93, AZ-68, NV-163, US-95, NV-164, I-15, NV-160, US-95		98						5			21	1		66		5	
SOUTHERN	I-40, US-95, NV-164, I-15, NV-160, US-95		50					5	7			13			21	2	1	1
SOUTHERN	I-40, US-95, NV-164, I-15, CA-127, NV-372, NV-160, US-95		3						3									
NORTHERN	US-50, US-6/50, US-6, US-95		4										4					
NORTHERN	US-6, US-95 (TTR)		1								1							
NORTHERN	I-80, US-93-ALT, US-6, US-95		4			2				2								
NORTHERN	US-93, US-6, US-95		53		18	10	25											
Total Shipments by Generator>>>			309	2	18	12	25	5	15	2	1	34	5	94	87	2	6	1
Total Volume (ft ³) by Generator>>>			271,386	5,368	11,436	8,137	11,169	2,247	12,426	638	686	40,831	988	82,177	90,173	1,791	2,674	645

*There were no transloaded shipments this quarter



3.0 INCIDENT/ACCIDENT DATA

For the purpose of this report, incidents and accidents are defined as:

- **Incident:** Any unintentional release of hazardous material from a package during transportation, load shift or any occurrence during transportation in which any of the circumstances identified in 49 CFR 171.15(b) occurs. (ANSI N14.27)
- **Accident:** An occurrence involving a commercial motor vehicle operating on a highway in interstate or intrastate commerce which results in a fatality; bodily injury to a person who, as a result of the injury, immediately receives medical treatment away from the scene of the accident; or one or more motor vehicles incurring disabling damage as a result of the accident, requiring the motor vehicles to be transported away from the scene by a tow truck or other motor vehicle. (49 CFR 390.5(1))

The Department of Energy's (DOE) Office of Environmental Management (EM), sites, and carriers are dedicated to ensuring an appropriate response to all offsite transportation events involving DOE radioactive materials. In a memo to EM sites on May 22, 2006, the Chief Operating Officer, EM-3, established a requirement to report any type of transportation accident/incident to EM-HQ. This reporting is consistent with DOE Manual 460.2-1, and will help to ensure:

- Receiving timely notification of all off-site transportation events to assure adequate response resources are assigned;
- Notifying appropriate field response personnel and/or resources (including field sites, RAP teams, and state and tribal contacts) if they have not already been engaged; and
- Having all potentially involved personnel prepared to respond to inquiries from the media, elected officials, or the public.

Waste generators are instructed to notify the NNSA/NFO Assistant Manager of Environmental Management whenever a discrepancy, non-compliance, or inadequate performance is identified; or if a transportation incident or emergency situation occurs.

NSTec, a contractor to the NNSA/NFO, controls NNS waste receipt and disposal activities and is responsible for notifying appropriate personnel regarding any non-compliant or refused shipments. NSTec personnel also immediately notify generators of any shipping discrepancies.

There were no transportation incidents in the 4th quarter of FY2016.

4.0 EVALUATION OF SHIPPING CAMPAIGNS

This section contains an evaluation summary of the annual shipping campaigns with respect to the significance of the packaging or transportation incidents reported in Section 3.0. Waste generators must ensure that waste is packaged and transported in a safe and compliant manner as detailed in the NNSWAC Waste Acceptance Criteria (WAC) and U.S. Department of Transportation regulations. Generators and their contracted shipping carriers must be diligent with regard to all requirements including packaging, routing, and shipping documentation.

The NNSWAC Radioactive Waste Acceptance Program (RWAP) provides oversight of NNSWAC waste generators for compliance with Department of Transportation regulations and the NNSWAC Waste Acceptance Criteria including Section 6.0, Waste Transportation and Receipt Information. All generator performance anomalies are tracked and trended for deficient conditions.

Findings are issued by RWAP personnel, formerly (Corrective Action Requests (CARs)), to identify, track, and resolve deficiencies that violate the NNSWAC — including failure to follow Department of Transportation requirements. Observations are also issued by RWAP personnel for conditions that represent a weakness in a waste generator's quality assurance or waste certification program that, if left uncorrected, could result in a condition adverse to quality. For the purposes of this report, only transportation and packaging related Findings will be reported.

There were two transportation associated Findings issued in this reporting period:

- On September 15, 2016, Finding I-1945 was issued to M&EC PermaFix because waste package 108054 from shipment PFM16021 was missing required waste codes. On September 8, 2016, the M&EC PermaFix waste certification official reported that waste package 108054 was missing California Hazardous Waste Code CA-181 for other inorganic solid waste. Section 3.1.4 of the NNSWAC states in part, "State of Nevada regulations require that waste regulated as hazardous in the state of generation shall be regulated as hazardous when brought into the state of Nevada . . ."
- On September 28, 2016, Finding I-1963 was issued to Consolidated Nuclear Security, LLC Y-12, due to receipt of a breached waste package. No waste or radioactivity leaked from the waste package due to the breach. On September 27, 2016, waste package 604909 from shipment BWL16102, which was a large milling machine in a soft-sided package, had a piece of piping breach the top of the soft-sided packaging during transport. Section 3.2, "Waste Package Criteria", of the NNSWAC states in part, "Waste packages **shall** be capable of withstanding the stresses associated with the loading, handling, stacking, and shipping of the package"

For the FY2016 period, a total of eight transportation related Findings were issued. Each of the Findings are detailed in section 4.0 of the respective FY2016 quarterly transportation reports listed below:

- DOE/NV/25946--2728, 1st Quarter Transportation Report FY2016 had two Findings related to lack of proof that drivers were U.S. citizens by two separate waste generators (LANL & UCOR)
- DOE/NV/25946--2813, 2nd Quarter Transportation Report FY2016 had three Findings, one related to lack of proof that a driver was a U.S. citizen(Oak Ridge Reservation) and two related to receipt of breached waste packages (Portsmouth & LANL)
- DOE/NV/25946--2928, 3rd Quarter Transportation Report FY2016 had one finding related to waste not being properly characterized (NFS).
- DOE/NV/25946--3055, 4th Quarter Transportation Report FY2016 had two findings, one related to missing hazardous waste codes (M&EC PermaFix) and one related to receipt of a breached waste package (CNS Y-12)

5.0 REFERENCES

Shipment information is recorded at the NNSS Area 5 Radioactive Waste Management Site by NSTec Waste Management Program personnel. These records provide detailed information on each LLW, MLLW and CNR shipment, including the date received, generator, package number and type, volume, weight, carrier, and final disposition. In addition, incident and accident information is collected from NSTec and NNSA/NFO correspondence and personal communications with NNSA/NFO managers, NSTec personnel, waste generators, and carrier personnel. Route information is collected from the NNSA/NFO quarterly routing reports published by NNSA/NFO.

The following source documents are incorporated by reference:

- U.S. Department of Energy, Nevada Operations Office, "Final Site-Wide Environmental Impact Statement for the Continued Operation of the Department of Energy/National Nuclear Security Administration Nevada National Security Site and Offsite Locations in the State of Nevada," DOE/EIS-0426, Las Vegas, Nevada, February 2013.
- U.S. Department of Energy, Nevada Operations Office, "Record of Decision (ROD) for the Continued Management, Operations, and Activities of the Nevada National Security Site (NNSS) and Offsite Locations in the State of Nevada," EIS-0426 Record of Decision, Las Vegas, Nevada, December 2014.
- U.S. Department of Transportation 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, 2012.

6.0 POINT OF CONTACT

Please contact the following person with questions regarding waste transportation, waste management, or NNSA/NFO operations.

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7.0 ACRONYM LIST

ft³	Cubic Feet
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
FY	Fiscal Year
LLW	Low-Level Radioactive Waste
MLLW	Mixed Low-Level Radioactive Waste
NNSA/NFO	National Nuclear Security Administration, Nevada Field Office
NSTec	National Security Technologies, LLC
NNSS	Nevada National Security Site
RWMS	Radioactive Waste Management Site

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