

4th QUARTER / ANNUAL TRANSPORTATION REPORT FY2017

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

This report was prepared for:
**U.S. Department of Energy
Office of Environmental Management
Nevada Program**

By:
**National Security Technologies, LLC
Las Vegas, Nevada**

October 2017



**Work performed under contract number:
DE-AC52-06NA25946**

Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof.

Available for sale to the public, in paper, from:

U.S. Department of Commerce
National Technical Information Service
5301 Shawnee Road
Alexandria, VA 22312
Phone: 800.553.6847
Fax: 703.605.6900
E-mail: orders@ntis.gov
Online Ordering: <http://www.ntis.gov/help/order-methods/>

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

Available for a processing fee to the 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

Table of Contents

1.0	INTRODUCTION	1
2.0	SUMMARY OF WASTE SHIPMENTS AND VOLUMES DISPOSED	1
2.1	Waste Transporters (Motor Carriers).....	3
2.2	Shipments	4
2.3	Transportation Route Reporting.....	5
3.0	INCIDENT/ACCIDENT DATA.....	8
4.0	EVALUATION OF SHIPPING CAMPAIGNS.....	11
5.0	REFERENCES.....	12
6.0	POINTS OF CONTACT	12
7.0	ACRONYM LIST	13
8.0	DISTRIBUTION LIST	13

This page intentionally left blank

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 (NNSS) Radioactive Waste Management Complex (RWMC) at Area 5. This report summarizes the 4th quarter of fiscal year (FY) 2017 low-level radioactive waste (LLW), mixed low-level radioactive waste (MLLW), which includes classified LLW and MLLW, classified non-radioactive (CNR) and classified non-radioactive hazardous (CNRH) shipments. There were no shipments sent for offsite treatment from a NNSS facility and returned to the NNSS this quarter of FY2017.

Tabular summaries are provided which include the following:

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

In this report shipments are accounted for upon arrival at the NNSS, 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 conversions from cubic meters to cubic feet.

Shipments are transported by motor carriers that are either identified on the “DOE Motor Carrier Evaluation Program (MCEP)” list, have been evaluated in a manner similar to the MCEP process or are government vehicles. Government vehicles are not evaluated using the MCEP process, but are fully compliant with all Department of Transportation requirements.

2.0 SUMMARY OF WASTE SHIPMENTS AND VOLUMES DISPOSED

Total LLW and MLLW Received from Offsite Generators

A total of 327,707 ft³ of LLW and MLLW was disposed at the NNSS by 16 approved radioactive waste generators in 327 shipments. These shipments were transported using eight MCEP approved motor carriers and government vehicles.

Total NNSS Onsite LLW

A total of 343 ft³ of LLW was disposed by one approved NNSS onsite radioactive waste generator in four onsite transfers. Government vehicles were used for these transfers.

Total CNR/CNRH Received from Offsite Generators

A total of 0 ft³ of CNR/CNRH was disposed at the NNSS by zero approved waste generators in zero shipments.

Table 1 provides a summary of inbound (offsite and onsite) radioactive and non-radioactive classified shipments. Table 2 provides a list of approved waste generators that shipped to or on the NNSS in the 4th quarter of FY2017.

Table 1
NNSS Inbound, Onsite, and Classified Non-Radioactive Shipment Summary for 4th Quarter of FY2017

Inbound	Offsite Generators	NNSS Generators	Approved Carriers	Shipments	Volume ft ³
LLW / MLLW (offsite) ^a	16	0	8	327 ^b	327,707
LLW (onsite) ^a	0	1	N/A	4	343
Classified Non-Radioactive	0	0	0	0	0

^a – Government vehicles were used for two LLNL LLW shipments, one LLNL MLLW shipment and four NSTec onsite transfers

^b – The total of 327 shipments includes 117 classified shipments (all LLW)

Table 2
Approved Generators Shipping To/On the NNSS in 4th Quarter of FY2017

	GENERATOR NAME	GENERATOR CODE
1	Aberdeen Proving Ground	AP
2	Advanced Mixed Waste Treatment Project	AM
3	Battelle Energy Alliance	NE
4	Brookhaven National Laboratory	BR
5	CH2M Hill B&W West Valley, LLC	WV
6	Consolidated Nuclear Security, LLC Y-12	BW
7	Duratek / Energy Solutions	DR
8	Fluor Idaho	IN
9	Lawrence Livermore National Laboratory	LL
10	Los Alamos National Laboratory	LA
11	National Security Technologies	DP
12	Oak Ridge Reservation	OR
13	PermaFix	PF
14	Portsmouth Gaseous Diffusion Plant	PO
15	Sandia National Laboratory	SA
16	UT-Battelle / Oak Ridge National Laboratory	OL
17	Wastren Advantage, Inc.	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.

No shipments bound for the NNSS were transported via intermodal (rail/highway) conveyance, also referred to as transloading, in the 4th quarter of FY2017.

Table 3
Approved Motor Carriers Used in 4th Quarter of FY2017

	APPROVED MOTOR CARRIER	CARRIER CODE
1	AJ METLER (dba SPECIALTY TRANSPORT, INC.)	MAJH
2	BUFFALO FUEL CORPORATION	BUFI
3	CAST TRANSPORTATION	COLO
4	HITTMAN TRANSPORT	HITT
5	HUBBARD TRUCKING	HTAL
6	INTERSTATE VENTURES	ITSV
7	TRI-STATE MOTOR TRANSIT	TSMT
8	WILCOX TRUCK LINES, INC.	WCXL
	GOVERNMENT VEHICLE*	GT+

* Government vehicles transporting waste shipments are fully DOT compliant

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 FY2017 in the “Total” column.

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

Offsite Inbound Shipments	Shipments by Quarter				
Generator, State	1st	2nd	3rd	4th	Total
Aberdeen Proving Ground, MD	2	0	0	8	10
Advanced Mixed Waste Treatment Project, ID	14	21	24	29	88
Argonne National Laboratory, IL	0	0	1	0	1
Battelle Energy Alliance, ID	15	9	24	12	60
Brookhaven National Laboratory, NY	0	0	0	1	1
CH2M Hill West Valley, LLC, NY	4	4	4	24	36
Consolidated Nuclear Security, LLC – Pantex, TX	1	2	1	0	4
Consolidated Nuclear Security, LLC – Y-12 Plant, TN	23	36	21	23	103
Duratek/Energy Solutions, TN	1	5	15	95	116
Fluor Idaho, ID	16	18	36	23	93
General Atomics, CA	1	0	0	0	1
Lawrence Livermore National Laboratory, CA	4	2	8	8	22
Los Alamos National Laboratory, NM	13	12	14	4	43
National Security Technologies, NV	1	0	1	0	2
Oak Ridge Reservation, TN	17	33	32	40	122
PermaFix, TN, WA, FL	9	11	121	22	163
Portsmouth Gaseous Diffusion Plant, OH	31	36	29	25	121
Sandia National Laboratories, NM	1	2	1	3	7
UT-Battelle/Oak Ridge National Laboratory, TN	1	2	2	3	8
Wastren Advantage, Inc., TN	0	4	5	7	16
Total Shipments	154	197	339	327	1,017

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	1	3	4	9
Navarro, NV	0	4	0	0	4
Total Transfers	1	5	3	4	13

Table 6
Classified Non-Radioactive Shipments Transported to the NNSS

Offsite Inbound Shipments	Shipments by Quarter				
Generator, State	1st	2nd	3rd	4th	Total
Lawrence Livermore National Laboratory, CA	0	0	1	0	1
National Security Technologies LLC, NV	0	0	2	0	2
PermaFix, TN, WA, FL	2	0	0	0	2
Consolidated Nuclear Security, LLC – Pantex, TX	0	0	2	0	2
Sandia National Laboratories, NM	0	1	0	0	1
Total Transfers	2	1	5	0	8









2.3 Transportation Route Reporting

The longstanding DOE policy is to avoid shipments travelling through the I-15/US-95 interchange. The NNSS Waste Acceptance Criteria (NNSSWAC) includes wording requiring generators to notify their carriers to avoid this area and to select routes which minimize radiological risk.

Shipments continue to be restricted from travel near the Hoover Dam. The NNSSWAC states, “Waste transportation to the NNSS, regardless of DOT classification, shall avoid the Hoover Dam Bypass Bridge.”

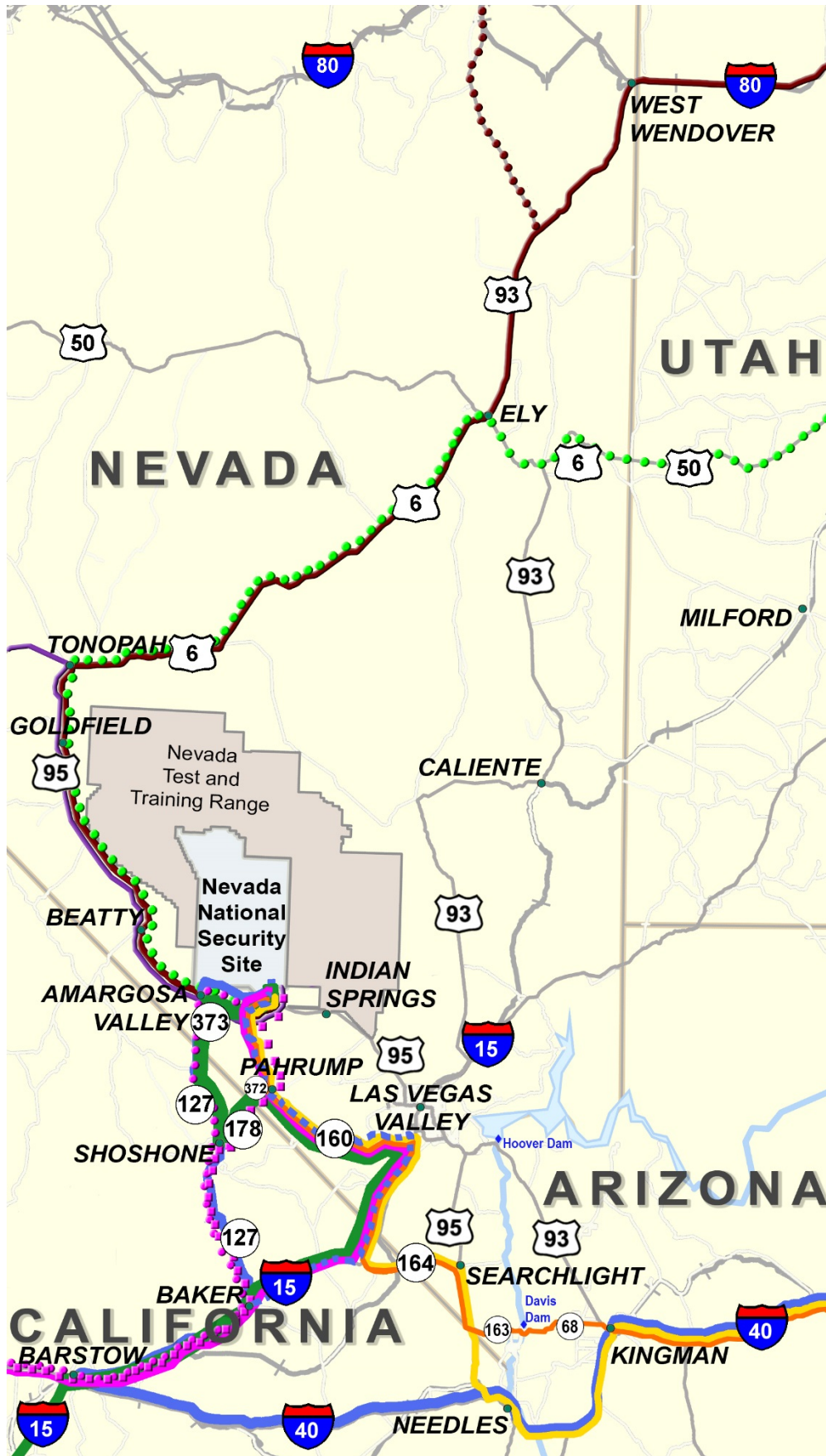
Quarterly and annual transportation reports may be found on the Internet at <http://www.nnss.gov/pages/programs/RWM/Reports.html>

The following four pages provide details and a graphic depiction of waste shipment routes traveled to the NNSS for the 4th Quarter of FY2017 (July 1, 2017 to September 30, 2017) and an annual summary for FY2017.

LOW-LEVEL, MIXED LOW-LEVEL & CLASSIFIED NON-RADIOACTIVE WASTE SHIPMENTS TO THE NEVADA NATIONAL SECURITY SITE																		
FOURTH QUARTER REPORT, FY 2017 (JULY, AUGUST, SEPTEMBER 2017)																		
RouteType	Route Description	Route Legend	Origin State>>	CA	ID	ID	ID	MD	NM	NM	NY	NY	OH	TN	TN, WA, FL	TN	TN	TN
			Total Shipments by Route	Lawrence Livermore National Laboratory	Advanced Mixed Waste Treatment Project	Battelle Energy Alliance	Fluor Idaho	Aberdeen Proving Ground	Sandia National Laboratory	Los Alamos National Laboratory	Brookhaven National Laboratory	CH2M Hill BWXT West Valley, LLC	Portsmouth Gaseous Diffusion Plant	Consolidated Nuclear Services Y-12 Plant	Materials & Energy Corporation (M&EC) Perma-Fix	Duratek / Energy Solutions	Oak Ridge Reservation (UCOR)	Oak Ridge National Laboratory
CALIFORNIA	I-15, CA-127, NV-373, US-95		4	4														
CALIFORNIA	I-15, NV-160, US-95		2	2														
SOUTHERN	I-40, US-93, AZ-68, NV-163, US-95, NV-164, I-15, NV-160, US-95		172			1		3					24	17	5	90	28	4
SOUTHERN	I-40, US-95, NV-164, I-15, NV-160, US-95		53			4		2	3	4	1		1	6	11	4	12	2
SOUTHERN	I-40, I-15, NV-160, US-95		2	2														
NORTHERN	I-80, US-95		2												2			
NORTHERN	I-80, US-93-ALT, US-6, US-95		38		3	1	5	3				24				1		1
NORTHERN	US-93, US-6, US-95		54		26	6	18								4			
Total Shipments by Generator>>>			327	8	29	12	23	8	3	4	1	24	25	23	22	95	40	3
Total Volume (ft ³) by Generator>>>			327,707	3,315	25,133	10,238	9,064	4,514	2,468	3,496	415	23,794	40,238	33,442	9,878	114,916	36,828	3,956
*There were no transloaded shipments this quarter																		



LOW-LEVEL, MIXED LOW-LEVEL & CLASSIFIED NON-RADIOACTIVE WASTE SHIPMENTS TO THE NEVADA NATIONAL SECURITY SITE																								
ANNUAL REPORT FY 2017																								
RouteType	Route Description	Route Legend	Origin States>>	CA	CA	ID	ID	ID	IL	MD	NM	NM	NV	NV	NY	NY	OH	TN	TN, WA, FL	TN	TN	TN	TN	TX
			Total Shipments by Route	General Atomics	Lawrence Livermore National Laboratory	Advanced Mixed Waste Treatment Project	Battelle Energy Alliance	Fluor Idaho	Argonne National Laboratory	Aberdeen Proving Ground	Sandia National Laboratory	Los Alamos National Laboratory	National Security Technologies	Navarro	Brookhaven National Laboratory	CH2M Hill BWXT West Valley, LLC	Portsmouth Gaseous Diffusion Plant	Consolidated Nuclear Services Y-12 Plant	Materials & Energy Corporation (M&EC) Perma-Fix	Duratek / Energy Solutions	Oak Ridge Reservation (UCOR)	Oak Ridge National Laboratory	Wastren Advantage, Inc.	Consolidated Nuclear Services Pantex Plant
CALIFORNIA	I-15, CA-127, NV-373, US-95	●●●	110		12														98					
CALIFORNIA	I-15, CA-127, CA-178, NV-372, NV-160, US-95	■ ■ ■	3		2														1					
CALIFORNIA	I-15, NV-160, NV-372, CA-178, CA-127, NV-373, US-95	■	1		1																			
CALIFORNIA	I-15, NV-160, US-95	■	18	1	6														6	5				
SOUTHERN	I-40, US-93, AZ-68, NV-163, US-95, NV-164, I-15, NV-160, US-95	■	413				1			4		5					117	81	11	103	81	1	9	
SOUTHERN	I-40, US-95, NV-164, I-15, NV-160, US-95	■	191				15			2	8	36			1		4	22	41	5	41	3	7	6
SOUTHERN	I-40, I-15, NV-160, US-95	■ ■ ■	2		2																			
SOUTHERN	I-40, I-15, CA-127, NV-373, US-95	■	2									2												
NORTHERN	US-50, US-6/50, US-6, US-95	● ● ●	2							1										1				
NORTHERN	I-80, US-95	■	2																2					
NORTHERN	I-80, US-93-ALT, US-6, US-95	■	120			19	7	44	1	3			4			36				2		4		
NORTHERN	US-93, US-6, US-95	● ● ●	161			69	37	49											6					
ON-SITE	On-Site Shipments	N/A	13										9	4										
Total Shipments by Generator>>>			1,038	1	23	88	60	93	1	10	8	43	13	4	1	36	121	103	165	116	122	8	16	6
Total Volume (ft³) by Generator>>>			907,849	630	21,600	70,536	35,217	26,842	1,798	5,420	6,117	32,283	2,634	2,253	415	39,033	176,546	138,769	90,197	127,161	106,113	6,107	13,236	4,946



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 October 17, 2016, the Director, DOE Office of Packaging and Transportation and the NNSA/NFO Assistant Manager for Environmental Management, established notification criteria to provide additional clarity to the requirements in the NNSS Waste Acceptance Criteria. 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 Nevada Field Office 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 NNSS waste receipt and disposal activities and is responsible for notifying appropriate personnel regarding shipping discrepancies, incidents or accidents.

There were no transportation incidents or accidents in the 4th quarter of FY17.

For the FY2017 period, one transportation related incident and one transportation related accident were noted. The incident and accident details are in section 3.0 of the respective FY2017 quarterly transportation reports and are summarized here:

- DOE/NV/25946--3103, 1st Quarter Transportation Report FY2017 had no transportation related incidents or accidents.
- DOE/NV/25946--3180, 2nd Quarter Transportation Report FY2017 had no transportation related incidents or accidents.
- DOE/NV/25946--3279, 3rd Quarter Transportation Report FY2017 had one incident, for a shipment having the incorrect paperwork, and one accident where the shipment vehicle struck an abandoned vehicle.
- DOE/NV/25946--3397, 4th Quarter Transportation Report FY2017 had no transportation related incidents or accidents.

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/accidents 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 NNSSWAC 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 NNSS Radioactive Waste Acceptance Program (RWAP) provides oversight of NNSS waste generators for compliance with Department of Transportation regulations and the NNSSWAC including Section 6.0, Waste Transportation and Receipt Information. All RWAP identified findings and observations on waste generator performance are tracked and trended.

Findings are issued by RWAP personnel to identify, track, and resolve deficiencies that violate the NNSSWAC Revision 16-00 — 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 no transportation related findings or observations in the 4th quarter of FY2017.

For the FY2017 period, one transportation related Finding was issued. The Finding details in section 4.0 of the respective FY2017 quarterly transportation reports and are summarized here:

- DOE/NV/25946--3103, 1st Quarter Transportation Report FY2017 had no Findings issued.

- DOE/NV/25946--3180, 2nd Quarter Transportation Report FY2017 had no Findings issued.
- DOE/NV/25946--3279, 3rd Quarter Transportation Report FY2017 had one Finding issued for a shipment having the incorrect paperwork.
- DOE/NV/25946--3397, 4th Quarter Transportation Report FY2017 had no Findings issued.

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, discrepant conditions and final disposition.

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 or waste management.

Robert Boehlecke, Program Manager
 U.S. Department of Energy
 EM Nevada Program
 P.O. Box 98518
 Las Vegas, NV 89193-8518
 (702) 295-2099

7.0 ACRONYM LIST

ft³	Cubic Feet
CFR	Code of Federal Regulations
CNR	Classified Non-Radioactive
CNRH	Classified Non-Radioactive Hazardous
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
NNSSWAC	Nevada National Security Site Waste Acceptance Criteria
NSTec	National Security Technologies, LLC
NNSS	Nevada National Security Site
RWMC	Radioactive Waste Management Complex

8.0 DISTRIBUTION LIST

U.S. Department of Energy
National Nuclear Security Administration
Nevada Field 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