



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

Special Report: WASTE PACKAGING INSPECTIONS OF LICENSEE-SHIPPERS REPORT NO. 80-07

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

Licensee-  
Shipper: See Attachment A

Disposal Site: Chem-Nuclear Systems, Inc.  
P. O. Box 726, Barnwell, South Carolina 29812  
Docket No. 15000039

Inspector: T. C. MacArthur June 23, 1980  
T. C. MacArthur, Radiation Specialist, Date Signed  
FF&MS Section, FF&MS Branch

Approved by: G. L. Troup 6/23/80  
G. L. Troup, Chief, REW Section FF&MS Branch Date Signed

SUMMARY

Inspection Dates: May 15-16, 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 20 shipments, no items of noncompliance were identified.

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## DETAILS

### 1. Persons Contacted

R. Sappington, South Carolina, DHEC  
W. House, South Carolina, DHEC  
V. Autry, South Carolina, DHEC

### 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

Twenty shipments were inspected during the period of May 15-16, 1980. 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

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 A

<u>SSR No.</u>	<u>NRC Region</u>	<u>Carrier</u>	<u>Trailer No.</u>	<u>Shipper</u>
020259	III	Tri-State	72235	Commonwealth Edison Dresden Reactor RR #1 Morris, IL 60450
020238	II	CNSI	026	Duke Power Company P. O. Box 1437 Hwy 130 Seneca, SC 27678 Docket/Report Nos. 50-269/80-19 50-270/80-14 and 50-287/80-13
020239	I	Tri-State	340680	Babcock and Wilcox Company Nuclear Materials Division 609 N. Warren Avenue Apollo, PA 15613
020241	II	CNSI	049	Carolina Power & Light Company Box 10429 Southport, NC Docket/Report Nos. 50-325/80-22 and 50-324/80-19
020242	I	Tri-State	444544	Nuclear Metals, Inc. 2229 Main Street C Concord, MS 01742
020243	I	CNSI	005	Boston Edison Rocky Hill Road Plymouth, MA 02360
020240	I	CNSI	010	Boston Edison Rocky Hill Road Plymouth, MA 02360
020249	II	Tri-State	TV-45	Tennessee Valley Authority P. O. Box 2000 Decatur, AL 35602 Docket/Report Nos. 50-259/80-23 50-260/80-17 and 50-296/80-18
020248	I	Spector	7438	Nuclear Metals, Inc. 2229 Main Street C Concord, MA 01742

<u>SSR No.</u> (Continued)	<u>NRC Region</u>	<u>Carrier</u>	<u>Trailer No.</u>	<u>Shipper</u>
20257	III	Hacke	72238	Commonwealth Edison Zion Station 101 Shiloh Blvd. Zion, IL 60099
020256	III	Hacke	72484	Commonwealth Edison Quad Cities Station 101 Shiloh Blvd. Zion, IL 60099
020261	II	CNSI	024	Carolina Power and Light P. O. Box 10429 Southport, NC 28461
020260	I	Tri-State	440320	Public Service Electric & Gas P. O. Box 168 Hancocks Bridge, NJ 08038
020250	III	Hacke	72230	Commonwealth Edison RR #1 Morris, IL 60450
020254	I	CNSI	018	Baltimore Gas & Electric Calvert Cliffs Nuclear Plant Lysby, MD 20657
020255	II	CNSI	011	Westinghouse Electric Company P. O. Drawer R Columbia, SC 29250 Docket/Report No. 70-1151/80-15
020253	I	Hittman	217	Jersey Central Power and Light Oyster Creek Station Rt. #9 Forked River, NJ 08731
020252	II	Spector	25088	Babcock and Wilcox NNFD P. O. Box 785 Lynchburg, VA 24505 Docket/Report No. 70-27/80-8
020258	II	CNSI	039	Carolina Power and Light Company P. O. Box 10429 Southport, NC 28461

<u>SSR No.</u> (Continued)	<u>NRC Region</u>	<u>Carrier</u>	<u>Trailer No.</u>	<u>Shipper</u>
020247	III	McCormack	214	Commonwealth Edison Quad Cities Station 22710 206 Avenue N. Cordova, IL 61242