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

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: John Potter /for — 3/28/80
R. A. Brown, Radiation Specialist, FF&MS Section, FF&MS Branch — Date Signed

Approved by: John Potter — 3/28/80
J. P. Potter, Chief, FF&MS Section, FF&MS Branch — Date Signed

SUMMARY

Inspection Dates: March 13-14, 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 15 shipments, no items of noncompliance were identified.

DETAILS

1. Persons Contacted

R. Sappington, South Carolina DHEC
W. House, South Carolina DHEC
D. Ebenhock, Chem-Nuclear Systems, Inc.
L. Reynolds, Chem-Nuclear Systems, Inc.
C. Hathaway, Chem-Nuclear Systems, Inc.

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

Fifteen shipments were inspected during the period of March 13-14, 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

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 positions 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. Contamination Smears

Each vehicle and a representative sample package was surveyed for removable contamination by smearing over a 300 square centimeters area of the surface.

No more than two smears were taken from any package or vehicle. Smears were taken from areas that would most likely be contaminated. The smears were checked for gross Beta-gamma contamination at the site.

No smears were found to be contaminated in excess of 49 CFR 173.397 limits.

8. 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 requirments 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.

9. Verification of Package Contents

Due to the lack of facilities for properly opening packages at the site, the criteria for opening packages was restricted to those packages containing solidified waste (to verify the absence of free-standing water) and/or where there was evidence of leakage.

No items of noncompliance were noted.

APR - 7 1980

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ATTACHMENT A

SSR NO.	NRC Region	CARRIER	TRAILER NO.	LICENSEE-SHIPPER
019104	I	HITTMAN	72233	Philadelphia Electric Company
019110	I	Tri-State	72485	2301 Market Street
019119	I	Hittman	72237	Philadelphia, PA 19101
				Peach Bottom Plant
				Docket No. 50-277
019113	I	Chem-Nuclear	049	Power Authority of the State of New York
				10 Columbus Circle
				New York, NY 10019
				Fitzpatrick Plant
				Docket No. 50-333
019114	I	Chem-Nuclear	044	Niagara Mohawk Power Corporation
				300 Erie Boulevard West
				Syracuse, NY 13202
				Nine Mile Point Plant
				Docket No. 50-220
019122	I	Chem-Nuclear	040	Boston Edison Company
				800 Boylston Street
				Boston, MA 02199
				Pilgrim Plant
				Docket No. 50-293
019108	II	Chem-Nuclear	022	Virginia Electric & Power Company
				Attn: J. H. Ferguson
				Executive Vice President-Power
				P. O. Box 26666
				Richmond, VA 23261
				Surry Plant
				Docket No. 50-280
				Report No. 80-07
019111	II	Chem-Nuclear	050	Carolina Power & Light Company
019117	II	Chem-Nuclear	007	Attn: J. A. Jones, Senior Executive
				Vice President and Chief
				Operating Officer
				411 Fayetteville Street
				Raleigh, NC 27602
				Brunswick Plant
				Docket No. 50-325
				Report No. 80-13
019100	II	Mason-Dixon	41661	Tennessee Nuclear Specialties
				P. O. Box 158
				Jonesboro, TN 37659

SSR NO.	NRC Region	CARRIER	TRAILER NO.	LICENSEE-SHIPPER
019115	II	Chem-Nuclear	033	Westinghouse Electric Corporation Attn: M. D'Amore, Manager Columbia Plant Columbia, SC 29205 Report No. 80-07
019116	II	Home	018	Neoplastic Diseases Dr. Weisman 740 Magnolia Avenue Orlando, FL
019107	II	Chem-Nuclear	026	Duke Power Company Attn: W. O. Parker, Jr. Vice President, Steam Production 422 South Church Street Charlotte, NC 28242 Oconee Plant Docket No. 50-269 Report No. 80-10
019118	III	Hittman	72230	Commonwealth Edison Company Dresden Nuclear Power Station RR #1 Morris, IL 60450 Docket No. 50-010
019105	III	Hittman	72484	Commonwealth Edison Company P. O. Box 767 Chicago, IL 60690 Quad-Cities Plant Docket No. 50-254