



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA ST., N.W., SUITE 3100  
ATLANTA, GEORGIA 30303

Special Report: WASTE PACKAGING INSPECTION OF LICENSEE-SHIPPIERS REPORT NO.  
15000039/80-15

Reference: TI 2840/1, (Rev. 1), "Waste Packaging Inspections", 10/10/79

Licensee

Shipper: See Attachment

Disposal Site: Chem-Nuclear Systems, Inc.  
P. O. Box 26, Barnwell, South Carolina 29812  
Docket No. 15000039

Inspector: *T. C. McArthur*  
T. C. McArthur, Radiation Specialist,  
FF&MS Section, FF&MS Branch

*9/16/80*  
Date Signed

Approved by: *J. P. Potter*  
J. P. Potter, Chief, FF&MS Section, FF&MS Branch

*9/16/80*  
Date Signed

SUMMARY

Inspection Dates: July 27 - August 1, 1980 visit to Chem-Nuclear Waste disposal site, Barnwell, South Carolina for unannounced inspections of licensee-shippers.

Areas Reviewed: 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 98 shipments, no items of noncompliance were identified.

## DETAILS

### 1. Persons Contacted

W. House, South Carolina DHEC  
D. Ebenhack, 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 "shipment survey report numbers" (SSR No.) and were used by the inspectors to identify licensee-shippers during this inspection.

### 3. Shipments Inspected

Ninety-eight shipments were inspected July 27 - August 1, 1980. A listing of the shippers inspected and their assigned number is included as an Attachment to this report.

### 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

In addition to the above, 49 CFR 177.817 requires carriers to maintain the above shipping papers readily available for inspection and recognizable by authorities in case of an accident.

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  
SHIPMENTS INSPECTED

<u>SSR #</u>	<u>Carrier</u>	<u>Trailer Number</u>	<u>NRC Region</u>	<u>Shipper</u>
21611	CNSI	127	II	Westinghouse Electric Corporation P. O. Box R Columbia, SC 29250 Docket/Report No. 70-1151/80-23
21610				
21612				
21613				
21617				
21616				
21620				
21618				
21640				
21641				
21639				
21637				
21638				
21645				
21646				
21647				
21648				
21649				
21676				
21675	CNSI	118	I	
21673				
21677				
21674				
21684				
21685				
21682				
21683				
21706				
21708				
21707				
21705				
21704				
21720				
21716				
21719				
21718				
21717				

<u>SSR #</u> (Continued)	<u>Carrier</u>	<u>Trailer Number</u>	<u>NRC Region</u>	<u>Shipper</u>
21625	Hittman	215	III	Iowa Electric Light & Power Company P. O. Box 351 Duane Arnold Energy Center Cedar Rapids, IA 52406
21632	Hacke	72484	III	
21631	TSMT	544108	II	Tennessee Valley Authority P. O. Box 2000 Decatur, AL 35602 Docket/Report Nos. 50-259/80-31 50-260/80-24 & 50-296/80-25
21630	TSMT	440278	II	Virginia Electric & Power Company Surry Power Station Rt. 650 Surry, VA 23883 Docket/Report Nos. 50-280/80-30 & 50-281/80-34
21661	TSMT	440520	II	
21629	TSMT	440488	I	Connecticut Yankee Atomic Power Company RR#1 Box 127E East Hampton, CT 06424
21670	CNSI	21800	I	
22167	TSMT	840519	I	Union Carbide Corporation P. O. Box 324 Tuxedo, NY 10987
21679	CNSI	221006	II	Carolina Power & Light Company P. O. Box 10429 Southport, NC 28461
21709	CNSI	218001	II	
21609	CNSI	050	II	Docket/Report Nos. 50-325/80-34 50-324/80-31
21672	TSMT	050	II	
21644	CNSI	011	II	Carolina Power and Light Company H. B. Robinson P. O. Box 790 Hartsville, SC 29550 Docket/Report No. 50-261/80-14
21643	TSMT	050	II	
21726	TSMT	026	II	
21614	CNSI	005	II	Carolina Power and Light Company H. B. Robinson P. O. Box 790 Hartsville, SC 29550 Docket/Report No. 50-261/80-14
21712	CNSI	010	II	
21680	TSMT	440420	I	United Nuclear Corporation Recovery Systems One Naragasset Trail Wood River Junction, RI 02894
21603	TSMT	440214	I	
21600	TSMT	440726	I	
21729	TSMT	440162	I	
21659	TSMT	440151	I	
21660	TSMT	440710	I	
21723	TSMT	14044	I	

<u>SSR #</u> (Continued)	<u>Carrier</u>	<u>Trailer Number</u>	<u>NRC Region</u>	<u>Shipper</u>
21600	Home	440095	I	Yankee Atomic Electric Company Star Route Rowe, MA 01367
21604	CNSI	021	I	Consolidated Edison Company of New York, Inc. Broadway & Blakeley Streets Buchanan, NY 10511
21607	Hittman	72236	III	Commonwealth Edison
21728	Hittman	100-10	III	Quad Cities Station
21664	Hittman	72238	III	22710 206 Avenue N.
21702	Hacke	72234	III	Cordova, IL 61242
21606	Hittman	72229	III	Commonwealth Edison
21605	Hacke	301	III	RR #1
21663	Hittman	72231	III	Morris, IL 60450
21671	Hacke	72228	III	
21602	TSMT	544134	II	General Electric Company Castle Hayne Road Wilmington, NC 28401 Docket/Report No. 70-1113/80-11
21657	TSMT	34	I	Vermont Yankee Nuclear Power Station P. O. Box 157 Vernon, VT 05354
21669	TSMT	128103	I	Jersey Central Power & Light Oyster Creek Station Rt. #9 Forked River, NJ 08731
21628	Hittman	72233	I	Peach Bottom Atomic Power Station
21724	Hittman	72237	I	RD #1
21697	Hittman	72233	I	Delta, PA 17314
21686	Land Lease	SL-1	I	
21725	CNSI	052	I	Boston Edison Company
21699	CNSI	136001	I	Rocky Hill Road
21692	CNSI	136002	I	Plymouth, MA 02360
21703	CNSI	28	I	Northeast Nuclear Energy Company
21688	Home	136003	I	Rope Ferry Road
21690	Home	630025	I	Box 128 Waterford, CT 06360

<u>SSR #</u> (Continued)	<u>Carrier</u>	<u>Trailer Number</u>	<u>NRC Region</u>	<u>Shipper</u>
21698	Mason-Dixon	42045	II	TNS, Inc.
21701	Mason-Dixon	41859	II	P. O. Box 158 Jonesboro, TN 37659
21691	Nuclear Diagnostic	3	I	Nuclear Diagnostic Laboratory, Inc. 1000 Iowa South Street Peekskill, NY 10506
21694	CNSI	032	I	Connecticut Yankee Atomic Power Company RR #1 Box 127E East Hampton, CT 06424
21696	TSMT	72235	III	Commonwealth Edison
21658	TSMT	72232	III	Zion Station 101 Shiloh Blvd. Zion, IL 60099
21695	TSMT	440999	I	Rockwell International
21633	TSMT	440244	I	c/o Frankford Arsonal Bridge & Tacomy Streets Philadelphia, PA 19137
21711	Saunders	39231	II	Medical University of South Carolina Radiation Safety Office 171 Ashley Street Charleston, SC 29405
21642	CNSI	033	II	Charleston Naval Shipyard Charleston, SC 29408
21662	East Coast	057	III	Wisconsin Public Service Corporation Kewaunee Nuclear Plant Kewaunee, WI 54216
21654	Spector	23361	II	Babcock and Wilcox Company Naval Nuclear Fuel Division P. O. Box 785 Lynchburg, VA 24505 Docket/Report No. 70-27/80-12
21668	CNSI	0	II	Florida Power & Light Company St. Lucie #1 P. O. Box 128 Hutchinson Island Ft. Pierce, FL 33450 Docket/Report No. 50-335/80-26

<u>SSR #</u> (Continued)	<u>Carrier</u>	<u>Trailer</u> <u>Number</u>	<u>NRC</u> <u>Region</u>	<u>Shipper</u>
21678	CNSI	045	I	Niagara Mohawk Power Corporation Nine Mile Point Nuclear Station P. O. Box 32 Lycoming, NY 13093