

U.S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 70-820/80-26

Docket No. 70-820

License No. SNM-777 Priority 1 Category UR

Licensee: United Nuclear Corporation

UNC Recovery Systems

Wood River Junction, Rhode Island 02894

Facility Name: UNC Recovery Systems

Inspection at: Wood River Junction, Rhode Island

Inspection conducted: December 9, 10, 15-17, 19, 1980

Inspectors: J. Roth  
J. Roth, Fuel Facilities Inspector

2/6/81  
date signed

\_\_\_\_\_  
date signed

\_\_\_\_\_  
date signed

Approved by: H. W. Crocker  
H. W. Crocker, Chief, Fuel Facility  
Projects Section, FF&MS Branch

2/17/81  
date signed

Inspection Summary:

Inspection on December 9, 10, 15-17, 19, 1980 (Report No. 70-820/80-26)

Areas Inspected: Special announced inspection by a region based inspector of shipping containers and the preparation for shipment of process area contaminated waste to the Barnwell, South Carolina burial ground. The inspection was initiated on the dayshift and involved 23 hours onsite by one NRC inspector.

Results: No instances of noncompliance were identified.

## DETAILS

### 1. Persons Contacted

\*R. J. Gregg, Plant Manager  
J. H. L'Heureux, Manager, Quality Assurance  
J. Murphy, Shift Supervisor  
J. Aiello, Shift Supervisor  
P. Dessaulles, Operations Manager  
K. Helgeson, Manager, Nuclear and Industrial Safety  
  
C. McMahon, Rhode Island Department of Health

\*denotes those present at the exit interview

### 2. Background

During a telephone discussion between Mr. H. W. Crocker of NRC Region I and Mr. R. J. Gregg on December 4, 1980, it was indicated that UNC Recovery Systems had received an allocation of burial space for the month of December, 1980 from the State of South Carolina. As a result of this allocation UNC Recovery Systems required permission from the NRC to ship specific non-lagoon waste from the facility in order to reduce the amount of special nuclear material possessed, to dispose of the waste and to take advantage of the burial space allocation.

On October 1, 1980, an Immediate Action Letter was issued to the UNC Recovery Systems which stated

- 1) ... No radioactive material shipments will be made ... until management actions have been taken to prevent the presence of free-standing liquids in packages for shipment and burial.
- 2) ... The integrity of packages of waste for burial will not be lost during shipment.
- 3) Shipments will not be resumed until authorized by the burial sites, the origin and destination states, and the NRC, Region I.

The waste material involved in the request of December 4, 1980 included recovery process area residual waste in the form of calcined ash and facility decontamination waste in the form of dry metal, paper, cloth, filters, etc.

Prior to the start of this inspection the inspector contacted the State of South Carolina, NRC-NMSS and the State of Rhode Island to assure that this shipment could be transported to the burial site if the inspector could assure that all packaging and transportation requirements had been met by the licensee. No problem areas were identified.

### 3. Inspection Results

#### a. Containers to be Shipped

The inspector determined that the following containers were to be shipped to the Chem-Nuclear Company burial site located in Barnwell, South Carolina.

These containers were identified by MBA number.

#### Containers Shipped

<u>Container No.</u>	<u>Type Container</u>	<u>Container No.</u>	<u>Type Container</u>
1	27113	26	26770
2	27151-4	27	26611
3	27151-1	28	27242-1
4	27158	29	27133
5	27126	30	27132
6	27284-2	31	27101
7	27284-1	32	27098
8	27284-3	33	27097
9	27201-2	34	27116
10	27201-1	35	27110
11	27203-2	36	27239
12	27205	37	27103
13	27201-3	38	27111
14	27073	39	27242-2
15	27117	40	23861
16	27125	41	27135
17	27108	42	27115
18	26605	43	26765
19	27096	44	27114
20	27104	45	27109
21	26612	46	27134
22	26604	47	26492
23	26957	48	26658
24	26769	49	26723
25	27095	50	26724

<u>Container No.</u>		<u>Type Container</u>	<u>Container No.</u>		<u>Type Container</u>
51	26768	STC(17H)	57	26657	STC (Drum)
52	26639	STC(17H)	58	27099	DOT-17H
53	26722	STC(Drum)	59	27102	DOT-17H
54	26493	STC(17H)	60	27094	DOT-17H
55	26640	STC(17H)	61	27180	DOT-17H
56	27187-4	STC(17H)			
62	43	STC (wood box)			
63	37	STC (wood box)			
64	42	STC (wood box)			
65	21	STC (wood box)			
66	11	STC (wood box)			
67	12	STC (wood box)			
68	14	STC (wood box)			
69	17	STC (wood box)			
70	13	STC (wood box)			
71	18	STC (wood box)			
72	36	STC (wood box)			
73	25	STC (wood box)			
74	10	STC (wood box)			
75	1C	STC (wood box)			
76	1748	STC (wood box)			
77	15	STC (wood box)			

STC - strong, tight container

b. Initial Examination of Containers

On December 10, 1980 the inspector examined the following containers upon opening by the licensee.

<u>Item No</u>	<u>Container Drum No.</u>	<u>Item No.</u>	<u>Container No.</u>
2	27284-2	39	27242-2
13	27201-3	40	23861
18	26605	54	26493
20	27104	55	26640
21	26612	56	27187-4
22	26604	61	27180
23	26957	64	42
26	26770	72	36
27	26611	73	25
28	27242-1		



Each container was examined to assure that the requirements of the licensee's quality assurance programs and implementing procedures had been followed. The containers were to be packaged in accordance with Procedure QAP-001 dated November 7, 1979 "United Nuclear Corporation UNC Recovery Systems' Quality Assurance Program for Radioactive Material Shipping Containers." The wooden boxes (Items 64, 72, 73) were to be packaged in accordance with implementing Procedure SOP X-P, Revision 0, approved November 7, 1980 "Packaging of Decontamination Waste." The drums were to be packaged in accordance with implementing procedure SOP III-C Revision 2, dated January 3, 1980 "Procedure for Packaging of Containers and Documenting Outgoing SNM Shipments."

Of the 16 drums opened and examined, all were found to contain only dry material, however, it was noted that two of the containers (Items 55 and 56) did not have a lid gasket in place as required by SOP III-C.

Of the 3 boxes opened and examined, only one (Item 64) had been prepared for shipment as required by SOP X-P. This container was found to be properly prepared. The other two (Items 72 and 73) had not been prepared in accordance with SOP X-P. Neither box had all joints properly caulked, 1 box was not banded externally, and neither box had the weight of the container recorded on the boxes. All boxes were found to contain only dry material.

As a result of this initial inspection UNC Recovery Systems in a letter to Mr. H. W. Crocker dated December 11, 1980, committed to open and inspect all of the remaining containers in accordance with SOP III-C and SOP X-P. This work was expected to take about two days to complete.

c. Final Inspection of Containers

On December 15 the inspector examined the following containers upon opening by the licensee.

<u>Item No.</u>	<u>Container No.</u>	<u>Item No.</u>	<u>Container No.</u>
11	27203-2	74	10
19	27096	75	16
65	21	77	15
66	11		

The inspector determined that all containers held only dry material. No inadequacies were identified with respect to the drums examined (Items 11 and 19). With respect to the boxes examined, the inspector noted that in each case, the seams on at least one panel did not appear to be properly caulked. The licensee corrected this oversight by laying a bead of caulking material on each exposed seam of each box.

On December 16, 1980 the inspector reexamined the boxes which were to be shipped and noted inadequate caulking on Items 62, 63, 64, 73 and 76. Corrective action was immediately taken by the licensee to seal all of the seams on the remaining boxes.

d. Truck Loading and Preparation (Shipment 110)

On December 17, 1980 the inspector observed the preparation, loading and placarding of the Tristate Motor Transit Truck (tractor No. 5160, trailer No. 444538). Preparation of the truck for shipment No. 110 prior to loading was accomplished in accordance with Procedure SOP III-H Revision 0 dated October 15, 1980 "Preparation of Radioactive Material Burial Shipments." It was noted that the trailer had a rivet missing on a seam in the roof approximately 6 feet from the front. The licensee placed caulking material in the open seam and tightened the seam with a bolt.

The inspector observed the loading of all the drums and 3 boxes (Items 62, 63 and 64). Loading was accomplished as required by SOP III-H. The inspector examined each container as it was placed on the truck to assure that each container was properly sealed, marked, labeled and identified. The load was properly blocked and braced as required by federal regulations and the vehicle was properly placarded.

e. Truck Radiation Survey (Shipment 110)

The inspector observed a licensee representative conduct a radiation survey of the tractor-trailer prior to leaving the site. The radiation survey was conducted by approaching the center of the trailer back, sides, front and bottom to a distance of 3 feet from the surface and taking a radiation reading. A review of the radiation levels on the containers shipped indicated that none of the containers exhibited a radiation level in excess of 0.3 mR/hr at the surface and less than 0.1 mR/hr at 3 feet from the surface. Therefore, no radiation levels in excess of regulatory requirements would be obtained. The inspector indicated that the survey procedure should be modified in order to obtain readings on the surface of the trailer, at six feet from the surface and in the cab of the tractor. The licensee modified procedures and resurveyed the vehicle and obtained readings of less than 0.2 mR/hr on all surfaces of the trailer and a reading of 0.05 mR/hr in the cab of the tractor.

f. Truck Loading, Preparation and Release Shipments 111 and 112)

On December 19, 1980, the inspector observed the preparation, loading, placarding, and release of a Tristate Motor Transit Truck (tractor No. 2353, trailer No. 440834) for shipment No. 111 and a McLean Trucking vehicle (tractor No. 26507, trailer No. 52318). Preparation of the trucks was accomplished in accordance with SOP III-H. It was noted that the Tristate trailer was leaking water down the front wall. The leakage was sufficient to soak the floorboards of the trailer. In order to correct this problem the licensee caulked the seams on the front surface and placed a plywood covering on the floor of the front portion of the trailer. Then, preparation of the truck was completed in accordance with the SOP.

The inspector observed the loading of the following containers in the trailers.

<u>Shipment No. 111</u>		<u>Shipment No. 112</u>	
<u>Item No.</u>	<u>Box No.</u>	<u>Item No.</u>	<u>Box No.</u>
65	21	72	36
66	11	73	25
67	12	74	10
68	14	75	16
69	17	76	174B
70	13	77	15
71	18		

Loading was accomplished as required by SOP III-H. The inspector examined each container as it was placed on the truck to assure that each container was properly sealed, marked and identified. Each load was properly blocked and braced as required by federal regulations and the vehicles were properly placarded. Adequate radiation surveys of the trailer and inside the cab of the tractor were also conducted. Radiation readings of less than 0.2 mR/hr were obtained on all surfaces of the trailers and readings of 0.05 mR/hr were obtained in the cabs of the tractors.

g. Shipping Papers

Shipping papers including the Rhode Island State Permit, the Connecticut State Permit, the Bill of Lading, the UNC Factory Shipping Order, the packing list, the South Carolina State Permit, the South Carolina State Certification Form, the Chem-Nuclear Shipment Record Form and the Contamination and Radiation Survey Results were examined by the inspector. No inadequacies were identified. Copies of the available shipping papers are attached in Appendix A for shipment 110, in Appendix B for shipment 111 and in Appendix C for shipment 112.

#### 4. Solidification of Organic Liquids

During the course of this inspection, the inspector had the licensee open and then examined 32 shipping containers which had been filled with organic solvent materials solidified in place. The material had been solidified using a proprietary mixture identified as NuTeck 316 by a contractor called in by the licensee. It appeared that the material in each container had solidified in that it looked like cement on the top surface. However, there was no way to assure that the material in the containers had solidified throughout. The inspector informed the licensee that a method had to be devised to show that the material in the drum had solidified throughout prior to shipping to a burial site.

There also appeared to be some moisture on the surface of the solid material. The licensee indicated that cement would be placed on the top of the solid prior to shipping in order to tie-up any available moisture.

None of these containers were shipped to burial as part of the shipment previously discussed in this report.

#### 5. Exit Interview

The inspector met with the licensee representative (denoted in paragraph 1) at the conclusion of the inspection at about 1:30 p.m. on December 19, 1980. The inspector summarized the scope and findings of the inspection.

Subsequent to the inspection, on January 21, 1981, the inspector informed the Manager, Quality Assurance by telephone that there were no items of noncompliance identified during the inspection.



# STRAIGHT BILL OF LADING—SHORT FORM—Original—Not Negotiable

RECEIVED, subject to the classifications and tariffs in effect on the date of issue of this Original Bill of Lading.

AGENT'S NO.

The property described below is shipped under contract as noted (contents and condition of contents of packages unknown), packed, weighed and delivered as indicated below, which said carrier (the named carrier) binds, conditional upon the contract as making any person or corporation in possession of the property under the contract agree to carry to its usual place of delivery at said destination, it is hereby agreed, as to each carrier at all or any of said property, that the carrier shall be subject to all the terms and conditions of the Uniform Domestic Freight Bill of Lading and (1) in effect, Southern, Western and Illinois Freight Classifications, or (2) in the applicable master carrier classification or tariff of this is a motor carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back, front, and back in the classification or tariff which govern the transportation of this shipment, and the said terms and conditions are hereby agreed to by shipper and accepted for himself and his assigns.

From **UNITED NUCLEAR CORPORATION**

☐ NEW HAVEN, CONN. ☒ WOOD RIVER JCT., R. I.  
☐ MONTVILLE, CONN. ☐ HEMATITE, MO.

DATE SHIPPED

CARRIER'S NO.

3672

SHIPPER'S NO.

78

December 17, 1980 NAME OF CARRIER **Tri-State (Exclusive Use)**

CONSIGNED TO

(Mail or street address of consignee—For purposes of notification only.)

**CHEM NUCLEAR SYSTEMS, INC.**

DESTINATION

STATE

COUNTY

P.O. BOX 726

DELIVERY ADDRESS

(To be filled in only when shipper desires and governing tariffs provide for delivery thereat.)

BARNWELL, SC 29812

ROUTE

ATTN.: JO STILL

DELIVERING CARRIER

CAR OR VEHICLE INITIALS NO.

**TRI-STATE (EXCLUSIVE USE)**

NUMBER PACKAGES	KIND OF PACKAGE, DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	WEIGHT (Subject to Correction)	CLASS or RATE	Check Color
	RADIOACTIVE MATERIAL - N.O.S.			
	2898,3 gms U-235 1.42 Curies T. I. = 3.6			
25	DOT Spec 17H 55 gallon drums containing radioactive material LSA NOS			
3	Boxes containing radioactive material LSA NOS Seal # 22475	13,519 lbs.		
10	DOT SPEC 17H 55 gallon drums containing radioactive material White I labels applied			
26	DOT Spec 17H 55 gallon drums containing radioactive material W Yellow II labels applied			
	Group III Labels I & I & LSA applied			
	Total cubic feet: 832.5			
	*** PLACARDS REQUIRED			

SPECIAL INSTRUCTIONS:

"DO NOT OPEN IN TRANSIT. SHIPMENT TO BE UNLOADED BY CONSIGNEE FROM THIS VEHICLE."

"This is to certify that the above-named materials are properly described and marked in accordance with the regulations of the Department of Transportation."

INV. NO.

If the shipment moves between two ports by a carrier by water, the law requires that this bill of lading shall state whether it is "carrier's or shipper's weight."  
 NOTE—Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.  
 The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

"Shipper's imprint in lieu of stamp; not a part of bill of lading approved by the Interstate Commerce Commission"

UNITED NUCLEAR CORPORATION, Shipper, Per

Permanent post-office address of shipper, NEW HAVEN, CONN.

This is to certify that the above articles are properly described by name and are packed and marked and are in proper condition for transportation according to the regulations prescribed by the Interstate Commerce Commission.

Agent, Per

B/L No. 6292



3672

## FACTORY SHIPPING ORDER

UNC RECOVERY SYSTEMS

One Narragansett Trail • Wood River Junction, Rhode Island 02894 • Phone 401/364-7701

No. 3672

SHIP TO: Chem Nuclear Systems, Inc.

SHIP VIA: Tri-State (EXCLUSIVE USE)

P.O. Box 726

SHIP ☒ PREPAID ☐ COLLECT

Barnwell, SC 29812

CASES  
61 drums 3 boxes

WEIGHT

Attn.: J. Still

B/L NO.  
6292

CAR NO.

SHIP AGAINST

CHARGE NO.

P.O. NO.

PRO. OR WAYBILL NO.

SHIPPING REPORT

CONTRACT NO.

CUSTOMER P.O. NO.

COMPLETE PARTIAL PARTIAL NO.

REASON FOR SHIPMENT

Misc. wastes for burial

QUANTITY	UNIT	PART NO. OR DRAWING NO.	SERIAL NO. OR DOCUMENT NO.	DESCRIPTION	QUANTITY SHIPPED	WEIGHT
25	drums			RADIOACTIVE MATERIAL- N. O. S. 2898.3 gms. U-235 1.42 Curies T. I. = 3.6		
3	boxes			DOT Spec 17 H 55 gallon drums containing radioactive material LSA NOS		
10	drums			Boxes containing radioactive material LSA NOS		13,519 lb
26	drums			DOT Spec 17H 55 gallon drums containing radioactive material White I Labels Applied		
				DOT Spec 17H 55 gallon drums containing radioactive material Yellow II Labels Applied		
				Group III Labels I & II & LSA Applied		
				Total Cubic Feet: 832.5		
				PLACARDS REQUIRED		

Seal # 22475

REMARKS OR SPECIAL INSTRUCTIONS:

"DO NOT OPEN IN TRANSIT. SHIPMENT TO  
BE UNLOADED BY CONSIGNEE FROM THIS  
VEHICLE."

*Robert W. Heureux*  
ORIGINATOR

DATE

DEPARTMENT

DECLARED VALUE

DATE REQUIRED AT DESTINATION

John L'Heureux

12/17/80

9912

LOCATION OF MATERIAL

PACKED BY

CHECKED BY

APPROVED BY

DATE

DATE SHIPPED

SHIPPED BY

12/17/80

12/17/80

John L'Heureux

Distribution: White—Original; Green—Control Copy; Canary—Originator's Copy; Pink—Packing List; Goldenrod—Shipping Copy



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

DIVISION OF PUBLIC UTILITIES AND CARRIERS  
100 Orange Street  
Providence, R. I. 02903

Telephone: 401-277-2442

Transceiver: 401-331-5562

APPLICATION FOR RADIOACTIVE PERMIT

SHIPPER: UNC RECOVERY SYSTEMS

CARRIER: Tri-State Trucking

ADDRESS: Box 113 Joplin, MO

	<u>Make</u>	<u>Year</u>	<u>Color</u>	<u>Registration</u>	<u>State</u>
TRACTOR:	Kenworth	1974	Blue	805-168	Oklahoma

TRAILER:	Tram	1973	Silver	441-834	Missouri
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GROSS VEH. WT. 73,000 NO. OF AXELS 5 OVERALL HEIGHT 13'6" OVERALL WIDTH 8'

MAJOR ISOTOPES & QUANTITY U-235 4 1.42 REQUIRED LABEL LSA-I-II

DATE & TIME 12/17/80 10:30 a.m. DRIVER(S) IDENTITY Weinhardt

ORIGIN (Facility & Location) UNC RECOVERY SYS., WOOD RIVER JCT., RI

DESTINATION (Facility & Location) Chem-Nuclear Systems, Barnwell, S.C.

ROUTING 91-216-195 ISSUE PERMIT VIA: TELECOPY

Shipper's Affirmation: "I hereby affirm that the above-described cargo will be properly classified, described, packaged, marked and labeled, and will be in condition for transportation in conformance with the applicable regulations of the Nuclear Regulatory Commission and the Federal Department of Transportation."

John L. K... Mgr. QA 12/17/80  
Authorized Signature & Title Date

Carrier's Affirmation: "I hereby affirm that the above-described cargo will be properly loaded, blocked and secured onto the transportation vehicle, and that said vehicle and load will be in compliance with the applicable motor carrier safety regulations of the Federal Department of Transportation."

Robert Weinhardt  
Authorized Signature & Title Date 12/17/80

FOR OFFICE USE ONLY	
PERMIT NO. _____	ISSUED BY: _____ DATE: _____
EFFECTIVE DATE: _____	EXPIRATION DATE: _____

POOR ORIGINAL

STATE OF RHODE ISLAND  
DIVISION OF PUBLIC UTILITY & CARRIERS  
PROVIDENCE, RHODE ISLAND

PERMIT NO.: 331

EFFECTIVE DATE: 12/17/80

EXPIRATION DATE: 12/17/80

TRANSPORTATION PERMIT FOR RADIOACTIVE MATERIALS

CARRIER

TRI STATE MOTOR TRANSIT

THIS SHIPMENT SUBJECT TO NRC REGULATIONS

ADDRESS

P.O. BOX 113, JOPLIN, MO

DOCID NO. 70-820

The permittee is authorized to transport the following shipment in consonance with this Division's rules and regulations pertaining to such shipment.

TRACTOR:	MAKE KENNORTH	YEAR 1974	REGISTRATION 003-168	STATE OK	
TRAILER:	MAKE TRAN	YEAR 1973	REGISTRATION 441-834	STATE MO	
DIMENSIONS:	Length L	Width L	Height L	Weight L	DRIVER'S NAME WEINBAUGH
	SHIPMENT DATE 12/17/80	TIME 1030 HRS	MAJOR ISOTOPES U-235	QUANTITY (COPIES) less than 1.42 CURIES	REQUIRED LABEL ISA-111
ORIGIN (CITY, STATE & FACILITY) UNC RECOVERY SYSTEMS, WOOD RIVER JCT, RI			DESTINATION (CITY, STATE & FACILITY) CHEM NUCLEAR SYSTEMS, BARNWELL, SC		
VIA ROUTES 91-216-K9E			PERMIT ISSUED BY: LR DATE OF ISSUE: 12/17/80		

NO MOVEMENTS PERMITTED DURING HOURS 7-9:00 A.M. AND 4-6:00 P.M.

TRANSMIT PERMIT TO:



**TRANSPORTATION PERMIT  
OVERSIZE/OVERWEIGHT VEHICLE**

STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION  
RD DRAWER A WETHERFIELD CT 06109

00045

Permission is hereby granted to transport the load as specified below if used in the reasonably reduced to minimum dimensions. Permit not applicable to divisible loads.

DATE OF ISSUANCE	DATE EFFECTIVE	EXPIRATION DATE	PERMIT NUMBER
12-17-80	12-17-80	12-17-80	401-364-7701 X 49

Tri-State Motor Transit  
P.O. Box 113  
Joplin, MO 64801

**LIMITATIONS**

1. Vehicle shall be operated at a safe rate of speed under favorable weather and road conditions.
2. Permit covers State highways and State bridges only.
3. Gross load may not exceed posted capacity of any bridge.
4. Permit does not exonerate the permittee from legal liability of responsibility for damages to any highway, street or bridge resulting from use of the vehicle described below.
5. Permit is void after expiration date and on Saturdays, Sundays and holidays.
6. No further permit will be issued unless this permit is duly signed, dated and returned to this office within one week after the expiration date.
7. Permit for confirmation of the existence of such permits must be on vehicle while on State highways.

ORDERED BY: **UNC Recovery Systems**

TRACTOR NO.	TRAILER NO.	PLATE NO.	TIME PERMITTED	LOAD DESCRIPTION
B05-168-OK	441-834-MO			Radioactive Material
WIDTH	LENGTH	GROSS WEIGHT	NO. OF AXLES	ORIGIN OR DESTINATION
				R.I. to Barnwell, So. Carolina

ROUTES:  
I-95 south, 52 north, 2 west, I-84 west

Isotopes: U-235      curies: less than 1.42      Label: Yellow I & II  
Driver's name: Robert Weinhardt, anticipating move 12-17-80      time 10:30 a.m.  
Tractor: Color: Blue, Make: Kenworth, Year: 1974  
Trailer: Color: Silver, Make: Transcraft, Year: 1973  
Contacted State Police 12-17-80      time 9:15 a.m. by Alma Sargeant & Dispatcher Perruccio.

HOURS OF TRAVEL				ESCAPE REQUIREMENTS		APPROPRIATE SIGNS	
<input type="checkbox"/> Daylight	<input checked="" type="checkbox"/> 9:00 A.M. - 4:00 P.M. Only	<input type="checkbox"/> 7:00 A.M. - 9:00 A.M.	<input type="checkbox"/> 4:00 P.M. - 6:00 P.M.	<input type="checkbox"/> No Restriction	<input type="checkbox"/> Front	<input type="checkbox"/> Rear	<input type="checkbox"/> Required
				DATE			

OFFICE USE ONLY	Base Permit Fee \$16.00	Wire Transmission Fee \$2.00	Annual Fee (30% of Conn. Registration)	No Charge	STATE FEE
					\$25.00

IMPORTANT: SIGN, DATE AND RETURN THIS COPY AFTER COMPLETION OF TRIP



STATE OF CONNECTICUT  
DEPARTMENT OF TRANSPORTATION

21 WOLCOTT HILL ROAD, FIVE DEWEY A  
WILMINGTON, CONNECTICUT 06097

TELEPHONE: (203) 566-4010



An Equal Opportunity Employer

INSTRUCTIONS: The following information, including signed certifications from both the shipper and the carrier, must be supplied to the Office of Transportation Permits prior to the issuance of a permit to transport radioactive materials. All required information, with the exception of the signed certifications, will be accepted by telephone at the above number, by mail at the above address or by telecopier equipment.

A copy of the shipping documents, signed by the shipper, may be submitted in lieu of the shipper's certification, and both the shipper's and carrier's certifications may be sent to the Office of Transportation Permits via telecopier equipment.

APPLICATION FOR RADIOACTIVE PERMIT

SHIPPER UNO RECOVERY SYSTEMS		FOR OFFICE USE ONLY		DATE OF ISSUE	EFF. DATE	EXP. DATE
CARRIER Tri-State Trucking				PERMIT NO.	PERMIT ISSUED BY	
ADDRESS Box 113 Joplin, MO						
TRACTOR	MAKE Kenworth	YEAR 1974	COLOR Blue	REGISTRATION 805-168	STATE Oklahoma	
TRAILER	MAKE Tram	YEAR 1973	COLOR Silver	REGISTRATION 441-834	STATE Missouri	
GROSS VEHICLE WEIGHT*		NO. OF AXLES*	OVERALL HEIGHT*	OVERALL WIDTH*	DRIVER(S)	
75,000		5	13'6"	8'	Weinhardt	
SHIPMENT DATE	TIME	MAJOR ISOTOPES		QUANTITY (CURIES)	REQUIRED LABEL	
12/17/80	10:30am	U-235		2 1.42	IIA/I/II	
ORIGIN (CITY, STATE & FACILITY) UNO RECOVERY SYS., WOOD RIVER JCT., RI				DESTINATION (CITY, STATE & FACILITY) Chem-Nuclear Systems, Barnwell, S.C.		
VIA ROUTES 195S-52N-2W-184W					ISSUE PERMIT VIA TELECOPY	

\* TO BE COMPLETED ONLY IF DIMENSIONS EXCEED STATUTORY LIMITS.

Shipper's Certification - "This is to certify that the above-named articles are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation, according to the applicable regulations of the Nuclear Regulatory Commission and the Federal Department of Transportation."

*[Signature]* Mgr. Q.A. 12/17/80  
Authorized Signature (Title) Date

Carrier's Certification - "This is to certify that the above-named articles have been properly loaded, blocked and secured onto the transportation vehicle and that the transport vehicle and load are in compliance with the applicable motor carrier safety regulations of the Federal Department of Transportation."

*[Signature]* 12/17/80  
Authorized Signature (Title) Date



PROJECT NO. \_\_\_\_\_

SHIPPED VIA Tri-State (Exclusive Use)

JOB # \_\_\_\_\_ Z ENRICH *Mix*

DESCRIPTION	WEIGHT		ELEMENT	ISOTOPE
61 drums @ 7.5 cu ft. ea. = 457.5 cu ft.				
3 boxes @ 125 cu ft. ea. = 375 cu ft.	Total	13,519 lb.		2898.3 gm
Total Cubic feet 832.5				

## HEALTH PHYSICS RADIOLOGICAL SURVEY REPORT

SURVEYED BY: W. Lyons DATE: 12-15-80VEHICLE SURVEY: NADATE: 12-15-80MATERIAL RELEASED BY: W. Lyons DATE: 12-15-80INSTRUMENT (S): NLSSURVEY DESCRIPTION: BURIAL 110

NO. OBJECT OR DESCRIPTION	CPM	ALPHA COUNTING		DPM	CPM	BETA COUNTING		DPM	INSTR. SURVEY	
		BKG	NET CPM			BKG	NET CPM		NR/HR	DATE
27187-41	5	2.0	3	9.0	24	28.0	0	0	0.1	12/14/80
26640	1		0	0	25		0	0	0.2	
27099	3		1	3.0	35		7	22.0	0.1	
27094	5		3	9.0	25		0	0	0.1	
27102	5		3	9.0	24		0	0	0.1	
26657	3		1	3.0	44		16	176.0	0.1	
26493	1		0	0	24		0	0	0.1	
26722	5		3	6.0	27		9	99.0	0.2	
26639	5		3	9.0	27		1	11.0	0.2	
26768	5		3	9.0	30		0	0	0.2	
26724	5		3	6.0	36		0	24.0	0.2	
27095	5		3	0	37		3	33.0	0.2	
26723	5		3	0	27		0	0	0.1	
26657	5		3	0	31		3	33.0	0.1	
26492	5		3	12.0	32		4	44.0	0.2	
27134	5		3	6.0	28		0	0	0.2	
27109	5		3	12.0	20		0	0	0.1	
27114	5		3	17.0	23		0	0	0.1	
27115	5		3	6.0	26		0	0	0.2	
26765	5		3	21.0	30		0	24.0	0.2	
27135	5		3	24.0	33		0	0	0.2	
27133	5		3	9.0	24		0	0	0.1	
27132	5		3	0	24		0	0	0.1	
27101	5		3	0	26		0	24.0	0.2	
27098	5		3	9.0	26		0	0	0.2	
27097	5		3	16.0	35		0	22.0	0.2	
27116	5		3	3.0	24		0	0	0.1	
27110	5		3	0	24		0	0	0.2	
27239	5		3	6.0	36		0	33.0	0.1	
27103	5		3	3.0	24		0	0	0.2	
27111	5		3	0	26		0	0	0.1	
27242-2	5		3	3.0	24		0	0	0.2	
23861	5		3	9.0	27		0	0	0.3	
27242-1	13		11	33.0	19		0	0	0.2	
26661	13		6	18.0	34		0	66.0	0.1	

# HEALTH PHYSICS RADIOLOGICAL SURVEY REPORT

SURVEYED BY: N/V DATE: 12-15-80 VEHICLE SURVEY: N/A DATE: 12-15-80  
 MATERIAL RELEASED BY: N/V DATE: 12-15-80  
 INSTRUMENT (S): N/S SURVEY DESCRIPTION: Garage 110

No.	OBJECT OR DESCRIPTION	CPM	ALPHA COUNTING		DPM	BETA COUNTING		DPM	INSTR. SURVEY MR/HR OR CPM	DATE
			BKG	NET CPM		BKG	NET CPM			
1	26270 ✓	5	20	3	9.0	28.0	4	14.0	0.1	12-15-80
	26769 ✓	5		3	9.0		3	32.0	0.2	
	26604 ✓	3		1	3.0		2	66.0	0.1	
	26612 ✓	2		0	0		0	0	0.1	
	27104 ✓	4		0	0		0	0	0.2	
	26952 ✓	2		2	6.0		0	0	0.2	
	27096 ✓	2		0	0		0	0	0.2	
	26605 ✓	5		3	7.0		3	33.0	0.1	
	27108 ✓	3		2	6.0		0	0	0.2	
	27125 ✓	3		1	3.0		13	170.0	0.1	
	27073 ✓	3		2	6.0		2	22.0	0.1	
	27117 ✓	4		2	6.0		7	77.0	0.2	
	27113 ✓	4		2	6.0		8	0	0.1	
	27151-4 ✓	5		3	9.0		8	88.0	0.1	
	27151 ✓	4		2	6.0		0	0	0.2	
	27158 ✓	4		3	9.0		0	0	0.2	
	27126 ✓	4		3	6.0		9	98.0	0.1	
	27284-2 ✓	5		3	9.0		0	0	0.2	
	27284-1 ✓	8		6	18.0		10	110.0	0.1	
	27284-3 ✓	7		5	15.0		5	55.0	0.1	
	27201-2 ✓	12		10	30.0		12	132.0	0.1	
	27201-1 ✓	5		3	9.0		0	0	0.1	
	27203-2 ✓	17		15	45.0		1	11.0	0.2	
	27189 ✓	1		0	0		0	0	0.3	
	27205 ✓	4		2	6.0		0	0	0.3	
	27201-3 ✓	12		10	30.0		0	0	0.1	



# HEALTH PHYSICS RADIOLOGICAL SURVEY REPORT

SURVEYED BY: N/V DATE: 12-15-80 VEHICLE SURVEY: NA DATE: 12-15-80  
 MATERIAL RELEASED BY: N/V DATE: 12-15-80  
 INSTRUMENT (S): N/A SURVEY DESCRIPTION: Barrel 110

NO. OBJECT OR DESCRIPTION	CPM	ALPHA COUNTING		CPM	BETA COUNTING		DPM	INSTR. SURVEY MR/HR	DATE
		BKG	NET CPM EFF.		BKG	NET CPM EFF.			
1 Box # 27	8	20	3.0	14	28.0	0	0	20.2, 17.1, 14.2-15	
2 37	2	0	0	14		6	66.0		
3 37	3	0	0	29		1	11.0		
4 37	3	0	0	28		0	0		
5 37	11	0	0	36		8	88.0		
6 Box # 43	2	20	2.0	21		0	0		
7 43	2	0	0	20		12.0	12.0		
8 43	4	0	0	29		0	0		
9 73	3	0	0	30		0	0		
10 43	3	0	0	27		0	0		
11 Box # 42	1	0	0	31		3	33.0		
12 42	7	0	0	32		5	55.0		
13 42	6	0	0	26		0	0		
14 42	5	0	0	25		0	0		
15 42	3	0	0	34		6	66.0		





# RADIOACTIVE MATERIAL BURIAL SHIPMENT VEHICLE INSPECTION CHECK LIST

SHIPMENT NO: 110  
CARRIER: TRSM  
TRAILER ID: 444538  
DESTINATION: CNSI, SC.

INSPECT EACH VEHICLE AND SHIPMENT PER SOP III-H, QP-5.411, AND THIS FORM

ITEM NO.	ITEM DESCRIPTION	INSPECTOR'S INITIALS/DATE	NOTES
1	PRELOADING INSPECTION		
1.1	FLOOR, WALLS, CEILING DRY	JH 12/17/80	
1.2	NO HOLES OR LEAKS IN TRAILER	JH 12/17/80	Pinet hole in ceiling. see att.
1.3	NO LOOSE MATERIAL (DIRT)	JH 12/17/80	Very dirty. see note.
1.4	NO RADIOACTIVE CONTAMINATION EXCEEDING RELEASE LIMITS	J. Nelson 12/17/80	
1.5	FLOOR COVERED PER SOP III-H	Jan 12-17-80	
2	POST LOADING INSPECTION		
2.1	UNIFORM LOADING	JA 12-17-80	
2.2	CRATES AND DRUMS <u>NOT</u> INTER-MIXED	OD 12/17/80	
2.3	MIN. 3" CLEARANCE BETWEEN CRATES AND VEHICLE SIDES	OD 12/17/80	
2.4	SIDE BY SIDE SMALL CRATES FASTENED TOGETHER (BARNWELL SHIPMENTS ONLY)	NA 12/17/80	
2.5	ADEQUATE SHORING TO PREVENT LOAD SHIFTING	ALC 12/17/80	
2.6	NIS CONTAMINATION CLEARANCE	J. Nelson 12/17/80	
2.7	PHOTOGRAPH OF LOADED TRAILER	NA 12/17/80	
2.8	LOAD AND SHIPPING PAPERS AGREE	OD 12/17/80	

# RADIOACTIVE MATERIAL RUPIAL SHIPMENT VEHICLE INSPECTION CHECK LIST

SHIPMENT NO:  
PAGE 2 OF 2

ITEM NO.	ITEM DESCRIPTION	INSPECTOR'S INITIALS/DATE	NOTES																										
3	<u>PRERELEASE INSPECTION</u>																												
3.1	CONTAINER INSPECTION REPORT COMPLETE AND ALL CONTAINERS ACCEPTED	OD 12/17/80																											
3.2	TRAILER SEALED WITH TAMPER-SAFE SEAL. SEAL NUMBER: <u>22478</u>	OD 12/17/80																											
3.3	"RADIOACTIVE" PLACARDS VISIBLE ON ALL FOUR SIDES	OD 12/17/80																											
3.4	<p>DRIVER POSSESSES AND HAS SIGNED ALL REQUIRED PAPERWORK</p> <table border="0"> <tr> <td>A) RI STATE PERMIT*</td> <td><input checked="" type="checkbox"/></td> <td rowspan="10">OD 12/17/80</td> </tr> <tr> <td>B) CT STATE PERMIT*</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>C) UNC BILL OF LADING*</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>D) UNC FSO*</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>E) UNC PACKING LIST</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>F) CHEM-NUCLEAR SHIPMENTS</td> <td></td> </tr> <tr> <td>    (1) S.C. PNP FORM</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>    (2) S.C. CERTIFICATION FORM*</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>    (3) CHEM-NUC. SHIPMENT RECORD FORM*</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>G) NECO SHIPMENTS</td> <td></td> </tr> <tr> <td>    (1) NEV. CERTIFICATION FORM*</td> <td><u>n/a</u></td> <td></td> </tr> <tr> <td>    (2) NECO SHIPMENT AND DISPOSAL FORM*</td> <td><u>n/a</u></td> <td></td> </tr> </table> <p>(*SIGNED BY VEHICLE DRIVER)</p>	A) RI STATE PERMIT*	<input checked="" type="checkbox"/>	OD 12/17/80	B) CT STATE PERMIT*	<input checked="" type="checkbox"/>	C) UNC BILL OF LADING*	<input checked="" type="checkbox"/>	D) UNC FSO*	<input checked="" type="checkbox"/>	E) UNC PACKING LIST	<input checked="" type="checkbox"/>	F) CHEM-NUCLEAR SHIPMENTS		(1) S.C. PNP FORM	<input checked="" type="checkbox"/>	(2) S.C. CERTIFICATION FORM*	<input checked="" type="checkbox"/>	(3) CHEM-NUC. SHIPMENT RECORD FORM*	<input checked="" type="checkbox"/>	G) NECO SHIPMENTS		(1) NEV. CERTIFICATION FORM*	<u>n/a</u>		(2) NECO SHIPMENT AND DISPOSAL FORM*	<u>n/a</u>		
A) RI STATE PERMIT*	<input checked="" type="checkbox"/>	OD 12/17/80																											
B) CT STATE PERMIT*	<input checked="" type="checkbox"/>																												
C) UNC BILL OF LADING*	<input checked="" type="checkbox"/>																												
D) UNC FSO*	<input checked="" type="checkbox"/>																												
E) UNC PACKING LIST	<input checked="" type="checkbox"/>																												
F) CHEM-NUCLEAR SHIPMENTS																													
(1) S.C. PNP FORM	<input checked="" type="checkbox"/>																												
(2) S.C. CERTIFICATION FORM*	<input checked="" type="checkbox"/>																												
(3) CHEM-NUC. SHIPMENT RECORD FORM*	<input checked="" type="checkbox"/>																												
G) NECO SHIPMENTS																													
(1) NEV. CERTIFICATION FORM*	<u>n/a</u>																												
(2) NECO SHIPMENT AND DISPOSAL FORM*	<u>n/a</u>																												
3.5	TRACTOR AND TRAILER HAS RELEASED	<u>[Signature]</u> 12/17/80																											
4	VEHICLE AND LOAD ARE ACCEPTABLE AND RELEASED FOR SHIPMENT																												

OPERATIONS  
QUALITY ASSURANCE  
COMPLIANCE

SIGNATURE

DATE

[Signature]  
[Signature]  
[Signature]

12/17/80  
12/17/80  
12/17/80

110 Page 1

MATERIAL FOR BURIAL PREPARATION FORM

ITEM	PHYSICAL	CHEMICAL	RADIATION MR/HR 3 FT	ISOTOPE/S	U	U235	GROSS	SCALE	AREA	LE2
1	26492	V9857	12	93	7.1	6.6	108	22451		
2	26639	V9858	9	93	.1	.1	118	22452		
3	26657	V9858	3	93	8.5	8.0	152	22451		
4	26658	V9858	0	93	8.5	8.0	158	22451		
5	26765	V9854	0	93	1.0	1.0	248	22430		
6	26768	V9854	0	93	6.2	5.8	98	22426		
7	26769	V9854	9	93	14.0	13.0	122	22420		
8	26722	V9858	6	93	2.3	2.2	118	22444		
9	26723	V9858	0	93	9.7	9.0	137	22443		
10	26724	V9858	0	93	8.8	8.2	140	22442		
11	27073	W12	10	290	4407	45.8	607	22424		
12	27094	X3701	9	67	1490	98.9	106	22453		
13	27095	X3701	0	67	148.5	98.5	87	22444		
14	27096	X3701	0	67	146.2	98.0	99	22421	22470	
15	27097	X3701	0	67	133.5	89.5	88	22442		
16	27098	X3701	0	67	138.8	93.0	76	22448		
17	27099	X3701	3	67	101.4	68	82	22452		
18	27101	X3701	0	67	130.0	87.1	50	22449		
19	27102	X3701	4	67	129.8	87.0	54	22450		
20	27103	X3701	0	67	112.5	75.4	84	22428		
21	27108	X3701	0	67	130.5	87.2	83	22422		
22	27109	X3701	0	67	130.0	87.2	88	22434		
23	27110	X3701	3	67	130.0	87.2	87	22437		
24	27111	X3701	3	67	130.0	87.2	77	22427		
25	27113	X3701	3	67	126.7	85.0	82	22419		
26	27114	X3701	12	67	126.7	85.0	80	22431		
27	27115	X3701	14	67	126.7	85.0	82	22432		
28	27116	X3701	11	67	126.7	85.0	87	22430		
29	27117	X3701	11	67	128.3	86.1	73	22425		
30	27125	V99XX	3	97	7.3	7.1	179	22413		
31	27126	201	143	93	3.2	3.0	160	22415		
PAGE TOTALS										

LAST PAGE  
GRAND TOTALS

LE U - LE U235 -



MATERIAL FOR SPECIAL PREPARATION FORM

MSA/ITEM	PHYSICAL	CHEMICAL	RADIATION MR/HR SFC	ISOTOPE/S	Z	U	U235	GROSS	SEAL	AREA	LE2
27132	W11-V84	0	.2		97	97.8	96.4	61	22435		
27133	V9966	24	.2		MIX	94.2	92.0	64	22438		
27134	V8459	14	.1		"	98.6	92.3	62	22433		
27135	W11-V32	21	.2		"	97.8	95.5	60	22446		
27154	Z01		.1		93	1.0	1.0	145	22418		
27151-1	Z01		.2		93	5.8	5.4	125	22417		
27158	Z01		.3		93	24.0	22.0	183	22416		
27201-1	Z01		.1		93	1.7	1.6	120	22413		
27201-2	Z01		.1		93	7.7	7.2	216	22414		
27203-2	Z01		.3		93	26.0	24.0	154	22421		
27205	Z01		.3		93	9.1	8.5	128	22411		
27239	W11-V98XX	0	.2		93	62.4	58.0	110	22429		
27284-1	Z01		.1		93	10.5	9.8	146	22455		
27284-3	Z01		.2		93	19.3	18.0	241	22454		
23861	X3701	9	.3		67	87.8	58.8	50	22407		
26493	V9857	0	.1		93	9.7	9.0	208	22408		
26604	V9963	3	.1		97	18.4	18.0	86	22402		
26605	V9963	9	.1		97	15.4	15.0	80	22404		
26612	V9963	0	.1		97	20.6	20.0	164	22397		
26611	V9963	18	.1		97	12.4	12.0	194	22398		
26640	V9858	0	.3		93	1.0	1.0	108	22406		
26770	V9854	9	.1		93	3.2	3.0	100	22399		
27284-2	Z01		.3		93	27.0	25.0	195	22420		
26957	MIX	10	.3		MIX	98.9	96.1	91	22405		
27104	X3701	0	.2		67	120.8	81.0	88	22403		
27180	Z01		.3		93	280.6	241.0	78	22394		
27187-4	Z01	9	.1		93	.1	.1	480	22396		
27201-3	Z01		.1		93	46.2	43.0	190	22395		
27242-1	V98XX	25	.3		93	12.9	12.0	160	22401		
27242-2	V98XX	9	.1		93	12.3	11.5	144	22409		
27242	Z01		.1		93	1.0	1.0	2534			
27243	Z01		.1		93	1.6	1.6	1635			
2724371	Z01		.1		93	1.0	1.0	1849			
PAGE TOTALS											

LAST PAGE  
GRAND TOTALS

LE2 U -  
LE U235 -  
LE U235 -

Company Name: **UNIC RECOVERY SYSTEMS, INC.**  
 Address: **ONE MARRACANSETT TRAIL**  
**WILM RIVER, CT, 06094**  
 Contact: **J.H. L'HEUREUX**  
 Phone #: **401-364-7701**

Operating by: **CHEM-NUCLEAR SYSTEMS, INC.**  
 P.O. Box 726 Barnwell, South Carolina 29812  
 (803) 259-1781  
**RADIOACTIVE SHIPMENT RECORD FORM**  
 Page **1** of **4**  
 (4) Volume Allocation No: **1A-80-10-A**

Shipping Date: **Dec 17, 1980**  
 Shipper's No: **110**  
 Type of Case: **N/A**  
 Trailer No: **444-834-44453**  
 LINER SERIAL #: \_\_\_\_\_  
 Arrival Date: \_\_\_\_\_  
 Date/TIME: \_\_\_\_\_  
 Radiation Readings: \_\_\_\_\_  
 Trench #: \_\_\_\_\_  
 Total Personnel Exp: \_\_\_\_\_  
 Project #: \_\_\_\_\_

CARRIER: **TRI-STATE**  
 DRIVER SIGNATURE: **Robert Anderson**  
 DATE AND TIME RECEIVED: **12/17/80 1345**  
 (6) Item No. (7) Radio-nuclide each container (8) Physical form (9) Percent Abundance Each Nucleide (10) Chemical form (11) Waste Description (12) U-235 (grams) (13) U-238 Th-232 (pounds) (14) Disposable Container Weight (pounds) (15) Disposable Container Volume (Cu Ft) (16) Container Spec. (17) Radiation Levels Disposable Container Surface (18) Radiation Levels 3 Ft. (19) Trans- port Group (20) Label Used

(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
Item No.	Radio-nuclide each container	Percent (or) Abundance Each Nucleide	Physical form	Chemical form	Waste Description	U-235 (grams)	U-238 Th-232 (pounds)	Disposable Container Weight (pounds)	Disposable Container Volume (Cu. Ft.)	Container Spec.	RADIATION LEVELS Disposable Container Surface Package Surface 3 Ft. Surface	Removable Contamination Package Surface (a) DPM/100-m <sup>2</sup> (B-Y)	Transport Group	Label Used
26492	135	93	Solid	Oxide	Misc waste	6.4	N/A	108	7.5	55 gallon	1.1	12	II	L5A
26493	135	99			Misc waste	1		118			1.2	9		L5A
26494	135	93			Misc waste	8.0		152			1.1	3		L5A
26495	135	93			Misc waste	8.0		158			1.1	0		L5A
26496	135	93			Misc waste	1.0		248			1.1	0		L5A
26497	135	93			Misc waste	5.8		98			1.2	9		L5A
26498	135	93			Misc waste	13.6		122			1.2	9		L5A
26499	135	93			Filters	3.3		137			1.2	6		L5A
26500	135	93			Waste	9.8		140			1.2	0		L5A
26501	135	93			Waste	8.2		67			1.1	6		L5A
26502	135	67			Caland Ref	48.8		104			1.1	0		L5A
26503	135	67			Caland Ref	97.9		87			1.2	0		L5A
26504	135	67			Caland Ref	97.5		99			1.2	0		L5A
26505	135	67			Caland Ref	98.0		88			1.2	0		L5A
26506	135	67			Caland Ref	87.5		76			1.1	0		L5A
26507	135	67			Caland Ref	83.8		50			1.1	0		L5A
26508	135	67			Caland Ref	78		54			1.1	0		L5A
26509	135	67			Caland Ref	68		84			1.1	0		L5A
26510	135	67			Caland Ref	87.1		84			1.1	0		L5A
26511	135	67			Caland Ref	87.0		192			1.3	0		L5A
26512	135	67			Caland Ref	25.4		150			1.3	0		L5A
26513	135	67	Solid	Oxide	Caland Ref	98.1	N/A	84	7.5	55 gallon	1.3	4	II	L5A
26514	135	67			Caland Ref	98.1		2192	150		2.0		II	L5A
26515	135	39.245											II	L5A

21

TOTAL



(1) FROM Company Name UNC RECOVERY SYSTEMS BARNWELL WASTE MANAGEMENT FACILITY

Address ONE NARRAGANSETT TRAIL  
WOOD RIVER JET, RI 02894

Contact J.H. L'HEUREUX

(2) Phone # 401-364-7701

TO CHEM-NUCLEAR SYSTEMS, INC.

ATT: JO STILL

Operated by: CHEM-NUCLEAR SYSTEMS, INC.

P. O. Box 726 Barnwell South Carolina 29812  
(803) 259-1781

RADIOACTIVE SHIPMENT RECORD FORM

Page 2 of 4

(4) Volume Allocation No 12-80-110-A

(5) Shipping Date Dec. 17, 1980

Shipment No 110

Type of Cask N/A

Trailer No 830-144338

LINER SERIAL =

CNSI USE ONLY

Arrival date AS#  
Date/Time By  
Radiation Readings Weight  
Trench # LOC WCC  
Total Personnel Exp (mRem)  
Project #

CARRIER TRI-STATE

DRIVER SIGNATURE Robert W. L'Heureux

DATE AND TIME RECEIVED 12/17/80 12:50 PM

(3) - (a) Description of Materials

(b) RADIOACTIVE MATERIAL LSA N.O.S.  
(c) RADIOACTIVE MATERIAL N.O.S.  
(d) RADIOACTIVE MATERIAL SPECIAL FORM N.O.S.  
(e) RADIOACTIVE DEVICE N.O.S. RAD MATERIAL

(f) Total # of Pkgs This Shipment 64  
(g) Total Activity This Shipment 422469 mCi  
(h) Total Volume This Shipment 83.5 cu ft  
(i) Type Containers This Shipment DOT SPEC 110 50560

(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)			
Item No.	Radio-nuclide each container	Percent (or) Abundance Each Nuclide	Activity Each Nuclide (mCi)	Physical form	Chemical form	Waste Description	U-235 (grams)	U-238 Th-232 (pounds)	Disposable Container Weight (pounds)	Disposable Container Volume (Cu. Ft.)	Container Spec.	RADIATION LEVELS Disposable Container Surface Package Surface 3 Ft (Tl)	Removable Contamination Package Surface (x) DPM/100cm <sup>2</sup> (B-Y)	Transport Group	Label Used		
27108	U-235	67	3.5752	Solid	Oxide	Calumet Ref 37.2	N/A	83	7.5	55 gallon		.2	4.1	6	0	III	II
27109		67	3.5752			Calumet Ref 37.2		88				.2		3	44		II
27110		67	3.5752			Calumet Ref 37.2		87				.1		3	0		II
27111		67	3.5752			Calumet Ref 37.2		77				.2		3	0		II
27113		67	3.485			Calumet Ref 35		82				.1		4	0		II
27114		67	3.5014			Calumet Ref 35		80				.2		12	0		II
27115		67	3.485			Calumet Ref 35		82				.1		18	0		II
27116		67	3.485			Calumet Ref 35		87				.2		6	77		II
27117		67	3.5361			Calumet Ref 26.1		73				.2		6	77		II
27125		77	.6461			Misc Waste 7.1		179				.1		3	143		LSA
27126		78.45	.15			Trashy 3.0		100				.1		4	99		LSA
27132		97	2.6814			Calumet Ref 35.4		61				.2		9	0		II
27133		97	6.44			Calumet Ref 92.0		64				.2		24	22		II
27134		97	6.811			Calumet Ref 97.3		62				.1		4	22		II
27135		97	6.685			Calumet Ref 95.5		60				.2		21	88		II
271544		78.45	.05			Misc waste 1.0		145				.1		9	88		LSA
27151-1		78.45	.27			Misc waste 5.4		135				.2		6	0		LSA
27158		78.45	1.1			Misc waste 22.0		183				.2		6	0		I
27201-1		78.45	1.08			Misc waste 1.4		120				.1		9	0		LSA
27201-2	U-235	78.45	.36	Solid	Oxide	Filter 7.2	7.2	214	7.5	55 gallon		.1	4.1	30	132	III	LSA
		83.09				134.4	N/A	2114	150			.1	2.0				

(22) ☒ Yes ( ) No THIS VEHICLE IS CONSIGNEE EXCLUSIVE USE. LOADING AND UNLOADING MUST BE ACCOMPLISHED BY CONSIGNOR OR CONSIGNEE OR HIS DESIGNATED AGENT

(23) IMPORTANT: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation

Signature

Company UNC RECOVERY SYSTEMS

Date 12/17/80

(24) Certification is hereby made to the South Carolina Department of Health and Environmental Control that this shipment of low-level radioactive waste has been inspected in accordance with the requirements of South Carolina Radioactive Material License No. 097 as amended and the Nuclear Regulatory Commission's License No. 46-13536-01 as amended and the effective Garwood Site Disposal Criteria within 48 hours prior to shipment and further certification is made that the inspection revealed no basis of non-compliance with all applicable laws, regulations and requirements

Date

Signature Mr. Quality Assurance - UNC RECOVERY SYSTEMS

Form No. 135-201

File and Organization 401-364-7701

(1) FROM Company Name UNIC RECOVERY SYSTEMS **BARNWELL WASTE MANAGEMENT FACILITY**

Address ONE NARRAGANSETT TRAIL  
WOOD RIVER ST, RI 02894

Contact J. H. L'HEUREUX

(2) Phone # 401-364-7701

(3) CHEM-NUCLEAR SYSTEMS, INC.  
ATT: JO STILL

Operated by: **CHEM-NUCLEAR SYSTEMS, INC.**

P. O. Box 726, Barnwell, South Carolina 29812  
(803) 259-1781

**RADIOACTIVE SHIPMENT RECORD FORM**

Page 3 of 4

(4) Volume Allocation No. 12-80-110-A

(5) Shipping Date Dec 17, 1980

Shipment No. 110

Type of Case N/A

Trailer No. 83-444538

LINER SERIAL #

**CNSI USE ONLY**

Arrival Date \_\_\_\_\_ AS# \_\_\_\_\_

Date/Time \_\_\_\_\_ By \_\_\_\_\_

Radiation Readings \_\_\_\_\_ Weight \_\_\_\_\_

Trench # \_\_\_\_\_ LOC \_\_\_\_\_ WCC \_\_\_\_\_

Total Personnel Exp. \_\_\_\_\_ (mRem)

Project # \_\_\_\_\_

CARRIER TRI-STATE

DRIVER SIGNATURE Robert L'Heureux

DATE AND TIME RECEIVED 12/17/80 12:00 PM

(a) Description of Materials

☐ RADIOACTIVE MATERIAL (L.S.A. N.O.S.)  
☐ RADIOACTIVE MATERIAL (N.O.S.)  
☐ RADIOACTIVE MATERIAL SPECIAL FORM (N.O.S.)  
☐ RADIOACTIVE DEVICE (N.O.S. RAD. MATERIAL)

(b) Total # of Pkgs This Shipment

64

(c) Total Activity This Shipment

102.349 mCi

(d) Total Volume This Shipment

830.5 cu ft

(e) Type Containers This Shipment

255 GAL DRUMS

(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)		
Item No.	Radio-nuclide each container	Percent Abundance Each Nuclide	(or) Activity Each Nuclide (mCi)	Physical form	Chemical form	Waste Description	U-235 (grams)	U-238 Th-232 (pounds)	Disposable Container Weight (pounds)	Disposable Container Volume (Cu. Ft.)	Container Spec.	RADIATION LEVELS		Removable Contamination Package Surface (a) DPM/100cm <sup>2</sup> (B-Y)	Transport Group	Label Used
												Disposable Container Surface	Package Surface 3 Ft. (Tl)			
22303-2	U-235	78.45	1.2	Solid	Oxide	Misc Waste	34	N/A	5.5	2.5	55 gallon	.2	45	11	III	I
22305		78.45	.425			Fil Radio	8.5		2.4			.3	6	0		ISA
22307		93	2.7			Unknown Res	58		112			.2	0	0		II
22307-1		78.45	.99			Misc Waste	9.8		144			.1	18	110		ISA
22307-2		78.45	.9			Misc Waste	18		241			.2	15	55		I
23301		67	1.47			Unknown Res	58.8		20			.3	9	0		II
24403		93	1.315			Misc Waste	9		50.8			.1	0	0		ISA
24404		99	1.638			Fil Radio	18		86			.1	3	64		I
24405		99	1.365			Fil Radio	12		80			.1	9	33		II
24412		99	1.83			Misc Waste	20		164			.1	0	0		I
24411		99	1.022			Misc Waste	12		194			.1	18	64		ISA
24440		93	1.07			Misc Waste	1		109			.2	0	0		ISA
24490		93	.21			Misc Waste	3		160			.1	9	44		ISA
27387-2		78.45	1.25			Misc Waste	45		125			.2	9	0		I
26857		99	3.265			Unknown Res	96.1		71			.2	6	0		II
27104		67	3.625			Unknown Res	9		88			.2	0	0		II
27180		78.45	1.305			Fil Radio	20		79			.3	0	0		II
27187-4		77.30	1.005			Mech	.1		450			.1	9	0		ISA
27301-3		78.45	2.15			Misc Waste	45		190			.1	30	0		I
27342-1	U-235	78.45	.4	Solid	Oxide	Misc Waste	12		160	2.5	55 gallon	.2	33	0	III	ISA
		41.436					773.3	N/A	3051	150		2.0				

(22) ☒ Yes ( ) No THIS VEHICLE IS CONIGNED EXCLUSIVE USE LOADING AND UNLOADING MUST BE ACCOMPLISHED BY CONSIGNOR OR CONSIGNEE OR HIS DESIGNATED AGENT

(23) IMPORTANT: This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation

Signature

Company UNIC RECOVERY SYSTEMS

Date 12/17/80

(24) "Certification is hereby made to the South Carolina Department of Health and Environmental Control that this shipment of low-level radioactive waste has been inspected in accordance with the requirements of South Carolina Radioactive Material License No. 097 as amended, and the Nuclear Regulatory Commission License No. 46-13536-01 as amended, and the effective Barnwell Site Disposal Criteria within 48 hours prior to shipment, and further certification is made that the inspection revealed no items of non-compliance with all applicable laws, rules, and regulations."

Date 12/17/80

By

Title and Organization JOE QUALITY ASSURANCE-UNIC RECOVERY SYSTEMS

Telephone No. 401-364-7701

Form No. CNS 201

(Rev. 8-80)

UNCLAS USE ONLY

Shipping Date Dec 17, 1980

Shipment No. 110

Type of Cask N/A

Trailer No. 44-837-44538

LINEAR SERIAL # \_\_\_\_\_

Actual Date \_\_\_\_\_

Date/Time \_\_\_\_\_

By \_\_\_\_\_

Weight \_\_\_\_\_

LOC \_\_\_\_\_

WOC \_\_\_\_\_

Total Personnel Exp \_\_\_\_\_ (m/sum)

Project # \_\_\_\_\_

Operating by: **CHEM-NUCLEAR SYSTEMS, INC.**

P O Box 726, Barnwell, South Carolina 29812

(803) 259-1781

RADIOACTIVE SHIPMENT RECORD FORM

Page 4 of 4

(4) Volume Allocation No. 12-80-10-A

Company Name: **WARRIOR NUCLEAR SYSTEMS, INC.**

Address: **WARRIOR NUCLEAR SYSTEMS, INC.**

City: **WARRIOR, RI 02894**

Contact: **J. H. L'HEUREUX**

Phone: **401-364-7701**

To: **CHEM-NUCLEAR SYSTEMS, INC.**

ATTN: **TO STILL**

CARRIER: **TRISTATE**

DRIVER SIGNATURE: **W. H. L'Heureux**

DATE AND TIME RECEIVED: **12/17/80 12:00 PM**

(2) TO: **CHEM-NUCLEAR SYSTEMS, INC.**

(21) TOTAL: **13519**

(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
Item No.	Radio-nuclide each container	Percent Abundance Each Nuclide (mCi)	Physical form	Chemical form	Waste Description	U-235 (grams)	U-238 Th-232 (pounds)	Disposable Container Weight (pounds)	Disposable Container Volume (Cu. Ft.)	Container Spec.	RADIATION LEVELS Disposable Package Container Surface (mR/hr)	Removable Contamination Package Surface (a) DPM/100cm <sup>2</sup> (B-Y)	Transport Group	Label Used
Box 42	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	2534	13.5	Box	1.1	11.4	III	LSA
Box 43	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1635	13.5	Box	1.1	9	III	LSA
Box 39	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 40	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 41	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 44	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 45	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 46	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 47	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 48	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 49	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 50	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 51	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 52	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 53	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 54	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 55	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 56	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 57	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 58	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 59	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 60	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 61	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 62	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 63	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 64	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 65	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 66	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 67	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 68	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 69	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 70	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 71	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 72	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 73	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 74	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 75	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 76	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 77	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 78	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 79	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 80	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 81	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 82	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 83	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 84	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 85	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 86	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 87	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 88	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 89	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 90	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 91	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 92	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 93	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 94	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 95	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 96	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 97	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 98	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 99	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 100	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 101	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 102	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 103	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 104	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 105	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 106	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 107	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 108	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 109	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 110	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 111	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 112	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 113	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 114	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 115	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 116	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 117	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 118	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 119	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 120	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 121	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 122	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 123	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 124	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 125	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 126	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 127	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 128	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 129	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 130	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 131	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549	13.5	Box	1.1	5.4	III	LSA
Box 132	U-235	77.37	Solid	Oxide	Enriched	1.0	N/A	1549						



## STRAIGHT BILL OF LADING—SHORT FORM—Original—Not Negotiable

RECEIVED, subject to the classifications and tariffs in effect on the date of issue of this Original Bill of Lading.

The property described herein is received in apparent good order, subject to noted contents and condition of contents of packages unknown, marked, consigned and delivered as indicated herein, which said carrier shall remain liable for being unimpaired throughout the course of its voyage and delivery of the property under the contract of carriage to its final place of delivery at said destination, if any, or to the consignee in the event of a change of destination. It is mutually agreed, as to each carrier or set of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading and Rules (1) in Official, Southern, Western and Illinois Freight Classifications in effect on the date hereof, if this is a rail-water shipment; or (2) in the applicable water carrier classification in effect if this is a water carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, and binds to the classification of tariff which governs the transportation of the shipment, and the said terms and conditions are hereby agreed to by shipper and accepted by carrier and its agents.

CARRIER'S NO.

3673

SHIPPER'S NO.

78

From **UNITED NUCLEAR CORPORATION**☐ NEW HAVEN, CONN. ☒ WOOD RIVER JCT., R. I.☐ MONTVILLE, CONN. ☐ HEMATITE, MO.

DATE SHIPPED

12/19/80

NAME OF CARRIER

TRI-STATE (EXCLUSIVE USE)

CONSIGNEE TO

(Mail or street address of consignee—For purposes of notification only.)

CHEM NUCLEAR SYSTEMS, INC.

DESTINATION

STATE

COUNTY

P.O. BOX 726

DELIVERY ADDRESS

(To be filled in only when shipper desires and governing tariffs provide for delivery thereat.)

BARNWELL, SC 29812

ROUTE

ATTN.: JO STILL

DELIVERING CARRIER

CAR OR VEHICLE INITIALS NO.

TRI-STATE (EXCLUSIVE USE)

Subject to Section 7 of conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:

The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

UNITED NUCLEAR CORPORATION

(Signature of consignor.)

If charges are to be prepaid, write or stamp here, "To be Prepaid."

TO BE PREPAID

Rec'd \$ to apply in prepayment of the charges on the property described herein.

Agent or Cashier,

For (The signature here acknowledges only the amount prepaid.)

Charges advanced:

NUMBER PACKAGES	KIND OF PACKAGE, DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	*WEIGHT (Subject to Correction)	CLASS or RATE	Check Column
	RADIOACTIVE MATERIAL LSA NOS			
	Total gms. U-235 - 7.0			
	millicuries .35			
	Total <del>XXXXXXXXXXXXXXX</del>			
	Total weight: 13,183 lbs.			
	Cubic feet - 875			
7	Boxes containing radioactive material LSA NOS	13,183		
	Exempt from labeling			
	Boxes marked "RADIOACTIVE LSA"			
	Document: FBY-VAQ-84			
	<del>XXX</del> PLACARDS REQUIRED			

SPECIAL INSTRUCTIONS:

"DO NOT OPEN IN TRANSIT. SHIPMENT TO BE UNLOADED BY CONSIGNEE ONLY."

*John Smith*

INV. NO.

\*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight."  
NOTE—When the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.  
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

"Shipper's imprint in lieu of stamp; not a part of bill of lading approved by the Interstate Commerce Commission"

UNITED NUCLEAR CORPORATION, Shipper, Per

Permanent post-office address of shipper, NEW HAVEN, CONN.

This is to certify that the above articles are properly described by name and are packed and marked and are in proper condition for transportation according to the regulations prescribed by the Interstate Commerce Commission.

Agent, Per

B/L No. 6293



3673

## FACTORY SHIPPING ORDER

UNC RECOVERY SYSTEMS

One Narragansett Trail • Wood River Junction, Rhode Island 02894 • Phone 401/364-7701

No. 3673

SHIP TO: CHEM NUCLEAR SYSTEMS, INC.

P.O. BOX 726

BARNWELL, SC 29812

ATTN.: JO STILL

SHIP VIA: TRI-STATE (EXCLUSIVE USE)

SHIP

☒ PREPAID☐ COLLECT

CASES

7 boxes

WEIGHT

13,183 lbs.

B/L NO.

6293

CAR NO.

PRO. OR WAYBILL NO.

SHIPPING REPORT

COMPLETE

PARTIAL

PARTIAL NO.

CHARGE NO.

SHIP AGAINST P.O. NO.

CONTRACT NO.

CUSTOMER P.O. NO.

X56

REASON FOR SHIPMENT

MISC. WASTES FOR BURIAL

QUANTITY	UNIT	PART NO. OR DRAWING NO.	SERIAL NO. OR DOCUMENT NO.	DESCRIPTION	QUANTITY SHIPPED	WEIGHT
7	boxes	'STC'		RADIOACTIVE MATERIAL LSA NOS Containing radioactive material LSA NOS Total gms. U-235 7.0 millicuries .35 Total <del>XXXXXXXXXXXX</del> Total Weight: 13,183 lbs. Cubic Feet- 875 Document: FBY-VAQ-84 PLACARDS REQUIRED Exempt from labeling Boxes <del>Boxes</del> marked "RADIOACTIVE LSA"		

REMARKS OR SPECIAL INSTRUCTIONS:

"DO NOT OPEN IN TRANSIT. SHIPMENT  
TO BE UNLOADED BY CONSIGNEE ONLY."

ORIGINATOR

J. H. L'HEUREUX

DATE

12/19/80

DEPARTMENT

9912

DECLARED VALUE

DATE REQUIRED AT DESTINATION

LOCATION OF MATERIAL

PACKED BY

CHECKED BY

APPROVED BY

DATE

12/19/80

DATE SHIPPED

12/19/80

SHIPPED BY

J. H. L'HEUREUX

# RADIOACTIVE MATERIAL BURIAL SHIPMENT VEHICLE INSPECTION CHECK LIST

SHIPMENT NO: 111  
CARRIER: TRI-STATE  
TRAILER ID: 440 834  
DESTINATION: BARNWELLS C

INSPECT EACH VEHICLE AND SHIPMENT PER SOP III-H, QP-5.411, AND THIS FORM

ITEM NO.	ITEM DESCRIPTION	INSPECTOR'S INITIALS/DATE	NOTES
1	<u>PRELOADING INSPECTION</u>		
1.1	FLOOR, WALLS, CEILING DRY	AD 12/19/80	Front wall doors wet
1.2	NO HOLES OR LEAKS IN TRAILER	AD 12/19/80	First floor plate on roof
1.3	NO LOOSE MATERIAL (DIRT)	AD 12/19/80	need to be swept
1.4	✓ NO RADIOACTIVE CONTAMINATION EXCEEDING RELEASE LIMITS	AD 12/19/80	
1.5	FLOOR COVERED PER SOP III-H	AD 12/19/80	
2	<u>POST LOADING INSPECTION</u>		
2.1	UNIFORM LOADING	AD 12/19/80	
2.2	CRATES AND DRUMS NOT INTER-MIXED	AD 12-19-80	
2.3	MIN. 3" CLEARANCE BETWEEN CRATES AND VEHICLE SIDES	AD 12-19-80	
2.4	SIDE BY SIDE SMALL CRATES FASTENED TOGETHER (BARNWELL SHIPMENTS ONLY)	NA	
2.5	ADEQUATE SHORING TO PREVENT LOAD SHIFTING	AD 12-19-80	
2.6	NIS CONTAMINATION CLEARANCE	AD 12/19/80	
2.7	PHOTOGRAPH OF LOADED TRAILER	AD 12/19/80	
2.8	LOAD AND SHIPPING PAPERS AGREE	AD 12/19/80	

# RADIOACTIVE MATERIAL BUHAL SHIPMENT VEHICLE INSPECTION CHECK LIST

SHIPMENT NO:

PAGE 2 OF 2

ITEM NO.	ITEM DESCRIPTION	INSPECTOR'S INITIALS/DATE	NOTES																																
3	<b>PRERELEASE INSPECTION</b>																																		
3.1	CONTAINER INSPECTION REPORT COMPLETE AND ALL CONTAINERS ACCEPTED	GD 12/19/80																																	
3.2	TRAILER SEALED WITH TAMPER-SAFE SEAL. SEAL NUMBER: 22478	GD 12/19/80																																	
3.3	"RADIOACTIVE" PLACARDS VISIBLE ON ALL FOUR SIDES	GD 12/19/80																																	
3.4	<p>DRIVER POSSESSES AND HAS SIGNED ALL REQUIRED PAPERWORK</p> <table border="0"> <tr> <td>A) RI STATE PERMIT*</td> <td><input checked="" type="checkbox"/></td> <td rowspan="5">MCS MCS MCS MCS MCS</td> </tr> <tr> <td>B) CT STATE PERMIT*</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>C) UNC BILL OF LADING*</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>D) UNC FSO*</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>E) UNC PACKING LIST</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>F) CHEM-NUCLEAR SHIPMENTS</td> <td></td> <td></td> </tr> <tr> <td>    (1) S.C. PNP FORM</td> <td><input checked="" type="checkbox"/></td> <td>MCS</td> </tr> <tr> <td>    (2) S.C. CERTIFICATION FORM*</td> <td><input checked="" type="checkbox"/></td> <td>MCS</td> </tr> <tr> <td>    (3) CHEM-NUC. SHIPMENT RECORD FORM*</td> <td><input checked="" type="checkbox"/></td> <td>MCS</td> </tr> <tr> <td>G) NECO SHIPMENTS</td> <td></td> <td></td> </tr> <tr> <td>    (1) NEV. CERTIFICATION FORM</td> <td><input checked="" type="checkbox"/></td> <td></td> </tr> <tr> <td>    (2) NECO SHIPMENT AND DISPOSAL FORM*</td> <td><input checked="" type="checkbox"/></td> <td></td> </tr> </table> <p>(*SIGNED BY VEHICLE DRIVER)</p>	A) RI STATE PERMIT*	<input checked="" type="checkbox"/>	MCS MCS MCS MCS MCS	B) CT STATE PERMIT*	<input checked="" type="checkbox"/>	C) UNC BILL OF LADING*	<input checked="" type="checkbox"/>	D) UNC FSO*	<input checked="" type="checkbox"/>	E) UNC PACKING LIST	<input checked="" type="checkbox"/>	F) CHEM-NUCLEAR SHIPMENTS			(1) S.C. PNP FORM	<input checked="" type="checkbox"/>	MCS	(2) S.C. CERTIFICATION FORM*	<input checked="" type="checkbox"/>	MCS	(3) CHEM-NUC. SHIPMENT RECORD FORM*	<input checked="" type="checkbox"/>	MCS	G) NECO SHIPMENTS			(1) NEV. CERTIFICATION FORM	<input checked="" type="checkbox"/>		(2) NECO SHIPMENT AND DISPOSAL FORM*	<input checked="" type="checkbox"/>			
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(2) NECO SHIPMENT AND DISPOSAL FORM*	<input checked="" type="checkbox"/>																																		
3.5	TRACTOR AND TRAILER NIS RELEASED	NIS K. Helgen 12/19/80																																	
4	VEHICLE AND LOAD ARE ACCEPTABLE AND RELEASED FOR SHIPMENT																																		

OPERATIONS  
QUALITY ASSURANCE  
COMPLIANCE

SIGNATURE

DATE

*[Handwritten Signature]*  
*[Handwritten Signature]*  
*[Handwritten Signature]*

12-19-80  
12-19-80  
12/19/80

12/19/80

# Attachment to Inspection Checklist

The front wall of the trailer showed areas where water had leaked through holes or seams, ran down the wall and onto the floor. An area roughly  $9 \text{ ft}^2$  on the floor was wet; there was no 'free-standing' water. There were several areas on the truck roof which had been patched. It could not be determined if the patchwork was done prior to or after the water leaked in.

A ~~visual~~ inspection showed no daylight coming through the roof and no apparent apertures outside of the trailer.

UNC placed two 4' sections of plywood at the front of the trailer, covering the wet spot, prior to the normal floor-covering procedure.

J. 12/19/80

cc J. Roth, NAC  
J. Ott, CNI



STATE OF RHODE ISLAND  
DIVISION OF PUBLIC UTILITY & CARRIERS  
PROVIDENCE, RHODE ISLAND

PERMIT NO.: 533

EFFECTIVE DATE: 12/19/80  
EXPIRATION DATE: 12/19/80

TRANSPORTATION PERMIT FOR RADIOACTIVE MATERIALS

CARRIER

TRI STATE MOTOR TRANSIT

THIS SHIPMENT SUBJECT TO NRC REGULATIONS

ADDRESS

P.O. BOX 113, JOPLIN, MO

DOCKET NO. 70-820

The permittee is authorized to transport the following shipment in consonance with this Division's rules and regulations pertaining to such shipment.

TRACTOR:

MAKE  
KENNORTH

YEAR  
1979

REGISTRATION  
PO 26929

STATE  
IL

TRAILER:

MAKE  
FRUEHAUF

YEAR  
1966

REGISTRATION  
440-189

STATE  
MO

DIMENSIONS:

Length  
L

Width  
L

Height  
L

Weight  
L

DRIVER'S NAME  
H. SMITH

SHIPMENT DATE  
12/19/80

TIME  
1030 HRS

MAJOR ISOTOPES  
U-235

QUANTITY (COPIES)  
less than .03 CURIES

REQUIRED LABEL  
L.S.A.

ORIGIN (CITY, STATE & FACILITY)  
UNC RECOVERY SYSTEMS, WOOD RIVER JCT, RI

DESTINATION (CITY, STATE & FACILITY)  
CHEM-NUCLEAR SYSTEMS, BARNWELL, SC

VIA ROUTES

91-216-195



PERMIT ISSUED BY: LR  
DATE OF ISSUE: 12/19/80

NO MOVEMENTS PERMITTED DURING HOURS 7-9:00 A.M. AND 4-6:00 P.M.

TRANSMIT PERMIT TO:

OVERSIZE OVERWEIGHT VEHICLE

DEPARTMENT OF TRANSPORTATION

00333

Permit is hereby granted to transport the load as specified below. Load to be reasonable.  
 PROCEED TO THE NEXT STATION. Permit is valid only on the route specified.

12-19-80 12-19-80 12-19-80 Trans 401-364-7701 X 49

Tri-State Motor Transit  
 P.O. Box 113  
 Joplin, MO 64801

UNC Recovery Systems

Radioactive Material

Gross weight and dimensions are legal. Shipper: UNC Recovery Systems  
 UNC Recovery Systems, Wood River Junction, RI to Chem-Nuclear Systems, Bannwell, SC  
 Routes: I-95 south, 52 north, 2 west, I-84 west  
 Tractor: PO26929, IL, Color: Red/black, Make: Kenworth, Year: 1979  
 Trailer: 440-189, MO, Color: Silver, Make: Fruehauf, Year: 1966  
 Isotopes: U-235 Curies: less than .03 Label: LSA  
 Driver's name: N. Smith, anticipating move 12-19-80 time 10:30 a.m.  
 Contacted State Police 12-19-80 time 10:30 a.m. by Alma Sargeant & Dispatcher Smedyk.

☐ Daylight ☒ 9 00 A M ☐ 7 00 A M 9 00 A M ☐ 4 00 P M 6 00 P M ☐ No ☐ Front ☐ Rear Required ☐  
☐ 4 00 P M Only ☐ Not permitted ☐ Not permitted ☐ Restriction

OFFICE USE ONLY ☐ Base Permit Fee \$15 00 ☐ Wire Transmission Fee \$2 00 ☐ Annual Fee (30% of Conn. Registration) ☐ No Charge \$25.00 - paid

LIMITATIONS

1. Vehicle shall be operated at a safe rate of speed under favorable weather and road conditions.
2. Permit covers State highways and State bridges only.
3. Gross load may not exceed posted capacity of any bridge.
4. Permit does not exonerate the permittee from legal liability or responsibility for damages to any highway, street or bridge resulting from use of the vehicle described below.
5. Permit is void after expiration date and on Saturdays, Sundays and holidays.
6. No further permit will be issued unless this permit is duly signed, dated, and returned to this office within one week after the expiration date.
7. Permit is confirmation of the existence of such permit must be on vehicle while on state highways.

# 111

10401

# MATERIAL FOR FURIAL PREPARATION FORM

13A/ITEM	PHYSICAL	CHEMICAL	RADIATION SEC	3 CT	ISOTOPE/S	Z	U	GROSS SEAL	AREA	LE2
1 13A/14	Z01		0.2	4.0			1.0	2281		1
2 13A/17	Z01		0.2				1.0	1699		2
3 13A/21	Z01		0.2				1.0	1969		3
4 13A/12	Z01		0.2				1.0	1659		4
5 13A/11	Z01		0.2				1.0	990		5
6 13A/13	Z01		0.2				1.0	2247		6
7 13A/18	Z01		0.2				1.0	2438		7
8										8
9										9
10										10
11										11
12										12
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PAGE TOTALS										

LE 2 0235 -  
LE 0235 -

LAST PAGE  
GRAND TOTALS

# HEALTH PHYSICS RADIOLOGICAL SURVEY REPORT

SURVEYED BY: N/Venue DATE: 12-12-80  
VEHICLE SURVEY: NA DATE: 12-12-80  
MATERIAL RELEASED BY: N/Venue DATE: 12-12-80  
SURVEY DESCRIPTION: BURIAL #111  
INSTRUMENT (S): N/A

No.	OBJECT OR DESCRIPTION	ALPHA COUNTING			CPM	DPM	BETA COUNTING			DPM	INSTR. SERIAL HR/HR GR. SER. DATE
		BKG	NET CPM	EFF.			BKG	NET CPM	EFF.		
1	Box #18	4	2.0	3.0	24	6.0	28.0	0	11.0	0	10-2 NR/HA 12-12
2	18	2	0	1.0	36	1.0	1	8	8.0	0	
3	18	5	0	1.5	41	1.5	14	14	15.0	154.0	
4	18	0	0	0	34	0	6	6	6.0	66.0	
5	18	0	0	0	17	0	1	1	1.0	11.0	
6	Box #13	2	0	0	32	0	7	7	7.0	74.0	
7	13	2	0	0	38	6.0	10	10	10.0	110.0	
8	13	1	0	1.0	23	1.0	0	0	0	0	
9	13	1	0	0	15	0	0	0	0	0	
10	Box #11	3	0	1.0	23	0	0	0	0	0	
11	11	4	0	1.0	23	0	0	0	0	0	
12	11	1	0	3.0	22	3.0	5	5	5.0	55.0	
13	11	0	0	0	21	0	3	3	3.0	33.0	
14	Box #12	2	0	6.0	26	6.0	0	0	0	0	
15	12	2	0	6.0	28	6.0	0	0	0	0	
16	12	1	0	6.0	14	6.0	0	0	0	0	
17	12	3	0	7.0	32	7.0	0	0	0	0	
18	Box #21	0	0	0	27	0	0	0	0	0	
19	21	3	0	9.0	28	9.0	0	0	0	0	
20	21	0	0	0	30	0	0	0	0	0	
21	21	3	0	0	38	0	0	0	0	0	
22	21	1	0	0	32	0	0	0	0	0	
23	Box #17	0	0	0	30	0	0	0	0	0	
24	17	1	0	3.0	31	3.0	0	0	0	0	
25	17	0	0	0	30	0	0	0	0	0	
26	17	0	0	0	27	0	0	0	0	0	
27	17	2	0	0	27	0	0	0	0	0	
28	Box #14	4	0	0	30	0	0	0	0	0	
29	14	0	0	0	24	0	0	0	0	0	
30	14	4	0	12.0	32	12.0	0	0	0	0	
31	14	5	0	15.0	27	15.0	0	0	0	0	
32	14	0	0	0	25	0	0	0	0	0	
33	Box #14	0	0	0	39	0	0	0	0	0	
34	14	0	0	0	29	0	0	0	0	0	
35	14	0	0	0	29	0	0	0	0	0	

[illegible]



# HEALTH PHYSICS RADIOLOGICAL SURVEY REPORT

SURVEYED BY: N/Know DATE: 12-1980 VEHICLE SURVEY: YES DATE: 12/19/80  
 INSTRUMENT (S): NLS MATERIAL RELEASED BY: ALG DATE: 12/19/80  
 SURVEY DESCRIPTION: DECEASE # 111

No.	OBJECT OR DESCRIPTION	CPM	ALPHA COUNTING		DPM	BETA COUNTING		DPM	INSTR. SURVEY MR/HR OR CPM DATE
			BKG	NET CPM		BKG	NET CPM		
1	TRUCK BED BEFORE	2	2.0	0	0	180	7	77.0	
2	" "	0	0	0	0		7	22.0	
3	" "	2	0	0	0		5	55.0	
4	" "	3	1	1.0	1.0		0	0	
5	" "	0	0	0	0		0	0	
6	Vehicle After	5	0	0	0		0	0	
7	" "	0	0	0	0		0	0	
8	" "	2	0	0	0		0	0	
9	" "	1	0	0	0		0	0	
<p>CPM 0.05 min                      1000 50.1                      Rider                      Floor                      Bench                      Back                      Top 50.05                      6' from                      expansion joint                      1000 from                      50.05 min</p>									

\*Circled items cleaned and remeasured

(1) FROM: Company Name **UNC RECOVERY SYSTEMS BARNWELL WASTE MANAGEMENT FACILITY**

Address **ONE NARRAGANSETT TRAIL  
WOOD RIVER JCT., RI 02894**

Contact **J. H. L'HEUREUX**

(2) Phone # **401-364-7701**

TO: **CHEM NUCLEAR SYSTEMS**

ATTN: **JO STILL**

CARRIER **TRI-STATE**

DRIVER SIGNATURE *[Signature]*

DATE AND TIME RECEIVED

Operated by: **CHEM-NUCLEAR SYSTEMS, INC.**

P. O. Box 726, Barnwell, South Carolina 29812  
(803) 259-1781

RADIOACTIVE SHIPMENT RECORD FORM

Page **1** of **1**

(4) Volume Allocation No. **1280-401-J**

(5) Shipping Date **12/19/80**

Shipment No. **111**

Type of Case **N/A**

Trailer No. **440834**

LINER SERIAL #

CNSI USE ONLY

Arrival Date \_\_\_\_\_ AS# \_\_\_\_\_  
Date/Time \_\_\_\_\_ By \_\_\_\_\_  
Bundled \_\_\_\_\_  
Radiation Readings \_\_\_\_\_ Weight \_\_\_\_\_  
Trench # \_\_\_\_\_ LOC \_\_\_\_\_ WCC \_\_\_\_\_  
Total Personnel Exp \_\_\_\_\_ (mRem)  
Project # \_\_\_\_\_

(3) (a) Description of Materials

☒ RADIOACTIVE MATERIAL LSA, N.O.S.  
☐ RADIOACTIVE MATERIAL N.O.S.  
☐ RADIOACTIVE MATERIAL SPECIAL FORM N.O.S.  
☐ RADIOACTIVE DEVICE N.O.S. RAD MATERIAL

(b) Total # of Pkgs This Shipment

(c) Total Activity This Shipment

(d) Total Volume This Shipment

(e) Type Containers This Shipment

**7**

**0.35 mCi**

**875 cu ft**

**Boxes**

(6) Item No.	(7) Radio-nuclide each container	(8) Percent Abundance Each Nuclide	(9) Activity Each Nuclide (mCi)	(10) Physical form	(11) Chemical form	(12) Waste Description	(13) U-235 (grams)	(14) U-238 Th-232 (pounds)	(15) Disposable Container Weight (pounds)	(16) Disposable Container Volume (Cu. Ft.)	(17) Container Spec.	(18) RADIATION LEVELS Disposable Container Surface Package Surface 3 Ft. (Ti)	(19) Removable Contamination Package Surface (a) DPM/100cm <sup>2</sup> (B-Y)	(20) Transport Group	(21) Label Used
Box 14	U-235	77.37	.05	Solid	Oxide	Equipment	1.0	N/A	2281	125	Box-SRC	0.2 0.2	5.4 55	TL	LSA
17							1.0		1579				1.8 8.8		
21							1.0		1967				2.4 37.4		
12							1.0		1654				2.8 8.8		
11							1.0		990				4.2 17.6		
13							1.0		2247				1.8 4.2		
Box 18	U-235	77.37	.05	Solid	Oxide	Equipment	1.0	N/A	2438	125	Box-SRC	0.2 0.2	4.2 51	TL	LSA
(21) TOTAL							<b>7.0</b>		<b>13193</b>	<b>375</b>		<b>1.4</b>			

(22) ☒ Yes ( ) No THIS VEHICLE IS CONSIGNED EXCLUSIVE USE. LOADING AND UNLOADING MUST BE ACCOMPLISHED BY CONSIGNOR OR CONSIGNEE OR HIS DESIGNATED AGENT

(23) IMPORTANT: This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation

Signature

Company **UNC RECOVERY SYSTEMS**

Date **12/19/80**

(See Reverse Side for Instructions for Completion of This Form)

(24) Certification is hereby made to the South Carolina Department of Health and Environmental Control that this shipment of low-level radioactive waste has been inspected in accordance with the requirements of South Carolina Radioactive Material License No. 097 as amended, and the Nuclear Regulatory Commission's License No. 46-13536-01 as amended, and the effective Barnwell Site Disposal Criteria within 48 hours prior to shipment, and further certification is made that the inspection revealed no items of non-compliance with all applicable laws, rules and regulations

Date **12/19/80**

By

Title and Organization **Assoc. Recovery Personnel, UNC-RS**

Telephone No. **401-364-7701**

Form No. CNS 201

(4-80)

Appendix C

AGENT'S NO.

## STRAIGHT BILL OF LADING—SHORT FORM—Original—Not Negotiable

RECEIVED, subject to the classifications and tariffs in effect on the date of issue of this Original Bill of Lading.

The property described herein, in apparent good order, except as noted hereon and condition of contents of packages unknown, marked, numbered and destined as indicated herein, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if no other route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as in each carrier of all or any of said property and all or any portion of said route to destination, and as to each party at any time interested in any of said property that every carrier to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Through Bill of Lading set forth in Official Southern, Western and Eastern Freight Classifications in effect on the date hereof, if this is a rail or a rail-water shipment, or if on the applicable water carrier classification or tariff if this is a water carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by shipper and accepted for himself and his assigns.

From **UNITED NUCLEAR CORPORATION**☐ NEW HAVEN, CONN. ☒ WOOD RIVER JCT., R. I.☐ MONTVILLE, CONN. ☐ HEMATITE, MO.

DATE SHIPPED

McLean Trucking

NAME OF CARRIER

~~McLean Trucking~~ (EXCLUSIVE USE)

CARRIER'S NO.

3674

SHIPPER'S NO.

78

CONSIGNEE TO

CHEM NUCLEAR SYSTEMS, INC.

(Mail or street address of consignee—For purposes of notification only.)

DESTINATION

P.O. BOX 726

STATE

COUNTY

DELIVERY ADDRESS

BARNWELL, SC 29812

(To be filled in only when shipper desires and governing tariffs provide for delivery thereat.)

ROUTE

ATTN.: JO STILL

DELIVERING CARRIER

CAR OR VEHICLE INITIALS

NO.

~~McLean Trucking~~ (EXCLUSIVE USE) McLean Trucking

NUMBER PACKAGES	KIND OF PACKAGE, DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	*WEIGHT (Subject to Correction)	CLASS or RATE	Check Column
	RADIOACTIVE MATERIAL • LSA • NOS			
1	6.0 gms. U-235 <del>XXXXXXXXXXXXXXX</del> .3 Millicuries 750 cubic feet			
6	Boxes containing radioactive material LSA NOS	13,204 #		
	Total weight: 13,204 lbs.			
	Document: FBY-VAQ-85			
	Boxes marked "RADIOACTIVE LSA"			
	Placards required			

SPECIAL INSTRUCTIONS: "DO NOT OPEN IN TRANSIT. SHIPMENT TO BE UNLOADED BY CONSIGNEE ONLY."

RVNX .40#

Thomas Prater

"This is to certify that the above named property is in conformity with the regulations of the Interstate Commerce Commission."

SHIPPER'S SIGNATURE

INV. NO.

If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight."

NOTE—Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

"Shipper's imprint in lieu of stamp; not a part of bill of lading approved by the Interstate Commerce Commission"

UNITED NUCLEAR CORPORATION, Shipper, Per

Agent, Per

Permanent post-office address of shipper, NEW HAVEN, CONN.

This is to certify that the above articles are properly described by name and are packed and marked and are in proper condition for transportation according to the regulations prescribed by the Interstate Commerce Commission.

B/L No. 6294

# FACTORY SHIPPING ORDER

UNC RECOVERY SYSTEMS

One Narragansett Trail • Wood River Junction, Rhode Island 02894 • Phone 401/364-7701

3674

No. **XX 3674**

SHIP TO: **CHEM NUCLEAR SYSTEMS, INC.**

SHIP VIA: **McLean Trucking** (EXCLUSIVE USE)

**P.O. BOX 726**

**BARNWELL, SC 29812**

**ATTN.: JO STILL**

SHIP ☒ PREPAID ☐ COLLECT

CASES **6 boxes** WEIGHT **13,204 lbs.**

B/L NO. **6294** CAR NO.

PRO. OR WAYBILL NO.

SHIPPING REPORT

COMPLETE PARTIAL PARTIAL NO.

SHIP AGAINST

CHARGE NO. P.O. NO.

CONTRACT NO. CUSTOMER P.O. NO.

**X56**

REASON FOR SHIPMENT

**MISC. WASTES FOR BURIAL (Metal, paper etc. from Process area)**

QUANTITY	UNIT	PART NO. OR DRAWING NO.	SERIAL NO. OR DOCUMENT NO.	DESCRIPTION	QUANTITY SHIPPED	WEIGHT
6	boxes			<p>RADIOACTIVE MATERIAL LSA NOS</p> <p>6.0 gms. U-235</p> <p><del>XXXXXXXXXXXX</del> .3 Millicuries</p> <p>750 cu. ft.</p> <p>Containing radioactive material LSA NOS</p> <p>Total weight: 13,204 lbs.</p> <p>Document: FBY-VAQ-85</p> <p>BOXES MARKED "RADIOACTIVE LSA"</p> <p>PLACARDS REQUIRED</p>		

REMARKS OR SPECIAL INSTRUCTIONS: **"DO NOT OPEN IN TRANSIT. SHIPMENT TO BE UNLOADED BY CONSIGNEE FROM THIS VEHICLE."**

*Thomas M. A.*

ORIGINATOR <b>J. H. L'HEUREUX</b>	DATE	DEPARTMENT <b>9912</b>	DECLARED VALUE	DATE REQUIRED AT DESTINATION
LOCATION OF MATERIAL	PACKED BY		CHECKED BY	
APPROVED BY <i>J. H. L'Heureux</i>	DATE <b>12/19/80</b>	DATE SHIPPED <b>12/19/80</b>	SHIPPED BY <b>J. H. L'HEUREUX</b>	

Distribution: White—Original; Green—Control Copy; Canary—Originator's Copy; Pink—Packing List; Goldenrod—Shipping Copy



STATE OF RHODE ISLAND  
DIVISION OF PUBLIC UTILITY & CARRIERS  
PROVIDENCE, RHODE ISLAND

PERMIT NO.: 534

EFFECTIVE DATE: 12/19/80  
EXPIRATION DATE: 12/19/80

TRANSPORTATION PERMIT FOR RADIOACTIVE MATERIALS

CARRIER

MCLEAN TRUCKING

ADDRESS

NORWICH, CT.

THIS SHIPMENT SUBJECT TO NRC REGULATIONS

DOCKET NO. 70-820

The permittee is authorized to transport the following shipment in consonance with this Division's rules and regulations pertaining to such shipment.

TRACTOR:

MAKE

GMC

YEAR

1980

REGISTRATION

LB 1256

STATE

NC

TRAILER:

MAKE

FRUEHAUF

YEAR

1979

REGISTRATION

M 19065

STATE

NC

DIMENSIONS:

Length

L

Width

L

Height

L

Weight

L

DRIVER'S NAME

T.E. MAULIK

SHIPMENT DATE

12/19/80

TIME

1030 HRS

MAJOR ISOTOPES

U-235

QUANTITY (COPIES)

less than .03 CURIES

REQUIRED LABEL

LSA

ORIGIN (CITY, STATE & FACILITY)

UMC RECOVERY SYSTEMS, WOOD RIVER JCT, RI

DESTINATION (CITY, STATE & FACILITY)

CHEM-NUCLEAR SYSTEMS, BARNWELL, SC

PERMIT ISSUED BY: LR

DATE OF ISSUE: 12/19/80

91-216-195



NO MOVEMENTS PERMITTED DURING HOURS 7-9:00 A.M. AND 4-6:00 P.M.

TRANSMIT PERMIT TO:

**TRANSPORTATION PERMIT  
OVERSIZE OVERWEIGHT VEHICLE**

STATE OF CONNECTICUT  
**DEPARTMENT OF TRANSPORTATION**

00337

Permit is valid only when transported in accordance with specifications listed below. Load to be transported must be within dimensions. Permit is valid only for use on State highways.

DATE OF ISSUE: 12-19-80 DATE OF EXPIRATION: 12-19-80 EXPIRATION DATE: 12-19-80 PERMIT NO.: Trans 401-364-7701 X 49

McLean Trucking Co.  
Norwich, CT 06360

UNC Recovery Systems

Radioactive material

**LIMITATIONS**

1. Vehicle shall be operated at a safe rate of speed under favorable weather and road conditions.
2. Permit covers State highways and State bridges only.
3. Gross load may not exceed posted capacity of any bridge.
4. Permit does not exonerate the permittee from legal liability or responsibility for damages to any highway, street or bridge resulting from use of the vehicle described below.
5. Permit is void after expiration date and on Saturdays, Sundays and holidays.
6. For further permit will be issued on use of this permit is only required to be returned to the office within one week after the expiration date.
7. Permit is not valid for use on the interstate system of highways.

Gross weight and dimensions are legal. Shipper: UNC Recovery Systems  
UNC Recovery Systems, Wood River Junction to Barnwell, SC, Chem-Nuclear Systems, Inc.  
Routes: I-95 south, 52 north, 2 west, I-84 west  
Tractor: LB 1256, NC, Color: Red, Make: GMC, Year: 1980  
Trailer: M-19065, NC, Color: Silver, Make: Fruehauf, Year: 1979  
Isotopes: U-235 Curies: less than .03 Label: LSA  
Driver's name: T. E. Maulik, anticipating move 12-19-80 time 10:30 a.m.  
Contacted State Police 12-19-80 time 9:35 a.m. by Alma Sargeant & Dispatcher Smedyk.

PERMIT TYPE: ☐ Daylight ☒ 9:00 A.M. 4:00 P.M. Only ☐ 7:00 A.M. 9:00 A.M. Not permitted ☐ 4:00 P.M. 6:00 P.M. Not permitted ☐ No Restriction ☐ Front ☐ Rear Required ☐

OFFICE USE ONLY: ☐ Base Permit Fee \$15.00 ☐ Wire Transmission Fee \$2.00 ☐ Annual Fee (30% of Conn. Registration) ☐ No Charge ☐ STATE FEE \$ 25.00 - paid

RADIOACTIVE MATERIAL BURIAL SHIPMENT  
VEHICLE INSPECTION CHECK LIST

SHIPMENT NO: 112  
CARRIER: mcl  
TRAILER ID: 52318  
DESTINATION: Chenu Nuclear

INSPECT EACH VEHICLE AND SHIPMENT PER SOP III-H, QP-5.411, AND THIS FORM

ITEM NO.	ITEM DESCRIPTION	INSPECTOR'S INITIALS/DATE	NOTES
1	<u>PRELOADING INSPECTION</u>		
1.1	FLOOR, WALLS, CEILING DRY	ad 12/19/80	
1.2	NO HOLES OR LEAKS IN TRAILER	ad 12/19/80	
1.3	NO LOOSE MATERIAL (DIRT)	ad 12/19/80	Need to be swept
1.4	✓ NO RADIOACTIVE CONTAMINATION EXCEEDING RELEASE LIMITS	K.A. 12/19/80	
1.5	FLOOR COVERED PER SOP III-H	mmr 12/19/80	
2	<u>POST LOADING INSPECTION</u>		
2.1	UNIFORM LOADING	Dem 12/19/80	
2.2	CRATES AND DRUMS <u>NOT</u> INTER-MIXED	ALL 12/19/80	
2.3	MIN. 3" CLEARANCE BETWEEN CRATES AND VEHICLE SIDES	ALL 12/19/80	
2.4	SIDE BY SIDE SMALL CRATES FASTENED TOGETHER (BARNWELL SHIPMENTS ONLY)	ad 12/19/80	all Large Boxes
2.5	ADEQUATE SHORING TO PREVENT LOAD SHIFTING	Dem 12/19/80	
2.6	NIS CONTAMINATION CLEARANCE	K.H. 12/19/80	
2.7	PHOTOGRAPH OF LOADED TRAILER	MA 12/19/80	
2.8	LOAD AND SHIPPING PAPERS AGREE	ad 12/19/80	

# RADIOACTIVE MATERIAL BUHAL SHIPMENT VEHICLE INSPECTION CHECK LIST

SHIPMENT NO:  
PAGE 2 OF 2

ITEM NO.	ITEM DESCRIPTION	INSPECTOR'S INITIALS/DATE	NOTES
3	<u>PRERELEASE INSPECTION</u>		
3.1	CONTAINER INSPECTION REPORT COMPLETE AND ALL CONTAINERS ACCEPTED	OD 12/19/80	
3.2	TRAILER SEALED WITH TAMPER-SAFE SEAL. SEAL NUMBER: <u>22479</u>	OD 12/19/80	
3.3	"RADIOACTIVE" PLACARDS VISIBLE ON ALL FOUR SIDES	OD 12/19/80	
3.4	<p>DRIVER POSSESSES AND HAS SIGNED ALL REQUIRED PAPERWORK</p> <p>A) RI STATE PERMIT* <input checked="" type="checkbox"/></p> <p>B) CT STATE PERMIT* <input checked="" type="checkbox"/></p> <p>C) UNC BILL OF LADING* <input checked="" type="checkbox"/></p> <p>D) UNC FSO* <input checked="" type="checkbox"/></p> <p>E) UNC PACKING LIST <input checked="" type="checkbox"/></p> <p>F) CHEM-NUCLEAR SHIPMENTS</p> <p>(1) S.C. PNP FORM <input checked="" type="checkbox"/></p> <p>(2) S.C. CERTIFICATION FORM* <input checked="" type="checkbox"/></p> <p>(3) CHEM-NUC. SHIPMENT RECORD FORM* <input checked="" type="checkbox"/></p> <p>G) NECO SHIPMENTS</p> <p>(1) NEV. CERTIFICATION FORM <input type="checkbox"/> NA</p> <p>(2) NECO SHIPMENT AND DISPOSAL FORM* <input type="checkbox"/> NA</p> <p>(*SIGNED BY VEHICLE DRIVER)</p>		
3.5	TRACTOR AND TRAILER NIS RELEASED	NIS <i>R. Helgen</i> 12/19/80	
4	VEHICLE AND LOAD ARE ACCEPTABLE AND RELEASED FOR SHIPMENT		

OPERATIONS  
QUALITY ASSURANCE  
COMPLIANCE

SIGNATURE  
*John Murphy*  
*R. Helgen*  
*AT Helgen*

DATE  
12-19-80  
12-19-80  
12-19-80



# 112

Page 1

## MATERIAL FOR EVIDENTIAL PREPARATION FORM

ITEM	PHYSICAL	CHEMICAL	RADIATION SFC	ISOTOPE SFC	ISOTOPE/S	U	U235	GROSS SEAL	AREA	LE2
1	1748		0.2	4.2		1.0	1.6	2348		
2	15		0.2					2778		
3	10		0.2					2322		
4	16		0.2					2504		
5	39		0.2					1637		
6	25		0.2					1615		
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# HEALTH PHYSICS RADIOLOGICAL SURVEY REPORT

SURVEYED BY: N. Warner DATE: 12-17-80 VEHICLE SURVEY: N/A DATE: 12-17-80  
 INSTRUMENT (S): NLS MATERIAL RELEASED BY: N. Warner DATE: 12-17-80  
 SURVEY DESCRIPTION: ORANGE #112

No.	OBJECT OR DESCRIPTION	CPM	ALPHA COUNTING		DPM	CPM	BETA COUNTING		DPM	INST. SURVEY ME/HR	DATE
			BKG	NET CPM EFF.			BKG	NET CPM EFF.			
1	Box #25	5	2.0	3.0	9.0	35	28.0	7	11.0	220	12/17/80
2	25	2	0		0	27		0		0	
3	25	1	0		0	27		0		0	
4	25	1	0		0	24		0		0	
5	25	1	0		0	33		0		0	
6	Box #36	2	0		0	28		0		0	
7	36	4	2		0	28		0		0	
8	36	2	0		0	18		0		0	
9	36	2	0		0	18		0		0	
10	Box #16	5	2		0	27		0		0	
11	16	1	0		0	27		0		0	
12	16	1	0		0	25		0		0	
13	16	1	0		0	29		0		0	
14	16	1	0		0	41		0		0	
15	Box #10	1	0		0	28		0		0	
16	10	6	0		0	24		0		0	
17	10	2	0		0	31		0		0	
18	10	1	0		0	33		0		0	
19	Box #15	6	4		0	21		0		0	
20	15	2	0		0	23		0		0	
21	15	2	0		0	25		0		0	
22	15	5	0		0	18		0		0	
23	15	2	0		0	29		0		0	
24	Box #1748	2	0		0	31		0		0	
25	1748	1	0		0	28		0		0	
26	1748	4	0		0	31		0		0	
27	1748	4	0		0	30		0		0	
28	1748	1	0		0	35		0		0	
29		1	0		0	26		0		0	

\*Circled items cleaned and Resmeared

## HEALTH PHYSICS RADIOLOGICAL SURVEY REPORT

SURVEYED BY: N. V. Kromer DATE: 12-19-80

VEHICLE SURVEY: \_\_\_\_\_ DATE: \_\_\_\_\_

MATERIAL RELEASED BY: DATE:

INSTRUMENT (S): ALJ

SURVEY DESCRIPTION: BRAC 2112

No.	Object or Description	Alpha Counting			Beta Counting			DPM	INSTR. SURF. MR/HR OR CORR. DATE
		CPM	BKG	NET CPM EFF.	CPM	BKG	NET CPM EFF.		
1	TRUCK BED ABOVE	5	2.0	3.0	34	28.0	6	11.0	66.0
2	" "	0			28		0		0
3	" "	4	2		30		2		22.0
4	" "	6	4		26		0		0
5	" "	6	4		32		4		44.0
6	TRUCK BED OFF HD	4	2		31		3		33.0
7	" "	1	0		28		0		0
8	" "	5	3		33		5		55.0
9	" "	2	0		27		0		0
10	" "	2	0		30		2		22.0

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ME/HR.

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20.1 HPA/HR

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White: Accompany Shipment Yellow: Customer Pink: Carrier