

NOTICE OF VIOLATION

General Electric Company

License No. STB-53

As a result of the inspections conducted on February 25 and March 4, 1986, and in accordance with the "General Policy and Procedures for NRC Enforcement Actions," 10 CFR Part 2, Appendix C (1985), the following violation was identified:

10 CFR 71.5 prohibits delivery of licensed materials to a carrier for transport unless the licensee complies with applicable regulations of the Department of Transportation in 49 CFR Parts 170-189.

49 CFR 173.418(a)(3)(4)(i) requires that pyrophoric radioactive materials shipped in quantities not exceeding  $A_2$  per package to be packaged in Type A packagings which are constructed of materials which will not react nor be decomposed by the contents. Contents must be free of water and any contaminants which would increase the reactivity of the material, and made inert to prevent self-ignition during transport by mixing with large volumes of inerting material such as graphite, or dry sand, or other inerting material, or blended into a matrix of hardened concrete.

Contrary to the above, the licensee failed to properly mix the contents of Drum No. 106 (listed on shipment 0286-292-A as solidified oxides of magnesium, thorium chips) to make the contents inert, and Drum No. 233 from shipment 0286-293-A and Drum No. 581 from shipment 0286-294-A contained a liquid contaminant that could have increased the reactivity of the material.

This is a Severity Level III violation (Supplement V).

Pursuant to the provisions of 10 CFR 2.201, you are required to submit to this office within thirty days of the date of this Notice a written statement or explanation in reply, including for each violation: (1) corrective action taken and the results achieved; (2) corrective action to be taken to avoid further violations; and (3) the date when full compliance will be achieved. Consideration may be given to extending your response time for good cause shown.

March 31, 1986  
Dated

Jack A. Hind  
Jack A. Hind, Director  
Division of Radiation Safety  
and Safeguards

FROM REG. 2-91LNTB  
03/18/86 09:27  
2 P. 2

# South Carolina Department of Health and Environmental Control

2600 Bull Street  
Columbia, S.C. 29201

Commissioner  
Robert S. Jackson, M.D.



Board  
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Euz M. Colvin, M.D.

March 10, 1986

CERTIFIED MAIL *FLI*

Mr. J.D. Engel  
Industrial Hygienist  
General Electric Company  
Aircraft Engine Business Group  
Newman Way B-14  
Cincinnati, Ohio 45215

*To: [unclear] [unclear]*  
*From: R. Lickus*

*Daniel W*  
*ACTION*

Dear Mr. Engel:

Investigations conducted on February 25 and March 4, 1986, by the S.C. Department of Health and Environmental Control revealed that shipments of radioactive waste received at Chem-Nuclear Systems, Inc. burial facility in Barnwell, South Carolina were in noncompliance with applicable state and federal regulations.

The violations are identified as follows:

Radioactive Waste Shipment Nos. 0286-292-A, 293-A and 294-A, classified as Radioactive Material, LSA, n.o.s., described as magnesium thorium metal chips solidified with cement, packaged in metal drums were found to contain turnings of magnesium thorium improperly encapsulated in cement and therefore not rendered non-pyrophoric. This is contrary to the requirements of Condition 51 of S.C. Radioactive Material License 097, Amendment 41, and 49 CFR 173.418(a)(4)(i). In addition, Drum #233 from Shipment No. 293-A, and Drum #581 from Shipment No. 294-A contained liquid contrary to the requirements of 49 CFR 173.418(a)(3).

Each of these items constitute separate violations of Section 1.2, Department Regulation 61-83.

Please be informed that pursuant to Section 13-7-180, S.C. Code of Laws, 1976 (as amended) and Section 7.3 of the Department's Regulations for the Transportation of Radioactive Waste Into or Within South Carolina, you are hereby assessed a civil penalty of Two Thousand Dollars (\$2,000.00).

Mr. J.D. Engel  
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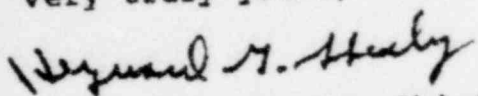
CERTIFIED MAIL

In addition to the civil penalty, all shipments of magnesium thorium metal chips from your facility to the burial facility in Barnwell, S.C. have been suspended until such time as you demonstrate to the Department that adequate measures have been implemented to ensure compliance with all applicable provisions of federal and state law.

If you do not wish to appeal this decision, payment of the civil penalty shall be submitted no later than March 31, 1986, and made payable to the "S.C. Department of Health and Environmental Control". Information concerning corrective measures and procedural modifications shall be submitted accordingly.

You are entitled to a full administrative hearing upon request and are allowed 20 days to make such application. However, should you wish to discuss this matter with us in an informal setting, representatives of this Bureau will be made available to meet with you at a mutually convenient time. Should you desire such a conference or wish to request a formal administrative hearing, please contact Mr. Virgil R. Autry of the Bureau of Radiological Health, (803) 758-5548.

Very truly yours,



Heyward G. Shealy, Chief  
Bureau of Radiological Health

HGS:VRA:kn

cc: Mr. R. Lewis Shaw, Deputy Comm.  
DHEC Env. Quality Control

Samuel L. Finklea, III, Ph.D.  
DHEC Legal Counsel

Mr. David Reid, Exec. Asst.  
Office of the Governor

Mr. Robert Trojanowski  
USNRC, Region II

Bureau of Radiological Health  
Division of Radioactive Material Licensing and Compliance  
Radioactive Shipment Inspection Report

80-02-03

86-02-04

Report No. 86-02-08

## A. General Information:

Aircraft Engine Business Group

1. Shipper General Electric Company Address Cincinnati, Ohio  
2. Carrier CNSI Tractor # 53 Trailer # 3495 Type Ragtop Van  
3. Type Package CSRX Drums CSRX Containing 63 steel drums

## B. Shipping Documentation:

42534 0286-292-A  
1. AS# 42535 & 42588 Volume Allocation # 293-A & 294-A Permit # 0242-34-86-X  
2. Shipping Name & Class: Radioactive Material, LSA, nos HM Id. # UN 2912 (172.202(a))  
3. Total Burial Vol.: 472.5\* ft<sup>3</sup> (172.202(c)) Total Curies: 0.2838\* 0.02745 (172.203(d))  
4. Radionuclides: 457.5 Thorium (172.203(d))  
5. Describe chem./phy. media: solidified oxides, magnesium, thorium metal chips (172.203(d))  
6. Chelating Agents(?) none Shippers Certification: State ✓ DOT ✓ (172.204)  
7. Exclusive Use ✓ Instructions ✓ (173.425(b)) Total T.I. NA (177.842(a))  
8. Check for: Radiation Survey ✓ (173.441) Contamination Levels ✓ (173.443)  
9. Compare: Radionuclides w/resin analysis ✓ Rad/Contamination Levels w/CNSI/BRH ✓

(\*) Shipments 292-A &amp; 293-A

## C. Shipment Inspection Check List:

<u>7/7/7</u> Shipment Braced/Blocked (173.425(b)(6))	<u>✓</u> Lids ( <u>Drum</u> , box, cask) secure (173.425)(b)
<u>7/7/7</u> Visible Leakage (173.425(B)(1))	<u>✓</u> Visible Damage (173.425)
<u>7/7/7</u> Package Labeling: W-I, Y-II, III (172.403)	<u>NA</u> Cask Defects/Missing Parts
(b) & (c) or "Radi active LSA" (173.425)	<u>✓</u> Radiation Survey: Cab/sleeper,
<u>7/7/7</u> Waste Class. Marked <u>A-B-C Stable/Unstable</u>	trailer/truck (173.441)
<u>7/7/7</u> Gross Weight Marked (172.310)	<u>✓</u> Contamination Levels (173.443)
[LSA Exclusive Use Exempt]	<u>✓</u> Vehicle Placards (173.425(c)) (172.507)
<u>NA</u> Type A/ Type B Package Marked (172.310)	<u>NA</u> Tiedowns Secure/Adequate
<u>7/7/7</u> Trailer/Tractor Defects	<u>X</u> Offloading Discrepancies
<u>NA</u> Packages banded/reinforced, palletized	

## D. Radiation/Contamination Survey: (transport vehicle or package)

(mR/hr) Surface: 4.0; 0.5; 1.0 2 meters: 0.8; 0.08

Surface: _____	Cab/sleeper	Surface: _____
2 meters: _____	0.2	2 meters: _____

Surface: 2.0; 0.5; 3.0 2 meters: 0.8; 0.08; 0.5

Highest contamination detected: Arrival 19, 19, 8 dpm/100cm<sup>2</sup> Release \_\_\_\_\_ dpm/100cm<sup>2</sup>  
21 dpm/100cm<sup>2</sup> \_\_\_\_\_ dpm/100cm<sup>2</sup>

E. Results of Inspection: Summary of violations and discrepancies Upon Department inspection, it was determined that these shipments had not been properly solidified to render the contents non-pyrophoric. Drum #106 from Shipment 0286-292-A was found to contain turnings in the bottom of the drum. This is contrary to the requirements of Condition 51, SC Radioactive Material License 097, Amendment 41, and 49CFR 173.418(a)(4)(1). In addition, Drum #233 from Shipment 0286-293-A and Drum # 581 from Shipment 0286-294-A was found to contain liquid contrary to the requirements of 49 CFR 173.418(A)(3). Each of these items constitute separate violations of Section 1.2, Department Regulation 61-83.

Date: February 25, 1986

Inspector's Signature s/Richard S. Sappington