



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

Report Nos. 15000039/81/02 AND 50-302/81-04

Licensee: Florida Power Corporation  
St. Petersburg, FL 33733

License No. LPR-72

Inspection at: Chem-Nuclear Systems, Inc., Barnwell, South Carolina

Inspector: T. C. MacArthur 4/30/81  
T. C. MacArthur, Date Signed

Approved by: W. W. Peery 4/30/81  
W. W. Peery, Acting Chief, Date Signed  
Technical Inspection Branch  
Division of Engineering and Technical Inspection

Inspection conducted on February 10, 1981

SUMMARY

Areas Inspected

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, one item of noncompliance was identified.

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## DETAILS

### 1. Persons Contacted

J. Purvis, CNSI  
J. Ott, CNSI  
D. Eberhack, CNSI  
R. Sappington, 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 "arrival survey numbers" (AS No.) and were used by the inspectors to identify licensee-shippers during this inspection.

### 3. Shipments Inspected

One shipment of waste material was received from the Crystal River Plant in trailer #027 on February 10, 1981. The shipment, carried by Chem-Nuclear Systems, Inc., (Trailer #24) identified by AS #24614, was found to be in violation of 49 CFR 173.392(j)(3) in that there were radiation levels of 16 mR/hr at two meters from the vertical planes projected by the outer lateral surfaces of the vehicle. This is a Severity Level III Violation (Supplement V.C.2).

### 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                 |

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/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 two meters from the sides of the vehicle where possible, and on the surface of a representative package. Shipping casks were surveyed at the surface.

One item of noncompliance was identified as described in paragraph 3 above.

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.