

FLORIDA POWER AND LIGHT COMPANY
 ST. LUCIE PLANT
 SEMI-ANNUAL REPORT
 JANUARY 1, 1990 THROUGH JUNE 30, 1990
 UNITS 1 AND 2, TABLE 3.9

A. Solid Waste Shipped Off-Site for Burial or Disposal

1. Type of Waste	Unit	6 Mo. Period	Error %
a. Spend resin,	M3	2.458 E+1	
Process filters	Ci	1.059 E+2	2.0 E+1
b. Dry Compressible	M3	3.121 E+1	
Waste (Note 5)	Ci	7.080 E+0	2.0 E+1
c. Irradiated	M3	0	
Components	Ci	0	2.0 E+1
d. Other			
1. Non-Compressible Metal	M3	2.286 E+1	2.0 E+1
(DAW) (Note 6)	Ci	8.610 E-1	
2. Solidified	M3	5.873 E+0	
Tank Sludge	Ci	3.650 E+0	2.0 E+1

2. Estimate of Major Nuclid Composition (By Type of Waste)

Category	Nuclides	%
a.	Co 60	2.75 E+1
	Co 58	1.44 E+1
	Fe 55	1.24 E+1
	Cs 137	1.19 E+1
	Cs 134	7.84 E+0
	Cr 51	4.93 E+0
	Ni 63	4.82 E+0
	Be 7	4.41 E+0
	Mn 54	3.51 E+0
	Nb 95	2.46 E+0
	I 131	2.35 E+0
	Zr 95	1.42 E+0
b.	Fe 55	5.99 E+1
	Cs 137	1.50 E+1
	Co 60	1.15 E+1
	Cs 134	4.96 E+0
	Co 58	3.99 E+0
	Ni 63	1.26 E+0
	Nb 95	1.18 E+0
	Sb 125	8.40 E-1

A.

2. Estimate of Major Nuclide Composition (By Type of Waste)
(Continued)

Category	Nuclides	%
c.	N/A	N/A
d.	Co 60	4.26 E+1
	Fe 55	3.57 E+1
	Ni 63	9.56 E+0
	Cs 137	6.25 E+0
	Cs 134	1.92 E+0
	Sb 125	1.74 E+0
	Mn 54	9.70 E-1

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
44	Sole Use Truck	Barnwell, S. C.

B. Irradiated Fuel Shipments

Number of Shipments	Mode of Transportation	Destination
0	N/A	N/A

N/A = Not Applicable

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UNITS 1 AND 2, TABLE 3.9 (CONTINUED)

Waste Class	Total Volume Cubic Ft.	Total Curies (Note 1)	Principal Radionuclides Notes 1 & 2)	Type of Waste (Note 3)	Category Reg-Guide 1.21	Type of Container (Note 4)	Solidification Agent
Class A	896.3	1.90E-1	NA	PWR Compactible Trash (Note 5)	1.b.	Non-specification Strong Tight Package	None
Class A	807.4	8.61E-1	NA	PWR Non-Compactible Trash (Note 6)	1.d.	Non-specification Strong Tight Package	None
Class A	215.9	1.87E-4	NA	PWR Ion-Exchange Resin	1.a.	Non-specification Strong Tight Package	None
Class A	205.8	6.89	Cs 137, Sr 90	PWR Compactible Trash	1.b.	NRC Certified LSA Type A	None
Class A	207.4	3.65	Ni 63, Cs 137	Solidified Tank Sludge	1.d	NRC Certified LSA Type A	Cement
Class A	205.8	1.79	SR 90, Cs 137	PWR Ion-Exchange Resin	1.a	NRC Certified LSA Type A	None
Class A	205.8	2.72	Ni 63, Sr90, I 129, C14, Pu 241	PWR Process Filters	1.a.	NRC Certified LSA Type A	None
Class B	120.3	81.35	Co 60, Ni 63, Sr 90, Cs 137 Sum of Nuclides $T_{1/2} < 5yr.$	PWR Ion-Exchange Resin	1.a.	NRC Certified LSA Type A	None
Class C	120.3	20.10	Co 60, Ni 63, Sr 90, Cs 137, C 14, I 129, Pu 241, Sum of Nuclides $T_{1/2} < 5yr.$	PWR Process Filers	1.a.	NRC Certified Type B	None

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UNITS 1 AND 2 TABLE 3.9 (CONTINUED)
SOLID WASTE SUPPLEMENT.

Note 1: The total curie quantity and radionuclide composition of solid waste shipped from the St. Lucie plant, Units 1 and 2 are determined using a combination of qualitative and quantitative techniques. In general, the St. Lucie Plant follows the guidelines outlined in the Low Level Waste Licensing Branch Technical Position (BTP) on Radioactive Waste Classification (5/11/83) for these determinations.

The most frequently used techniques for determining the total curie quantity in a package are the dose to curie methods and the (concentration) x (volume or mass) calculations. Where appropriate, engineering type activation analyses may be applied. Since each of the above methodologies involves to some extent qualitative parameters, the total curie quantity is considered to be an estimate.

The composition of radionuclides in the waste is determined by both on-site analyses for principal gamma emitters and periodic off-site analyses for other radionuclides. The on-site analyses are performed either on a batch basis or on a routine basis using reasonably representative samples as appropriate for the waste type. Off-site analyses are used to establish scaling factors or other estimates for radionuclides such as ^3H , ^{14}C , ^{99}Tc , ^{129}I , ^{238}U , ^{241}Pu , ^{242}Cm , ^{63}Ni , ^{55}Fe , and ^{90}Sr .

Note 2: "Principal Radionuclides" refer to those radionuclides contained in the waste in concentrations greater than .01 times the concentration of the nuclides listed in Table 1 or .01 times the smallest concentration of the nuclides listed in Table 2 of 10 CFR 61.

Note 3: "Type of Waste" is generally specified as described in NUREG 0782, Draft Environment Impact Statement on 10 CFR 61, "Licensing Requirements for Land Disposal of Radioactive Waste".

Note 4: "Type of Container" refers to the transport package.

Note 5: The volume and activity listed for Dry Compressible Waste represent the quantity of material that to date has been sent to the Barnwell, South Carolina burial facility. This material was shipped to a contracted vendor for volume reduction prior to final disposal at the Barnwell, South Carolina burial facility. During the reporting period, six shipments of Dry Compressible Waste (5,520 cubic feet, 1.285E+0 Curies) were made from the St. Lucie plant to the volume reduction facility. This material was shipped via "Sole Use Truck" in non-specification strong tight packages.

Note 6: The volume and activity listed for non-compressible metal represent the quantity of material that during the reporting period could not be recycled by the contracted vendor and required disposal.

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