

Report No. 15000039/81-04

Disposal Site: Chem-Nuclear Systems, Inc  
Barnwell, South Carolina 29812

Inspector: TC MacArthur  
T. C. MacArthur

5/7/81  
Date Signed

Approved by: W. W. Peery  
W. W. Peery, Acting Section Chief  
Technical Inspection Branch  
Engineering and Technical Inspection Division

5/7/81  
Date Signed

SUMMARY

Inspection on April 20-24, 1981

Areas Inspected

This routine unannounced inspection involved 32 inspector-hours on site in the area of transportation.

Each licensee-shipper vehicle was inspected for compliance with Department of Transportation (DOT) and Nuclear Regulatory Commission (NRC) regulations as follows: (1) shipping paper requirements; (2) DOT Placarding requirements; (3) radiation levels; (4) removable contamination; (5) DOT marking and labeling requirements for packages; (6) DOT and NRC requirements for external package features, and (7) prohibited articles or contents.

Results: Of the seven areas inspected involving shipments, no items of noncompliance were identified.

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## DETAILS

### 1. Persons Contacted

R. Sappington, DHEC  
J. Purvis, CNSI  
J. Ott, CNSI

### 2. General

The NRC inspection consisted of a review of the shipping papers, radiation survey of the vehicle, contamination surveys and radiation level surveys of selected packages. General surveys and observations were conducted to determine if the vehicle had proper placards, proper seals, and if any obvious safety hazards existed. The contents of the vehicles were inspected for appropriate marking, labeling, tightness of seals, integrity of package construction or any evidence of leakage.

Chem-Nuclear assigns a control number for each shipment upon arrival at the site. These numbers were called "arrival survey numbers" (AS No.) and were used by the inspectors to identify licensee-shippers during this inspection.

### 3. Shipments Inspected

Thirty-five (35) shipments were inspected during the period of April 20 through April 24, 1981. A listing of the shippers inspected and their assigned number is included as Attachment A.

### 4. Shipping Papers

The shipping papers were reviewed for completeness and to ascertain if the contents of the shipment were properly identified, and if emergency notification procedures and instructions were included as required under 49 CFR 172, Subpart C. Specific requirements for shipping papers were reviewed as follows:

Material shipping name	-	49 CFR 172.100/172.200/172.202
Material class	-	49 CFR 172.200/172.202
Name sequence	-	49 CFR 172/200/172.202
Total quantity (volume)	-	49 CFR 172/200/172.202
Limited quantity	-	49 CFR 172/200/172.203
Name of each radionuclide	-	49 CFR 172/203
Physical and chemical form	-	49 CFR 172/203
Activity in curies	-	49 CFR 172/203
Category or label	-	49 CFR 172.203

Notation of NRC/ERDA  
 package approval - 49 CFR 172.203  
 Proper certification - 49 CFR 172.204

No items of noncompliance were identified.

5. Each vehicle was inspected for conformance with DOT placarding requirements (49 CFR 172), Subpart F and 49 CFR 173.392). The vehicles were also inspected for compliance with the following:

Maximum transportation index of 50 - (49 CFR 177.842)  
 Loaded so as to avoid spillage (49 CFR 177.842)  
 Properly blocked and braced (49 CFR 173.392/177.842)  
 LSA vehicle survey (49 CFR 177.843)

No items of noncompliance were identified.

6. Maximum Radiation Levels

Each truck was surveyed for maximum radiation levels in the normally occupied portions of the vehicle, in a plane at the edge of the flat bed or at the surface of the closed vehicles, in a vertical plane six feet from the sides of the vehicle where possible, and on the surface of a representative package. Shipping cask were surveyed at the surface.

No levels were in noncompliance with 49 CFR 173.393 limits.

7. Packaging

A representative sampling of packages from each shipment was examined for conformance with DOT marking and labeling requirements. External features of the packages were examined for conformance with DOT and NRC requirements as noted below:

Low specific activity (LSA) packaging - 49 CFR 173.392  
 Tight packages - ltd. Qty. - 49 CFR 173.391 or 173.392  
 No release of material - 49 CFR 173.392/173.393  
 Radioactive material markings - 49 CFR 172.310  
 Security seals - 49 CFR 173.393  
 Gross weight requirements - 49 CFR 172.310  
 Proper shipping name - 49 CFR 172.100/172.300  
 LSA labeling - 49 CFR 173.392  
 Cask design specifications - 49 CFR 173.393a

No items of noncompliance were identified.

Attachment: Shipments Inspected

## ATTACHMENT A

AS No.	NRC Region	Carrier	Trailer Number	Shipper
25493	II	McLean	8287	Babcock and Wilcox Company Naval Nuclear Fuel Division P. O. Box 785 Lynchburg, VA 24505
25512	II	Home	056	Georgia Power Company Plant E. I. Hatch U.S. - 1 Baxley, GA 31513
25530 25476	II	TSMT CNSI	057 021	Duke Power Company Oconee Nuclear Station P. O. Box 1175 Seneca, SC 29678
25528	I	CNSI	028	Maine Yankee Atomic Power Company RFD-2, Box 450 Wiscasset, ME 04578
25529 25483	II	CNSI CNSI	043 003	Florida Power and Light Company Turkey Point Plants P. O. Box 529100 Miami, FL 33152
25474 25494 25518 25519 25520	II	CNSI TSMT CNSI CNSI CNSI	060 026 060 023 069	Carolina Power and Light Company P. O. Box 10429 Southport, NC
25517	III	Hittman	72230	Commonwealth Edison Dresden Nuclear Plant RR #1 Morris, IL 60450
25515	II	CNSI	070	Consumers Power Company Big Rock Point Plant Rt. #3, Box 591 Charleoux, MI 49720

25514	II	TSMT	444549	General Electric Company Castel Hayne Road P. O. Box 780 Wilmington, NC 28401
25513	I	CNSI	072	Northeast Nuclear Engineering Company P. O. Box 128 Waterford, CT 06385
25507	I	TSMT	128103	Baltimore Gas and Electric Company Calvert Cliffs Nuclear Power Plant Rts 2 & 4 Lusby, MD 20657
25508	III	TSMT	840649	Kerr-McGee Chemical Corporation 798 Factory Street West Chicago, IL 60185
25511	III	CNSI	040	Commonwealth Edison Quad Cities 22710 206th Avenue N Cordova, IL 61242
25510	III	Hacke	H-10	Commonwealth Edison 101 Shiloh Blvd. Zion, IL 60099
25506	III	TSMT	440828	Wisconsin Electric Power Company 6610 Nuclear Road Two Rivers, WI 52241
25497	I	CNSI	067	Connecticut Yankee Atomic Power Co. RR #1, Box 127E East Hampton, CT 06424
25490	II	Thurston	4440	TNS, Inc. P. O. Box 158 Jonesboro, TN 37659
25491 25478	II	TSMT TSMT	TV83 TV45	Tennessee Valley Authority Browns Ferry Nuclear Plant P. O. Box 2000 Decatur, AL 35602
25489	II	Home	743005	Virginia Electric and Power Co. Surry Power Station P. O. Box 315 Surry, VA 23883

25496	I	Nuclear	1	Consolidated Edison of New York, Inc.
25492		Diagnostic Labs		Indian Point Station
		CNSI	23137	Broadway and Blakely Street
				Buchanan, NY 10511
25495	I	McCormack	255	Jersey Central Power & Light Company
25481		McCormack	216	Oyster Creek Nuclear Generating Station
25531		McCormack	255	Route 9
				Forked River, NJ 08751
25482	III	Hacke	72232	Indiana & Michigan Electric Company
				DC Cook Plants
				P. O. Box 458
				Bridgman, MI 49106
	I	Thurston	4668	Texas Instruments, Inc.
				34 Forest Street M/S 10-17
				Attleboro, MA 02703
25477	III	TSMT	440232	Arkansas Power and Light Company
				Russelville, AR
25480	II	CNSI	034	Amoco Chemicals Corporation
				Decatur, AL
25475	II	Watkins	45-7744	Eglin AFB
				Traffic Management Officer
				Eglin AFB, FL
				Westinghouse Electric Corporation
				Nuclear Fuel Division
				Drawer R
				Columbia, SC 29205