

THIRD QUARTER TRANSPORTATION REPORT FISCAL YEAR 2021

**Waste Shipments to and from the Nevada National Security Site,
Radioactive Waste Management Complex**

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

By:
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TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS	v
1.0 INTRODUCTION.....	1
2.0 SUMMARY OF WASTE SHIPMENTS AND VOLUMES DISPOSED FOR THE THIRD QUARTER OF FY 2021.....	3
2.1 WASTE TRANSPORTERS (MOTOR CARRIERS)	4
2.2 SHIPMENTS	5
2.3 TRANSPORTATION ROUTE REPORTING	6
3.0 INCIDENT/ACCIDENT DATA.....	10
4.0 EVALUATION OF SHIPPING CAMPAIGNS	12
REFERENCES	14
POINT OF CONTACT	16
DISTRIBUTION LIST.....	18

LIST OF FIGURES

FIGURE 1. ROUTES TRAVELLED TO THE NNSS IN THE THIRD QUARTER OF FY 2021	8
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LIST OF TABLES

TABLE 1. NNSS INBOUND SHIPMENT SUMMARY FOR THE THIRD QUARTER OF FY 2021	3
TABLE 2. APPROVED GENERATORS SHIPPING WASTE IN THE THIRD QUARTER OF FY 2021	4
TABLE 3. APPROVED MOTOR CARRIERS USED IN THE THIRD QUARTER OF FY 2021	4
TABLE 4. OFFSITE SHIPMENTS OF LLW AND MLLW TRANSPORTED TO THE NNSS IN FY 2021	5
TABLE 5. NNSS ONSITE TRANSFERS OF LLW AND MLLW IN FY 2021	5
TABLE 6. CNR AND CNRH SHIPMENTS TRANSPORTED TO THE NNSS IN FY 2021	5
TABLE 7. SHIPMENT ROUTES FOR THE THIRD QUARTER OF FY 2021	7

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ACRONYMS AND ABBREVIATIONS

CFR	Code of Federal Regulations
CNR	Classified Non-Radioactive
CNRH	Classified Non-Radioactive Hazardous
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
EM	Environmental Management
ft ³	Cubic Foot (Feet)
FY	Fiscal Year
LLW	Low-Level Radioactive Waste
MCEP	Motor Carrier Evaluation Program
MLLW	Mixed Low-Level Radioactive Waste
MSTS	Mission Support and Test Services, LLC
NNSA/NFO	U.S. Department of Energy, National Nuclear Security Administration Nevada Field Office
NNSS	Nevada National Security Site
NNSSWAC	Nevada National Security Site Waste Acceptance Criteria
RWAP	Radioactive Waste Acceptance Program
RWMC	Radioactive Waste Management Complex

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1.0 INTRODUCTION

This report satisfies the U.S. Department of Energy (DOE) commitment to prepare a quarterly summary of waste shipments to the Nevada National Security Site (NNSS) Radioactive Waste Management Complex (RWMC) in Area 5. This report summarizes the third quarter of fiscal year (FY) 2021 and serves as a quarterly report for the following types of shipments:

- Low-Level Radioactive Waste (LLW)
- Mixed Low-Level Radioactive Waste (MLLW)
- Classified Non-Radioactive (CNR) Waste
- Classified Non-Radioactive Hazardous (CNRH) Waste

Tabular summaries are provided that include the following:

- Number and external volume of LLW, MLLW, and CNR/CNRH waste shipments
- Waste generators for LLW, MLLW, and CNR/CNRH waste shipments to and on the NNSS
- Carriers for LLW, MLLW, and CNR/CNRH waste shipments to and on the NNSS
- Waste generator shipments by quarter
- Shipment routes used by carriers
- Incident and accident data applicable to LLW, MLLW, and CNR/CNRH waste shipments

Volume reports using the Low-Level Waste Information System showing cubic feet (ft³) of waste generated may vary slightly due to rounding conventions for conversions from cubic meters to ft³.

Displayed waste volumes summations may vary between tables due to rounding to whole numbers.

Commercial motor carriers transporting waste to the NNSS must be identified on the DOE Motor Carrier Evaluation Program (MCEP) Evaluated Carrier List or be evaluated in a manner similar to the MCEP process. DOE contractors who transport waste to the NNSS as private motor carriers have their motor carrier operations evaluated by DOE as part of the Transportation Safety and Operations Compliance Assurance Program. In addition, periodic self-assessments are required per DOE Order 460.2A, *Departmental Materials Transportation and Packaging Management* and the NNSS Radioactive Waste Acceptance Program (RWAP) routinely reviews motor carrier safety and performance to verify compliance with NNSS Waste Acceptance Criteria (NNSSWAC). Because commercial motor carriers and DOE contractors are commercial entities, their operations are also subject to periodic facility and over-the-road inspection by the U.S. Department of Transportation (DOT).

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2.0 SUMMARY OF WASTE SHIPMENTS AND VOLUMES DISPOSED FOR THE THIRD QUARTER OF FY 2021

Total LLW and MLLW Received from Offsite Generators

A total of 119,529 ft³ of LLW and MLLW was disposed at the NNSS by 15 approved radioactive waste generators in 155 shipments. These shipments were transported using nine MCEP-approved motor carriers.

Total LLW and MLLW Received from Onsite NNSS Generators

A total of 1,615 ft³ of LLW in six onsite transfers was disposed by one approved NNSS onsite radioactive waste generator. Onsite government vehicles were used for these transfers.

Total CNR/CNRH Waste Received from Offsite Generators

A total of 1,744 ft³ of CNR/CNRH waste was disposed at the NNSS by two approved waste generators in three shipments. These shipments were transported using two MCEP-approved motor carriers.

Table 1 provides a summary of waste shipments. Table 2 provides a list of approved waste generators that shipped to or on the NNSS in the third quarter of FY 2021.

TABLE 1. NNSS INBOUND SHIPMENT SUMMARY FOR THE THIRD QUARTER OF FY 2021

INBOUND	OFFSITE GENERATORS	NNSS GENERATORS	CARRIERS	SHIPMENTS	VOLUME (ft ³)
LLW/MLLW (offsite)	14	1 ^c	9	155 ^b	119,529
LLW (onsite)	0	1 ^a	N/A	6	1,615
CNR/CNRH	2	0	2	3 ^b	1,744

^a Government vehicles were used for the six Mission Support and Test Services, LLC (MSTS) onsite transfers.

^b The 161 LLW/MLLW and three CNR/CNRH shipments included 26 classified shipments (21 LLW, two MLLW, two CNR and one CNRH).

^c One shipment originated from the North Las Vegas Complex.

TABLE 2. APPROVED GENERATORS SHIPPING WASTE IN THE THIRD QUARTER OF FY 2021

	GENERATOR	GENERATOR CODE
1	DUF6 Conversion Project	DU
2	Energy Solutions	DR
3	Idaho National Laboratory – Advanced Mixed Waste Treatment Project	AM
4	Idaho National Laboratory – Battelle Energy Alliance	NE
5	Idaho National Laboratory – Fluor Idaho	IN
6	Lawrence Livermore National Laboratory	LL
7	Los Alamos National Laboratory	LA
8	Mission Support and Test Services, LLC	DP
9	Oak Ridge National Laboratory – UT-Battelle	OL
10	Oak Ridge Reservation (UCOR)	OR
11	PermaFix	PF
12	Sandia National Laboratory	SA
13	TRU Waste Processing Center	FW
14	West Valley	WV
15	Y-12 National Security Complex	BW

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/CNRH waste shipments to the NNSS.

TABLE 3. APPROVED MOTOR CARRIERS USED IN THE THIRD QUARTER OF FY 2021

	APPROVED MOTOR CARRIER	CARRIER CODE
1	Bennett Heavy & Specialized, LLC	BHAV
2	Buffalo Fuel Corporation	BUFI
3	CAST Transportation	COLO
4	Hittman Transport	HITT
5	Interstate Ventures	ITSV
6	M.P. Environmental Services, Inc.	MPES
7	Specialty Transport, Inc.	MAJH
8	Tri-State Motor Transit	TSMT
9	Turnkey Technical Services, LLC	TNKA
	Government Vehicle*	GT+

* Government vehicles transporting waste shipments are fully compliant with DOT.

2.2 SHIPMENTS

Table 4 provides a summary of all offsite shipments of LLW and MLLW received at the NNSS in FY 2021. Table 5 provides a summary of NNSS onsite transfers of LLW and MLLW in FY 2021. Table 6 provides a summary of all CNR and CNRH waste shipments received at the NNSS in FY 2021. The three tables include a summary for FY 2021 in the “Total” column.

TABLE 4. OFFSITE SHIPMENTS OF LLW AND MLLW TRANSPORTED TO THE NNSS IN FY 2021

OFFSITE INBOUND SHIPMENTS	SHIPMENTS BY QUARTER				
Generator, State(s)	1 st	2 nd	3 rd	4 th	Total
Aberdeen Proving Ground, MD	3	1	0		4
DUF6 Conversion Project, TN	0	3	1		4
Energy Solutions, TN	4	2	6		12
Idaho National Laboratory – Advanced Mixed Waste Treatment Project, ID	2	6	6		14
Idaho National Laboratory – Battelle Energy Alliance, ID	19	35	20		74
Idaho National Laboratory – Fluor Idaho, ID	3	3	5		11
Lawrence Livermore National Laboratory, CA	7	5	10		22
Los Alamos National Laboratory, NM	5	7	17		29
Mission Support and Test Services, NV	0	0	1		1
Nuclear Fuel Services, TN	1	0	0		1
Oak Ridge National Laboratory – UT-Battelle, TN	2	1	2		5
Oak Ridge Reservation (UCOR), TN	34	38	51		123
Pantex Plant, TX	0	1	0		1
PermaFix, TN, WA, and FL	18	59	15		92
Portsmouth Gaseous Diffusion Plant, OH	7	34	0		41
Sandia National Laboratory, NM	2	0	4		6
TRU Waste Processing Center, TN	0	1	6		7
West Valley, NY	4	1	4		9
Y-12 National Security Complex, TN	0	0	7		7
Total Shipments	111	197	155		463

TABLE 5. NNSS ONSITE TRANSFERS OF LLW AND MLLW IN FY 2021

ONSITE TRANSFERS	SHIPMENTS BY QUARTER				
Generator, State	1 st	2 nd	3 rd	4 th	Total
Mission Support and Test Services, NV	8	2	6		16
Total Shipments	8	2	6		16

TABLE 6. CNR AND CNRH SHIPMENTS TRANSPORTED TO THE NNSS IN FY 2021

OFFSITE INBOUND SHIPMENTS	SHIPMENTS BY QUARTER				
Generator, State	1 st	2 nd	3 rd	4 th	Total
Idaho National Laboratory – Battelle Energy Alliance, ID	1	2	1		4
PermaFix, TN, WA, and FL	1	0	0		1
Sandia National Laboratory, NM	1	0	2		3
Total Shipments	3	2	3		8

2.3 TRANSPORTATION ROUTE REPORTING

DOE policy is to avoid shipments traveling through the I-15/US-95 interchange. The NNSSWAC includes wording requiring generators to notify their carriers to avoid this area and to select approved routes.

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 (Mike O’Callaghan – Pat Tillman Memorial Bridge).”

Recent quarterly and annual transportation reports may be found on the Internet at

<http://www.nnss.gov/pages/programs/RWM/Reports.html>.

Older reports may be obtained by contacting the Office of Scientific and Technical Information at <https://www.osti.gov>, or by phone at (865) 576-8401.

Table 7 provides details of waste shipment routes traveled to the NNSS for the third quarter of FY 2021. Figure 1 provides a graphic depiction of waste shipment routes traveled to the NNSS for the third quarter of FY 2021.

TABLE 7. SHIPMENT ROUTES FOR THE THIRD QUARTER OF FY 2021

LOW-LEVEL, MIXED LOW-LEVEL & CLASSIFIED NON-RADIOACTIVE WASTE SHIPMENTS TO/ON THE NEVADA NATIONAL SECURITY SITE																			
THIRD QUARTER REPORT, FY 2021 (APRIL, MAY, JUNE 2021)																			
RouteType	Route Description	Route Legend	Origin State>>	CA	ID	ID	ID	NM	NM	NV	NY	TN, WA, FL	TN	TN	TN	TN	TN	TN	TN
			Total Shipments by Route	Lawrence Livermore National Laboratory	Idaho National Laboratory - AMWTP	Idaho National Laboratory - Battelle Energy Alliance	Idaho National Laboratory - Fluor Idaho	Los Alamos National Laboratory	Sandia National Laboratories	Mission Support and Test Services	West Valley	Perma-Fix	DUF6 Conversion Project	Energy Solutions	Oak Ridge Reservation (UCOR)	Oak Ridge National Laboratory - UT Battelle	TRU Waste Processing Center	Y-12 National Security Complex	
CALIFORNIA	I-15, CA-127, NV-373, US-95		9	9															
SOUTHERN	I-40, US-93, AZ-68, NV-163, US-95, NV-164, I-15, NV-160, US-95		85					2	6			5	1	6	51	1	6	7	
SOUTHERN	I-40, US-95, NV-164, I-15, NV-160, US-95		17			1		15				1							
SOUTHERN	I-40, US-95, NV-164, I-15, CA-127, NV-373, US-95		2	1												1			
NORTHERN	I-80, US-93-ALT, US-6, US-95		10			6					4								
NORTHERN	US-93, US-6, US-95		34		6	14	5					9							
NEVADA	Losee Road, 215 Beltway, US-95		1							1									
ON-SITE	On-Site Shipments	N/A	6							6									
Total Shipments by Generator>>>			164	10	6	21	5	17	6	7	4	15	1	6	51	2	6	7	
Total Volume (ft ³) by Generator>>>			122,888	17,249	5,410	19,226	3,537	11,685	3,003	1,621	4,038	7,787	2,346	4,501	28,305	1,638	2,824	9,718	

FIGURE 1. ROUTES TRAVELLED TO THE NNSS IN THE THIRD QUARTER OF FY 2021



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3.0 INCIDENT/ACCIDENT DATA

There was one transportation incident (NO release of radioactive contamination) that is described below and no accidents in the third quarter of FY 2021.

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

- **Incident:** An 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 (American National Standards Institute N14.27)
- **Accident:** An occurrence involving a commercial motor vehicle operating on a highway in interstate or intrastate commerce that 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 vehicle(s) to be transported away from the scene by a tow truck or other motor vehicle (49 CFR 390.5[1])

Waste generators and carriers are dedicated to ensuring an appropriate response to all offsite transportation events involving DOE radioactive materials. In a memo to all waste generator sites on October 17, 2016, the Director of DOE Office of Packaging and Transportation and the NNSA/NFO Assistant Manager for EM established notification criteria to provide additional clarity to the requirements in the NNSSWAC. This reporting is consistent with DOE Manual 460.2-1, and will help to ensure the following:

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

Waste generators are instructed to notify NNSS Operations Command Center (OCC) whenever a discrepancy, non-compliance, or inadequate performance or if a transportation incident (including law enforcement directives requiring rerouting) or emergency situation occurs. OCC must be notified no later than one hour after the route deviation/incident with specific details.

MSTS, a contractor to NNSA/NFO, controls NNSS waste receipt and disposal activities and is responsible for notifying appropriate personnel regarding shipping discrepancies, incidents, or accidents.

The transportation issue:

- On April 26, 2021 a truck carrying waste from Oak Ridge experienced a hard braking event at the on-ramp to I-15 North and Nipton Road (in CA) resulting in a load shift of 2 of 6 metal boxes on the trailer bed. The shipment was placed in a safe configuration and resecured, allowing the shipment to be safely delivered to the NNSS on schedule. No injuries, damage, or package breach was reported due to the event.

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4.0 EVALUATION OF SHIPPING CAMPAIGNS

There were no transportation-related findings in the third quarter of FY 2021.

This section contains a summary of the annual shipping campaigns with respect to the significance of the packaging or transportation incidents or accidents reported in Section 3.0 of this report. Waste generators must ensure that waste is packaged and transported in a safe and compliant manner as detailed in the NNSSWAC and DOT regulations. Generators and their contracted shipping carriers must be diligent with regard to all requirements including packaging, routing, and shipping documentation.

The NNSS RWAP provides oversight of NNSS waste generators for compliance with DOT regulations and the NNSSWAC, including Section 6.0 of the NNSSWAC, Waste Transportation and Receipt. 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, including failure to follow DOT 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 findings are reported.

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- U.S. Department of Energy, Office of Packaging and Transportation, 2016. Memo establishing notification criteria. Las Vegas, Nevada. October 2016.
- U.S. Department of Transportation Regulations, 2012. 49 CFR, "Transportation," Code of Federal Regulations, Office of the Federal Register, National Archives and Records Administration. U.S. Government Printing Office. Washington, D.C. 2012.

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POINT OF CONTACT

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