

# TODD

## RESEARCH & TECHNICAL DIVISION

P. O. Box 1600 · Galveston, Texas 77550 · (713)744-7141

181-00100

December 18, 1973

Mr. R. V. Gilmer  
Union Carbide Corporation  
Carbon Products Division  
P.O. Box 1600  
Lawrenceburg, Tennessee

Dear Rex:

Pursuant to Article 5 Contract 70-743-1 between Union Carbide Corporation and Todd Research & Technical Division, I certify that said Radioactive Waste from the Lawrenceburg facility has been duly buried at Barnwell, South Carolina in accordance with all applicable laws and regulations pertaining thereto. The burial was witnessed by the undersigned on November 19, 1973 and recorded on the attached sheets by T. McCord, (Burial) Site Manager for Chem Nuclear Services.

  
T. J. Keane, Supervisor  
Nuclear Services Dept.

TJK:mll:37:73 HP

Attachments: Chem Nuclear Services Radioactive  
Shipment Record Form, 8 pages

cc: R. R. Allen  
R. B. Wilson  
Central Files

A/133

**Chem-Nuclear Services, Inc.**  
**RADIOACTIVE SHIPMENT RECORD FORM**

SOURCE: *Union Carbide Corporation - Chemical Products Division - Lawrenceville, Tenn*

SHIPPER: *East Research & Technical Division* Date: *11-17* 19 *73*

Carrier: *Carroll Products Division - Lawrenceville, Tenn* Page 1 of *1* pages.

**INSTRUCTIONS**

- Please complete this form and distribute as follows:
- a. Mail original and 1 copy to Chem-Nuclear Services Inc. P.O. Box 6375, Columbia, S.C. 29206
  - b. Hand third copy to truck driver.
  - c. Retain fourth copy.

Please enter each isotope known to be present in a container (up to three) on separate lines. For three or more isotopes or mixed fission products, enter NFP in the isotope column.

List the isotopes mentioned in 2 above on the shipping label.

Your Inspector or a Chem-Nuclear Services, Inc. employee must initial the last column after inspection in accordance with Title 10 CFR Part 29, as follows:

a. Each package is marked with

**CAUTION - RADIOACTIVE MATERIAL**

see paragraph 20.203, (2)(d). Markers will be supplied by Chem-Nuclear Services, Inc. on request.

b. Each package is marked to show the isotopes, microcurie quantities, and date of measurement, see paragraph 20.203 (2) (3)

c. Each package has been monitored by radiation survey instruments at surface (2 in.) and one meter (39.4 in.) and smeared. Enter smear results in Column No. 4.

Disclaimer: Title to all materials, whether or not they were previously Government-owned, contained in waste furnished for disposal under this contract (except material which is required by Section 52 of the Atomic Energy Act of 1954, as amended, to be owned by the Government) shall be deemed to be vested in Chem-Nuclear Services, Inc. immediately upon acceptance of such material by Chem-Nuclear Services, Inc. from the shipper or from the common carrier. The Government or shipper shall have no right to the recovery of any materials contained in such waste nor any credit for their potential value.

Page No.	Surface	Mr. or Meter	Smear Results	Isotopes	By products Millicurie	SNN Grams	Source Pounds	Gross Feet	Gallons	Container Weight	Monitor
7	Less flow 5	Less flow 1	< 100dpm or < 1/32	U-235	N/A	<del>2.35</del>	N/A	36.0	N/A		X
5						2.35		37.5			X
32						2.35		9.0			X
8						2.35		9.0			X
30						2.35		12.0			X
-25						2.35		9.35			X
						<del>2.35</del>		<del>110.85</del>			<del>X</del>

*Handwritten notes:*  
 USED & fumigated  
 11-19-73  
 Treated with #16  
 Glycerol

*Handwritten note:* 5800#

RADIOACTIVE SHIPMENT RECORD FORM

ORIG: *Whittier Coatings Corporation - CARBON PRODUCTS DIVISION - LAWRENCEVILLE, MISSOURI*  
 FOR: *TRON Research & Technical Products Division - LAWRENCEVILLE, MISSOURI*  
 11-16 1973

INSTRUCTIONS

Use complete this form and distribute as follows:  
 Mail original and 17th copy to Chem-Nuclear Services Inc.  
 P.O. Box 6741, Columbia, S.C. 29206  
 First class copy to truck driver.  
 Retain 6th copy.

*See 4 of 6  
 See 1st of 6  
 See 1st of 6*

Each entry on invoice known to be present in a container (up to three) on separate lines. For three or more isotopes or mixed isotope products, enter 1/3 in the isotope column of the isotopes mentioned in 2 above on the shipping label.  
 For Department of a Chem-Nuclear Services, Inc. employer must include the last column after inspection in accordance with Title 16 CFR Part 29, as follows:  
 Each package is marked with

CAUTION - RADIOACTIVE MATERIAL

Each package is marked with  
 see paragraph 20.205, (2)(D). Markers will be supplied by Chem-Nuclear Services, Inc., on request.  
 Each package has been monitored by radiation survey instruments at surface (2 in.) and sea water (39.4 in.) and stamped. Enter surface results in Column No. 4.  
 Summary: Title to all materials, whether or not they were previously Government-owned, contained in waste furnished for disposal under this contract (except material which is titled by Section 52 of the Atomic Energy Act of 1954, as amended by the Government) shall be deemed to be owned by the Government and shall be disposed in Chem-Nuclear Services, Inc. in accordance with the requirements of such material by Chem-Nuclear Services, Inc. from the shipper or from the common carrier. The Government or shipper shall have no right in the recovery of any materials contained in such waste nor any credit for their potential value.

No.	Surface	Net Wt. One Meter	Net Wt. Results	Isotopes	By Products	SVM	Source	Cubic Feet	Gallons	Container Weight	Monitor
2	<i>Less than .5</i>	<i>Less than .1</i>	<i>Less than .1</i>	<i>238Pu, 235U</i>	<i>N/A</i>	<i>15</i>	<i>N/A</i>	<i>397.0</i>	<i>N/A</i>	<i>7000</i>	<i>X</i>
3						<i>15</i>		<i>471.0</i>		<i>5000</i>	<i>X</i>
4						<i>15</i>		<i>2.5</i>		<i>100</i>	<i>X</i>
3						<i>15</i>		<i>22.5</i>		<i>1000</i>	<i>X</i>
8						<i>15</i>		<i>7.0</i>		<i>100</i>	<i>X</i>
2						<i>15</i>		<i>7.0</i>		<i>100</i>	<i>X</i>
1						<i>15</i>		<i>40.5</i>		<i>1000</i>	<i>X</i>
1						<i>15</i>		<i>12.0</i>		<i>1000</i>	<i>X</i>
1						<i>15</i>		<i>84.0</i>		<i>1000</i>	<i>X</i>
2						<i>15</i>		<i>128.0</i>		<i>1000</i>	<i>X</i>
	<i>Y</i>	<i>Y</i>	<i>Y</i>	<i>Y</i>	<i>Y</i>	<i>150</i>	<i>Y</i>	<i>1171.5</i>	<i>Y</i>		

*Shipper* *Received by*  
*Shipper* *Received by*

NATIONAL RADIOACTIVE SHIPMENT RECORD FORM

ORIGIN: *Urgent (Carriage) Products Division - Langley Research Center*

SHIPPER: *Food Research & Technical Division* Date: *11-16-54* Page 1 of 3

DESTINATION: *Urgent (Carriage) Products Division - Langley Research Center*

INSTRUCTIONS

1. Complete this form and distribute as follows:  
 a. Mail original and three copies to Chem-Nuclear Services, Inc.  
 b. P.O. Box 6200, Columbia, S.C. 29206  
 c. One copy to truck driver.  
 d. Retain (Company copy)

2. Enter each isotope known to be present in a container (up to three) on separate lines. For three or more isotopes of mixed decay products, enter MFP in the isotope column. List the isotopes mentioned in 2 above on the shipping label.

3. Each package is marked with your Inspector or a Chem-Nuclear Services, Inc. employee must initial the last column after inspection in accordance with Title 10 CFR Part 29, as follows:

CAUTION - RADIOACTIVE MATERIAL

4. See paragraph 20.203, (c)(1). Markers will be supplied by Chem-Nuclear Services, Inc., on request. Each package is marked to show the isotopes, microcurie quantities, and date of measurement, see paragraph 20.203 (c)(2).

5. Each package has been monitored by radiation survey instruments at source (2 in.) and seaward. Enter smear results in Column No. 4.

6. This material, whether or not they were previously Government-owned, contained in waste furnished for disposal under this contract (except material which is required by Section 52 of the Atomic Energy Act of 1954, as amended, to be owned by the Government) shall be deemed to be vested in Chem-Nuclear Services, Inc. Immediately upon acceptance of such material by Chem-Nuclear Services, Inc. from the shipper or from the common carrier. The Government or shipper shall have no right to the recovery of an

isotope contained in such waste nor any credit for their potential value.

PKT. No.	Net wt	Smear Results	Isotopes	Microcurie	By products	SNM	Source	Radioactive	Container	Weight	Monitor
6	less than 5	less than 1	210Po, 210Pb, 210Bi	N/A	N/A	2.5	N/A	63.5	N/A		K
7						2.5		6.5			K
8						2.5		17.0			K
9						2.5		5.5			K
10						2.5		16.0			K
11						2.5		12.5			K
12						2.5		6.5			K
13						2.5		4.5			K
14						2.5		52.5			K
15						2.5		8.0			K
16						2.5		6.0			K
17						2.5		20.0			K
18						2.5		11.0			K
19						2.5		8.0			K
20						2.5		8.0			K
21						2.5		6.0			K
22						2.5		2.5			K
23						2.5		20.0			K
24						2.5		2.5			K
25						2.5		4.5			K
26						2.5		52.5			K
27						2.5		8.0			K
28						2.5		6.0			K
29						2.5		2.5			K
30						2.5		8.0			K
31						2.5		2.5			K
32						2.5		6.0			K
33						2.5		2.5			K
34						2.5		20.0			K
35						2.5		11.0			K
36						2.5		8.0			K
37						2.5		8.0			K
38						2.5		6.0			K
39						2.5		2.5			K
40						2.5		2.5			K
41						2.5		1.0			K
42						2.5		2.0			K

Receiver: *[Signature]* Shipper: *[Signature]*

**RADIOACTIVE SHIPMENT RECORD FORM**

Chem-Nuclear Services, Inc.

ORIGIN: *United States - (Energy) Projects Division - Lawrence Livermore National Laboratory*

Report: *Food Research & Technical Division Date 11-16-73*

Pages: *2 of 3*

**INSTRUCTIONS**

Fill out this form and distribute as follows:  
 1. One copy to Chem-Nuclear Services, Inc.  
 2. One copy to the truck driver.  
 3. One copy to the shipping label.  
 4. One copy to the receiving office.

Each package is marked with:

For inspection of a Chem-Nuclear Services, Inc. employee must fill in the last column after inspection in accordance with Title 10 CFR Part 20, as follows:

**CAUTION - RADIOACTIVE MATERIAL**

See paragraph 20.205, (c)(1). Markers will be supplied by Chem-Nuclear Services, Inc. on request.

Each package is marked to show the isotopes, microcurie quantities, and date of measurement, see paragraph 20.203 (f)(2).

Each package has been monitored by radiation survey instruments at surface (2 in.) and one meter (39.6 in.) and smeared. Enter smear results in Column No. 4.

Disposition: Title to all materials, whether or not they were previously Government-owned, contained in waste furnished for disposal under this contract (except material which is accepted by Section 52 of the Atomic Energy Act of 1954, as amended, to be owned by the Government) shall be deemed to be vested in Chem-Nuclear Services, Inc. immediately upon completion of such material by Chem-Nuclear Services, Inc. from the shipper or from the common carrier. The Government or shipper shall have no right to the recovery of any materials contained in such waste nor any credit for their potential value.

No.	Surface	One Meter	Smear Results	Isotopes	By products	SNM	Source	Cubic Feet	Gallons	Container Weight	Monitor
14			7.1000 in. 20.250		N/A	2.5	N/A	18.0	N/A		A
6						2.5		27.0			A
9						2.5		4.0			A
10						2.5		4.5			A
34						2.5		12.0			A
55						2.5		10.0			A
57						2.5		8.0			A
58						2.5		8.0			A
53						2.5		64.0			A
56						2.5		7.5			A
1						2.5		7.35			A
2						2.5		7.35			A
3						2.5		7.35			A
4						2.5		7.35			A
7						2.5		7.35			A
10						2.5		7.35			A
11						2.5		7.35			A
12						2.5		7.35			A
20						2.5		7.35			A

# RADIOACTIVE SHIPMENT RECORD FORM

REC: *WINDS (Agency) - (Agency) Products Division - (Agency) Products Division*

per *Food Research & Technical Division* Date *11-16-93*

and *Agency - (Agency) Products Division - (Agency) Products Division* Page *3*

## INSTRUCTIONS

Use complete this form and distribute as follows:  
 Hold original and three copy to Chem-Nuclear Services, Inc.  
 P.O. Box 6000, Columbia, S.C. 29206  
 Send eight copy to truck driver.  
 Retain (four) copy

Use other such feature known to be present in a container (up to three) on separate lines. For three or more isotopes or mixed isotope products, enter MIP in the last column.  
 The isotopes mentioned in 2 above on the shipping label.  
 The Inspector of a Chem-Nuclear Services, Inc. employee must initial the last column after inspection in accordance with Title 19 CFR Part 20, as follows:  
 Each package is marked with  
**CAUTION—RADIOACTIVE MATERIAL**  
 see paragraph 20.205, (c)(1). Markers will be supplied by Chem-Nuclear Services, Inc., on request.  
 Each package is marked to show the isotopes, microcurie quantities, and date of measurement, see paragraph 20.203 (f) (4).  
 Each package has been monitored by radiation survey instruments at surface (2 in.) and one meter (99.4 in.) and surveyed. Enter smear results in Column No. 4.  
 Title to all materials, whether or not they were previously Government-owned, contained in waste placed for disposal under this contract (except material which is  
 limited by Section 52 of the Atomic Energy Act of 1954, as amended, to be owned by the Government) shall be deemed to be vested in Chem-Nuclear Services, Inc. immediately upon  
 receipt of such material by Chem-Nuclear Services, Inc. from a carrier. The Government or shipper shall have no right to the recovery of an  
 article contained in such waste nor any credit for their potential value.

57  
 36  
 35  
 34  
 33  
 32  
 31  
 30  
 29  
 28  
 27  
 26  
 25  
 24  
 23  
 22  
 21  
 20  
 19  
 18  
 17  
 16  
 15  
 14  
 13  
 12  
 11  
 10  
 9  
 8  
 7  
 6  
 5  
 4  
 3  
 2  
 1

No.	Surface - One Meter	Smear	Results	Isotopes	By products	SNM	Source	Volume	Weight	Container
36	Less than .5	N/A	2.5	N/A	2.5	N/A	7.35	N/A		X
35			2.5		2.5					X
34			2.5		2.5					X
33			2.5		2.5					X
32			2.5		2.5					X
31			2.5		2.5					X
30			2.5		2.5					X
29			2.5		2.5					X
28			2.5		2.5					X
27			2.5		2.5					X
26			2.5		2.5					X
25			2.5		2.5					X
24			2.5		2.5					X
23			2.5		2.5					X
22			2.5		2.5					X
21			2.5		2.5					X
20			2.5		2.5					X
19			2.5		2.5					X
18			2.5		2.5					X
17			2.5		2.5					X
16			2.5		2.5					X
15			2.5		2.5					X
14			2.5		2.5					X
13			2.5		2.5					X
12			2.5		2.5					X
11			2.5		2.5					X
10			2.5		2.5					X
9			2.5		2.5					X
8			2.5		2.5					X
7			2.5		2.5					X
6			2.5		2.5					X
5			2.5		2.5					X
4			2.5		2.5					X
3			2.5		2.5					X
2			2.5		2.5					X
1			2.5		2.5					X

# Chem-Nuclear Services, Inc. RADIOACTIVE SHIPMENT RECORD FORM

SOURCE: UNION CARBIDE CORPORATION - CARBON PRODUCTS Division - LABORATORY - PAIN

Shipper: TOPIC RESEARCH & TECHNICAL DIVISION Date: 19 73

Union Carbide - Carbon Products Division - LABORATORY, Tenn, Page 1 of 3 pages

## INSTRUCTIONS

1. Please complete this form and distribute as follows:
  - a. Mail original and 1/2" thick copy to Chem-Nuclear Services, Inc., P.O. Box 5110, Columbia, S.C. 29206
  - b. Hand 1/2" thick copy to truck driver.
  - c. Retain 1/2" thick copy

Please enter each isotope known to be present in a container (up to three) on separate lines. For three or more isotopes or materials, enter N/A in the isotope column. List the isotopes mentioned in 2 above on the shipping label.

Your instructor at a Chem-Nuclear Services, Inc. employee must initial the last column after inspection in accordance with Title 49 CFR, Part 171, as follows:

### CAUTION - RADIOACTIVE MATERIAL

1. Each package 20,000, (20) Markers will be supplied by Chem-Nuclear Services, Inc. on request.
2. Each package is marked to show the isotopes, microcurie quantities, and date of measurement, see paragraph 20.203 (3) (4).
3. Each package has been monitored by radiation survey instruments at surface (2 in.) and one in bag (30.5 in.) and smeared. Enter smear results in column No. 4.

Disclaimer: Title to all materials, whether or not they were previously Government-owned, contained in waste furnished for disposal under this contract (except material which is required by Section 82 of the Atomic Energy Act of 1954, as amended, to be owned by the Government) shall be deemed to be vested in Chem-Nuclear Services, Inc. Immediately upon acceptance of such material by Chem-Nuclear Services, Inc. from the shipper or from the common carrier. The Government or shipper shall have no right to the recovery of any materials contained in such waste nor any credit for their potential value.

Not Divided  
11-19-73  
Trench #3  
The Cord

Pkg. No.	Surface	Mr. hr	One Meter	Smear Results	Isotopes	By products	SMM	Source	Cubic Feet	Gallons	Container Weight	Marker
5	less than .5	less than .5	less than .5	less than .5	less than .5	N/A	27.35	N/A	7.35	N/A		X
6												X
7												X
8												X
13												X
14												X
15												X
16												X
17												X
18												X
19												X
21												X
22												X
23												X
24												X
												X
26												X
27												X
28												X

W.C. Dill

**CHEM-NUCLEAR SERVICES, INC. RADIOACTIVE SHIPMENT RECORD FORM**

ORIGIN: *Various Laboratory - Research Division - Lawrence Livermore Lab.*

FORM: *Food Research & Technical Division Date 19 73*

REMARKS: *Various Records - Research Division - Lawrence Livermore Lab. 3 pages*

**INSTRUCTIONS**

1. Complete this form and distribute as follows:  
 a. Shipper's copy to Chem-Nuclear Services, Inc.  
 b. One copy to the carrier.  
 c. One copy to the receiving agency.  
 d. One copy to the local health department.  
 e. One copy to the local fire department.  
 f. One copy to the local police department.  
 g. One copy to the local health officer.  
 h. One copy to the local health department.  
 i. One copy to the local fire department.  
 j. One copy to the local police department.  
 k. One copy to the local health officer.  
 l. One copy to the local health department.  
 m. One copy to the local fire department.  
 n. One copy to the local police department.  
 o. One copy to the local health officer.  
 p. One copy to the local health department.  
 q. One copy to the local fire department.  
 r. One copy to the local police department.  
 s. One copy to the local health officer.  
 t. One copy to the local health department.  
 u. One copy to the local fire department.  
 v. One copy to the local police department.  
 w. One copy to the local health officer.  
 x. One copy to the local health department.  
 y. One copy to the local fire department.  
 z. One copy to the local police department.

2. Each package is marked with:  
 a. The name of the material.  
 b. The quantity.  
 c. The date of measurement.  
 d. The name of the shipper.  
 e. The name of the carrier.  
 f. The name of the receiving agency.  
 g. The name of the local health department.  
 h. The name of the local fire department.  
 i. The name of the local police department.  
 j. The name of the local health officer.  
 k. The name of the local health department.  
 l. The name of the local fire department.  
 m. The name of the local police department.  
 n. The name of the local health officer.  
 o. The name of the local health department.  
 p. The name of the local fire department.  
 q. The name of the local police department.  
 r. The name of the local health officer.  
 s. The name of the local health department.  
 t. The name of the local fire department.  
 u. The name of the local police department.  
 v. The name of the local health officer.  
 w. The name of the local health department.  
 x. The name of the local fire department.  
 y. The name of the local police department.  
 z. The name of the local health officer.

**CAUTION - RADIOACTIVE MATERIAL**

3. Each package is marked to show the isotopes, microcurie quantities, and date of measurement, see paragraph 2.0.3 (f) (+).  
 4. Each package has been measured by radiation survey instruments at surface (2 in.) and one meter (39.4 in.) and smeared. Enter smear results in Column No. 4.  
 5. Each package is marked to show the isotopes, whether or not they were previously Government-owned, contained in waste furnished for disposal under this contract (except material which is returned by Section 57 of the Atomic Energy Act of 1954, as amended, to be owned by the Government) shall be deemed to be vested in Chem-Nuclear Services, Inc. immediately upon acceptance of such material by Chem-Nuclear Services, Inc. from the shipper or from the common carrier. The Government or shipper shall have no right to the recovery of any materials contained in such waste nor any credit for their potential value.

6. Each package is marked to show the isotopes, whether or not they were previously Government-owned, contained in waste furnished for disposal under this contract (except material which is returned by Section 57 of the Atomic Energy Act of 1954, as amended, to be owned by the Government) shall be deemed to be vested in Chem-Nuclear Services, Inc. immediately upon acceptance of such material by Chem-Nuclear Services, Inc. from the shipper or from the common carrier. The Government or shipper shall have no right to the recovery of any materials contained in such waste nor any credit for their potential value.

No.	Surface	One Meter	Smear Results	Isotopes	Microcurie	Grams	SNN	Source	Pounds	Cubic Feet	Gallons	Weight	Container
29			Less than 1.0 x 10 <sup>-5</sup> Ci		N/A	2.35	N/A	7.35	N/A				A
30													A
31													A
32													A
33													A
34													A
35													A

No.	Surface	One Meter	Smear Results	Isotopes	Microcurie	Grams	SNN	Source	Pounds	Cubic Feet	Gallons	Weight	Container
9								40.5					A
10								20.0					A
11								31.5					A
12								2.0					A
13								8.5					A
15								21.0					A
17								58.5					A
18								15.0					A

Received *Chinn* *Shinn*



**RADIOACTIVE SHIPMENT RECORD FORM**

**Chem-Nuclear Services, Inc.**

TO: *United States Atomic Energy Commission - (Radioisotope Products Division) - Washington, D.C.*

FROM: *Food Research & Technical Division Date 19 75*

THIS LABEL - (Radioisotope Products Division) - Washington, D.C. Pages of 3

**INSTRUCTIONS**

Please complete this form and distribute as follows:  
 - Mail original and pink copy to Chem-Nuclear Services, Inc.  
 - P.O. Box 5700, Columbia, S.C. 29206  
 - Send color copy to truck driver.  
 - Retain primary copy.

Place entry each isotope known to be present in a container (up to three) on separate lines. For three or more isotopes or mixed fission products, enter N/A in the isotope column. List the isotopes mentioned in 2 above on the shipping label. Our inspector or a Chem-Nuclear Services, Inc. employee must initial the last column after inspection in accordance with Title 10 CFR, Part 20, § 20.11(a).

**CAUTION - RADIOACTIVE MATERIAL**

See paragraph 20.203, (c)(1). Markers will be supplied by Chem-Nuclear Services, Inc. on request. Each package is marked to show the isotope, microcurie quantity, and date of measurement, see paragraph 20.203 (c)(2). Each package has been monitored by radiation survey instruments at surface (2 in.) and one meter (39.4 in.) and smeared. Enter smear results in Column No. 4.

Title to all materials, whether or not they were previously Government-owned, contained in waste furnished for disposal under this contract (except material which is acquired by Section 52 of the Atomic Energy Act of 1954, as amended, to be owned by the Government) shall be deemed to be vested in Chem-Nuclear Services, Inc. immediately upon receipt of such material by Chem-Nuclear Services, Inc. From the shipper or from the common carrier. The Government or shipper shall have no right to the recovery of any materials contained in such waste nor any credit for their potential value.

Page No.	Surface	One Meter	Smear Results	Isotopes	Microcurie	SNM	Source	Pounds	Net	Gallons	Container
9			7.1000/14		N/A	2.35	N/A	5.0	9.0	N/A	X
73						2.35		18.0			X
75						2.35		16.0			X
77						2.35		12.0			X
52						2.35		75.0			X
53						2.35		11.5			X
59						2.35		49.0			X
51						2.35		126.0			X
54						2.35		92.5			X

1049.45  
6/1