Attachment 1
1999 Annual Radioactive Effluent Releases Report for SNEC
E910-00-002

Summary of Radioactive Liquid and Gaseous Effluents and Solid Waste Released from SNEC during 1999

TABLE 1A
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES
SNEC

	UNITS	1999 1ST QUARTER	1999 2ND QUARTER	1999 3RD QUARTER	1999 4TH QUARTER	EST. TOTAL ERROR %
A. FISSION AND ACTIVATION GASES						
1. TOTAL RELEASE	Ci	<LLD	<LLD	<LLD	<LLD	25%
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	N/A	N/A	N/A	N/A	
3. PERCENT OF TECH SPEC LIMIT	%	*	*	*	*	
B. IODINES		NOT APPLICABLE FOR SNEC				
C. PARTICULATES						
1. PARTICULATES WITH HALF-LIVES > 8 DAYS	Ci	<LLD	<LLD	<LLD	<LLD	25%
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	N/A	<N/A	<N/A	<N/A	
3. PERCENT OF TECH SPEC LIMIT	%	*	*	*	*	
4. GROSS ALPHA RADIOACTIVITY	Ci	<LLD	<LLD	<LLD	<LLD	
D. TRITIUM						
1. TOTAL RELEASE	Ci	1.03E-04	2.36E-04	2.18E-04	2.53E-04	25%
2. AVERAGE RELEASE RATE FOR PERIOD	uCi/sec	1.32E-05	3.00E-05	2.74E-05	3.18E-05	
3. PERCENT OF TECH SPEC LIMIT	%	*	*	*	*	
# BATCH RELEASES		0	0	0	0	

* % ODCM LIMITS: LISTED ON DOSE SUMMARY TABLE
NOTE: ALL LESS THAN (<) VALUES ARE IN uCi/ml

TABLE 1C
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
GASEOUS EFFLUENTS-GROUND LEVEL RELEASES
SNEC
1999

		CONTINUOUS MODE		BATCH MODE		CONTINUOUS MODE		BATCH MODE	
NUCLIDES RELEASED	UNIT	1ST QUARTER	2ND QUARTER	1ST QUARTER	2ND QUARTER	3RD QUARTER	4TH QUARTER	3RD QUARTER	4TH QUARTER
1. FISSION GASES									
KRYPTON-85	Ci	<8.00E-6	<8.00E-6	<8.00E-6	<8.00E-6	<8.00E-6	<8.00E-6	<8.00E-6	<8.00E-6
KRYPTON-85M	Ci	<5.00E-8	<5.00E-8	<5.00E-8	<5.00E-8	<5.00E-8	<5.00E-8	<5.00E-8	<5.00E-8
KRYPTON-87	Ci	<8.00E-8	<8.00E-8	<8.00E-8	<8.00E-8	<8.00E-8	<8.00E-8	<8.00E-8	<8.00E-8
KRYPTON-88	Ci	<1.00E-7	<1.00E-7	<1.00E-7	<1.00E-7	<1.00E-7	<1.00E-7	<1.00E-7	<1.00E-7
XENON-133	Ci	<8.00E-8	<8.00E-8	<8.00E-8	<8.00E-8	<8.00E-8	<8.00E-8	<8.00E-8	<8.00E-8
XENON-135	Ci	<5.00E-8	<5.00E-8	<5.00E-8	<5.00E-8	<5.00E-8	<5.00E-8	<5.00E-8	<5.00E-8
XENON-135M	Ci	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7
XENON-138	Ci	<3.00E-7	<3.00E-7	<3.00E-7	<3.00E-7	<3.00E-7	<3.00E-7	<3.00E-7	<3.00E-7
AR-41	Ci	<1.00E-4	<1.00E-4	<1.00E-4	<1.00E-4	<1.00E-4	<1.00E-4	<1.00E-4	<1.00E-4
TOTAL FOR PERIOD	Ci	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2. IODINES		NOT APPLICABLE TO SNEC							
3. PARTICULATES									
STRONTIUM-90	Ci	<1.00E-11	<1.00E-11	N/A	N/A	<1.00E-11	<1.00E-11	N/A	N/A
COBALT 60	Ci	<1.00E-10	<1.00E-10	N/A	N/A	<1.00E-10	<1.00E-10	N/A	N/A
ANTIMONY 125	Ci	<1.00E-10	<1.00E-10	N/A	N/A	<1.00E-10	<1.00E-10	N/A	N/A
CESIUM-134	Ci	<1.00E-10	<1.00E-10	N/A	N/A	<1.00E-10	<1.00E-10	N/A	N/A
CESIUM-137	Ci	<1.00E-10	<1.00E-10	N/A	N/A	<1.00E-10	<1.00E-10	N/A	N/A
TOTAL FOR PERIOD	Ci	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4. TRITIUM									
TRITIUM	Ci	1.03E-04	2.36E-04	<1.00E-6	<1.00E-6	2.18E-04	2.53E-04	<1.00E-6	<1.00E-6

NOTE: ALL LESS THAN (<) VALUES ARE IN uCi/ml

TABLE 2A
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES
SNEC

	UNITS	1999 1ST QUARTER	1999 2ND QUARTER	1999 3RD QUARTER	1999 4TH QUARTER	EST. TOTAL ERROR %
A. FISSION AND ACTIVATION PRODUCTS						
1. TOTAL RELEASES (NOT INCLUDING TRITIUM, GASES, ALPHA)	Ci	<LLD	<LLD	<LLD	<LLD	25%
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ml	N/A	N/A	N/A	N/A	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	*	*	
B. TRITIUM						
1. TOTAL RELEASE	Ci	<LLD	<LLD	<LLD	<LLD	25%
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ml	N/A	N/A	N/A	N/A	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	*	*	
C. DISSOLVED AND ENTRAINED GASES						
1. TOTAL RELEASE	Ci	<LLD	<LLD	<LLD	<LLD	25%
2. AVERAGE DILUTED CONCENTRATION DURING PERIOD	uCi/ml	N/A	N/A	N/A	N/A	
3. PERCENT OF APPLICABLE LIMIT	%	*	*	*	*	
D. GROSS ALPHA ACTIVITY						
1. TOTAL RELEASE	Ci	<LLD	<LLD	<LLD	<LLD	25%
E. VOLUME OF WASTE RELEASED (PRIOR TO DILUTION)	liters	NONE	NONE	NONE	NONE	10%
F. VOLUME OF DILUTION WATER USED	liters	0.00E+00	0.00E+00	0.00E+00	0.00E+00	10%
NUMBER OF BATCH RELEASES		0	0	0	0	

* % ODCM LIMITS: LISTED ON DOSE SUMMARY TABLE
NOTE: ALL LESS THAN (<) VALUES ARE IN uCi/ml

TABLE 2B
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
LIQUID EFFLUENTS
SNEC
1999

NUCLIDES RELEASED	UNIT	CONTINUOUS MODE		BATCH MODE		CONTINUOUS MODE		BATCH MODE	
		1ST QUARTER	2ND QUARTER	1ST QUARTER	2ND QUARTER	3RD QUARTER	4TH QUARTER	3RD QUARTER	4TH QUARTER
CO 60	Ci	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7
SR 90	Ci	<5.00E-8	<5.00E-8	<5.00E-8	<5.00E-8	<5.00E-8	<5.00E-8	<5.00E-8	<5.00E-8
SB 125	Ci	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7
CS 134	Ci	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7
CS 137	Ci	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7	<5.00E-7
H-3	Ci	<1.00E-5	<1.00E-5	<1.00E-5	<1.00E-5	<1.00E-5	<1.00E-5	<1.00E-5	<1.00E-5
TOTAL FOR PERIOD	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

NOTE: ALL LESS THAN VALUES (<) ARE IN uCi/ml

SNEC ANNUAL EFFLUENT SUMMARY
1999

LIQUID

CO-60 CURIES	CS-134 CURIES	CS-137 CURIES	SB-125 CURIES	SR-90 CURIES	GROSS A CURIES	H-3 CURIES
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

GASEOUS

CO-60 CURIES	CS-134 CURIES	CS-137 CURIES	SB-125 CURIES	SR-90 CURIES	G. ALPHA CURIES	H-3 CURIES
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.09E-04

Attachment 2
1999 Annual Radioactive Effluent Releases Report for SNEC
E910-00-002

Solid Waste Shipped Offsite during 1999

NRC Regulatory Guide 1.21 Reports

Report Date : 4/13/2000

Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
During Period From 01/01/1999 to 12/31/1999 Percent Cutoff: 0

Waste Stream : Resins, Filters, and Evap Bottoms

Waste Class	Volume Ft^3	Volume M^3	Curies Shipped	% Error (Ci)
A	0.00E+00	0.00E+00	0.00E+00	+/- 25%
B	0.00E+00	0.00E+00	0.00E+00	+/- 25%
C	0.00E+00	0.00E+00	0.00E+00	+/- 25%
All	0.00E+00	0.00E+00	0.00E+00	+/- 25%

Waste Stream : Dry Active Waste
DAW Concrete Rubble DAW Mixture1/2/6 Composite-DAW

Waste Class	Volume Ft^3	Volume M^3	Curies Shipped	%Error (Ci)
A	7.44E+03	2.11E+02	2.15E-01	+/-25%
B	0.00E+00	0.00E+00	0.00E+00	+/-25%
C	0.00E+00	0.00E+00	0.00E+00	+/-25%
All	7.44E+03	2.11E+02	2.15E-01	+/-25%

Waste Stream : Irradiated Components

Waste Class	Volume Ft^3	Volume M^3	Curies Shipped	% Error (Ci)
A	0.00E+00	0.00E+00	0.00E+00	+/-25%
B	0.00E+00	0.00E+00	0.00E+00	+/-25%
C	0.00E+00	0.00E+00	0.00E+00	+/-25%
All	0.00E+00	0.00E+00	0.00E+00	+/-25%

NRC Regulatory Guide 1.21 Reports

Report Date : 4/13/2000

Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
During Period From 01/01/1999 to 12/31/1999 Percent Cutoff: 0

Waste Stream : Other Waste
Combined Packages Shield Block/Plug Sm Dia. Piping Rx Cavity Waste
Metal from areas 1&2 ATG-031 Fuel Rack

Waste Class	Volume Ft^3	Volume M^3	Curies Shipped	% Error (Ci)
A	6.01E+03	1.70E+02	2.94E-01	+/-25%
B	1.31E+02	3.70E+00	1.21E+01	+/-25%
C	1.02E+03	2.89E+01	3.13E-01	+/-25%
All	7.16E+03	2.03E+02	1.27E+01	+/-25%

Waste Stream : Sum of All 4 Categories
Combined Packages DAW Concrete Rubble DAW Mixture1/2/6
Composite-DAW Shield Block/Plug Sm Dia. Piping Rx Cavity Waste
Metal from areas 1&2 ATG-031 Fuel Rack

Waste Class	Volume Ft^3	Volume M^3	Curies Shipped	% Error (Ci)
A	1.35E+04	3.81E+02	5.08E-01	+/-25%
B	1.31E+02	3.70E+00	1.21E+01	+/-25%
C	1.02E+03	2.89E+01	3.13E-01	+/-25%
All	1.46E+04	4.14E+02	1.29E+01	+/-25%

-Combined Waste Type Shipment, Major Volume Waste Type Shown

NRC Regulatory Guide 1.21 Reports

Report Date : 4/13/2000

Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
During Period From 01/01/1999 to 12/31/1999 Percent Cutoff: 0

Dry Active Waste		
Waste Class A		
Nuclide Name	Percent Abundance	Curies
C-14	0.005%	1.07E-05
Fe-55	0.030%	6.36E-05
Co-60	9.400%	2.02E-02
Ni-59	0.002%	4.36E-06
Ni-63	0.212%	4.55E-04
Sr-90	0.556%	1.20E-03
Tc-99	0.010%	2.07E-05
Cs-137	76.307%	1.64E-01
Ce-144	12.984%	2.79E-02
Pu-238	0.025%	5.31E-05
Pu-240	0.061%	1.31E-04
Pu-241	0.315%	6.76E-04
Pu-242	0.000%	6.16E-08
Am-241	0.087%	1.86E-04
Cm-242	0.002%	4.30E-06
Cm-244	0.005%	1.15E-05
Dry Active Waste		
Waste Class All		
Nuclide Name	Percent Abundance	Curies
C-14	0.005%	1.07E-05
Fe-55	0.030%	6.36E-05
Co-60	9.400%	2.02E-02
Ni-59	0.002%	4.36E-06
Ni-63	0.212%	4.55E-04
Sr-90	0.556%	1.20E-03
Tc-99	0.010%	2.07E-05
Cs-137	76.307%	1.64E-01
Ce-144	12.984%	2.79E-02
Pu-238	0.025%	5.31E-05
Pu-240	0.061%	1.31E-04
Pu-241	0.315%	6.76E-04
Pu-242	0.000%	6.16E-08
Am-241	0.087%	1.86E-04
Cm-242	0.002%	4.30E-06
Cm-244	0.005%	1.15E-05
Other Waste		
Waste Class A		
Nuclide Name	Percent Abundance	Curies
H-3	0.130%	3.81E-04

C-14	0.003%	9.27E-06
Fe-55	3.260%	9.57E-03
Co-60	17.187%	5.04E-02
Ni-59	0.611%	1.79E-03
Ni-63	12.106%	3.55E-02
Sr-90	2.200%	6.46E-03
Nb-94	0.127%	3.73E-04
Tc-99	0.004%	1.09E-05
I-129	0.000%	1.13E-06
Cs-134	0.023%	6.67E-05
Cs-137	49.981%	1.47E-01
Ce-144	0.471%	1.38E-03
Eu-152	0.165%	4.84E-04
Eu-154	0.073%	2.13E-04
Eu-155	0.002%	4.92E-06
U-234	0.000%	1.26E-06
U-238	0.000%	8.65E-07
Pu-238	0.364%	1.07E-03
Pu-239	0.052%	1.53E-04
Pu-240	0.712%	2.09E-03
Pu-241	12.116%	3.56E-02
Pu-242	0.000%	1.93E-07
Am-241	0.409%	1.20E-03
Cm-242	0.001%	2.01E-06
Cm-243	0.000%	3.55E-08
Cm-244	0.002%	7.13E-06
Other Waste		
Waste Class B		
Nuclide Name	Percent Abundance	Curies
H-3	0.016%	1.99E-03
C-14	0.092%	1.12E-02
Fe-55	0.018%	2.15E-03
Fe-59	0.812%	9.85E-02
Co-60	0.082%	9.93E-03
Ni-59	0.005%	5.72E-04
Ni-63	0.122%	1.49E-02
Sr-90	0.012%	1.44E-03
Nb-94	0.001%	9.94E-05
Tc-99	0.007%	8.74E-04
Ag-108m	0.001%	7.88E-05
Sb-125	0.000%	5.12E-06
Te-125m	0.001%	6.59E-05
I-129	0.001%	1.52E-04
Cs-134	0.008%	9.62E-04

Report Date : 4/13/2000

Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
During Period From 01/01/1999 to 12/31/1999 Percent Cutoff: 0

Cs-137	98.633%	1.20E+01
Ce-144	0.101%	1.23E-02
Eu-152	0.000%	2.37E-05
Eu-154	0.000%	2.73E-05
Eu-155	0.000%	6.44E-06
Pu-238	0.002%	2.53E-04
Pu-239	0.003%	3.19E-04
Pu-240	0.001%	1.56E-04
Pu-241	0.078%	9.44E-03
Am-241	0.004%	4.33E-04
Cm-242	0.000%	2.28E-05
Cm-243	0.000%	1.91E-05
Other Waste		
Waste Class C		
Nuclide Name	Percent Abundance	Curies
C-14	0.005%	1.62E-05
Fe-55	0.188%	5.90E-04
Co-60	4.490%	1.41E-02
Ni-59	0.485%	1.52E-03
Ni-63	4.829%	1.51E-02
Sr-90	2.097%	6.57E-03
Nb-94	0.005%	1.60E-05
Tc-99	0.001%	2.95E-06
Ag-108m	0.003%	1.09E-05
Sb-125	0.001%	4.40E-06
Cs-134	0.000%	1.45E-06
Cs-137	3.605%	1.13E-02
Ce-144	0.002%	5.35E-06
Eu-152	0.231%	7.24E-04
Eu-154	0.403%	1.26E-03
Eu-155	0.119%	3.74E-04
U-234	0.001%	2.21E-06
U-235	0.000%	2.05E-07
U-238	0.001%	1.61E-06
Pu-238	1.933%	6.06E-03
Pu-240	5.371%	1.68E-02
Pu-241	70.085%	2.20E-01
Am-241	6.020%	1.89E-02
Am-243	0.000%	6.10E-07
Cm-242	0.000%	4.79E-08
Cm-243	0.000%	1.26E-06
Cm-244	0.123%	3.87E-04
Other Waste		

NRC Regulatory Guide 1.21 Reports

Report Date : 4/13/2000

Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
During Period From 01/01/1999 to 12/31/1999 Percent Cutoff: 0

Waste Class All		
Nuclide Name	Percent Abundance	Curies
H-3	0.019%	2.37E-03
C-14	0.088%	1.12E-02
Fe-55	0.097%	1.23E-02
Fe-59	0.773%	9.85E-02
Co-60	0.585%	7.44E-02
Ni-59	0.031%	3.89E-03
Ni-63	0.515%	6.55E-02
Sr-90	0.114%	1.45E-02
Nb-94	0.004%	4.88E-04
Tc-99	0.007%	8.88E-04
Ag-108m	0.001%	8.97E-05
Sb-125	0.000%	9.52E-06
Te-125m	0.001%	6.59E-05
I-129	0.001%	1.53E-04
Cs-134	0.008%	1.03E-03
Cs-137	95.172%	1.21E+01
Ce-144	0.107%	1.37E-02
Eu-152	0.010%	1.23E-03
Eu-154	0.012%	1.50E-03
Eu-155	0.003%	3.85E-04
U-234	0.000%	3.48E-06
U-235	0.000%	2.05E-07
U-238	0.000%	2.48E-06
Pu-238	0.058%	7.38E-03
Pu-239	0.004%	4.73E-04
Pu-240	0.150%	1.91E-02
Pu-241	2.078%	2.65E-01
Pu-242	0.000%	1.93E-07
Am-241	0.161%	2.05E-02
Am-243	0.000%	6.10E-07
Cm-242	0.000%	2.48E-05
Cm-243	0.000%	2.04E-05
Cm-244	0.003%	3.94E-04
Sum of All 4 Categories		
Waste Class A		
Nuclide Name	Percent Abundance	Curies
H-3	0.075%	3.81E-04
C-14	0.004%	1.99E-05
Fe-55	1.895%	9.63E-03
Co-60	13.897%	7.06E-02
Ni-59	0.354%	1.80E-03
Ni-63	7.080%	3.60E-02

Report Date : 4/13/2000

Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
During Period From 01/01/1999 to 12/31/1999 Percent Cutoff: 0

Sr-90	1.506%	7.65E-03
Nb-94	0.073%	3.73E-04
Tc-99	0.006%	3.15E-05
I-129	0.000%	1.13E-06
Cs-134	0.013%	6.67E-05
Cs-137	61.105%	3.11E-01
Ce-144	5.759%	2.93E-02
Eu-152	0.095%	4.84E-04
Eu-154	0.042%	2.13E-04
Eu-155	0.001%	4.92E-06
U-234	0.000%	1.26E-06
U-238	0.000%	8.65E-07
Pu-238	0.221%	1.12E-03
Pu-239	0.030%	1.53E-04
Pu-240	0.437%	2.22E-03
Pu-241	7.130%	3.62E-02
Pu-242	0.000%	2.55E-07
Am-241	0.273%	1.39E-03
Cm-242	0.001%	6.31E-06
Cm-243	0.000%	3.55E-08
Cm-244	0.004%	1.86E-05
Sum of All 4 Categories		
Waste Class B		
Nuclide Name	Percent Abundance	Curies
H-3	0.016%	1.99E-03
C-14	0.092%	1.12E-02
Fe-55	0.018%	2.15E-03
Fe-59	0.812%	9.85E-02
Co-60	0.082%	9.93E-03
Ni-59	0.005%	5.72E-04
Ni-63	0.122%	1.49E-02
Sr-90	0.012%	1.44E-03
Nb-94	0.001%	9.94E-05
Tc-99	0.007%	8.74E-04
Ag-108m	0.001%	7.88E-05
Sb-125	0.000%	5.12E-06
Te-125m	0.001%	6.59E-05
I-129	0.001%	1.52E-04
Cs-134	0.008%	9.62E-04
Cs-137	98.633%	1.20E+01
Ce-144	0.101%	1.23E-02
Eu-152	0.000%	2.37E-05
Eu-154	0.000%	2.73E-05
Eu-155	0.000%	6.44E-06

Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
During Period From 01/01/1999 to 12/31/1999 Percent Cutoff: 0

Pu-238	0.002%	2.53E-04
Pu-239	0.003%	3.19E-04
Pu-240	0.001%	1.56E-04
Pu-241	0.078%	9.44E-03
Am-241	0.004%	4.33E-04
Cm-242	0.000%	2.28E-05
Cm-243	0.000%	1.91E-05
Sum of All 4 Categories		
Waste Class C		
Nuclide Name	Percent Abundance	Curies
C-14	0.005%	1.62E-05
Fe-55	0.188%	5.90E-04
Co-60	4.490%	1.41E-02
Ni-59	0.485%	1.52E-03
Ni-63	4.829%	1.51E-02
Sr-90	2.097%	6.57E-03
Nb-94	0.005%	1.60E-05
Tc-99	0.001%	2.95E-06
Ag-108m	0.003%	1.09E-05
Sb-125	0.001%	4.40E-06
Cs-134	0.000%	1.45E-06
Cs-137	3.605%	1.13E-02
Ce-144	0.002%	5.35E-06
Eu-152	0.231%	7.24E-04
Eu-154	0.403%	1.26E-03
Eu-155	0.119%	3.74E-04
U-234	0.001%	2.21E-06
U-235	0.000%	2.05E-07
U-238	0.001%	1.61E-06
Pu-238	1.933%	6.06E-03
Pu-240	5.371%	1.68E-02
Pu-241	70.085%	2.20E-01
Am-241	6.020%	1.89E-02
Am-243	0.000%	6.10E-07
Cm-242	0.000%	4.79E-08
Cm-243	0.000%	1.26E-06
Cm-244	0.123%	3.87E-04
Sum of All 4 Categories		
Waste Class All		
Nuclide Name	Percent Abundance	Curies
H-3	0.018%	2.37E-03
C-14	0.087%	1.12E-02
Fe-55	0.096%	1.24E-02

Report Date : 4/13/2000

Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
During Period From 01/01/1999 to 12/31/1999 Percent Cutoff: 0

Fe-59	0.761%	9.85E-02
Co-60	0.731%	9.46E-02
Ni-59	0.030%	3.89E-03
Ni-63	0.510%	6.60E-02
Sr-90	0.121%	1.57E-02
Nb-94	0.004%	4.88E-04
Tc-99	0.007%	9.09E-04
Ag-108m	0.001%	8.97E-05
Sb-125	0.000%	9.52E-06
Te-125m	0.001%	6.59E-05
I-129	0.001%	1.53E-04
Cs-134	0.008%	1.03E-03
Cs-137	94.859%	1.23E+01
Ce-144	0.321%	4.15E-02
Eu-152	0.010%	1.23E-03
Eu-154	0.012%	1.50E-03
Eu-155	0.003%	3.85E-04
U-234	0.000%	3.48E-06
U-235	0.000%	2.05E-07
U-238	0.000%	2.48E-06
Pu-238	0.057%	7.43E-03
Pu-239	0.004%	4.73E-04
Pu-240	0.148%	1.92E-02
Pu-241	2.049%	2.65E-01
Pu-242	0.000%	2.55E-07
Am-241	0.160%	2.07E-02
Am-243	0.000%	6.10E-07
Cm-242	0.000%	2.91E-05
Cm-243	0.000%	2.04E-05
Cm-244	0.003%	4.05E-04

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Report Date : 4/13/2000

Solid Waste Shipped Offsite for Disposal and Estimates of Major Nuclides by Waste Class and Stream
During Period From 01/01/1999 to 12/31/1999

Number of Shipments	Mode of Transportation	Destination
1	Kindrick Trucking Company	Barnwell Waste Management Facility
6	Kindrick Trucking Company	F W Hake
3	Hittman Transport Services	GTS Duratek,, Bear Creek , Inc.
1	Kindrick Trucking Company	GTS Duratek,, Bear Creek , Inc.

Attachment 3
1999 Annual Radioactive Effluent Releases Report for SNEC
E910-00-002

Summary of Unplanned Releases from the SNEC Facility Site During 1999

There were no unplanned releases to unrestricted areas from SNEC site during 1999.

Attachment 4
1999 Annual Radioactive Effluent Releases Report for SNEC
E910-00-002

Changes to the Process Control Program and the Offsite Dose Calculation Manual during 1999, and a listing of new locations for dose calculations and/or environmental monitoring identified by the land use census

1. Changes to the Process Control Program

There were no revisions to this program or procedure in 1999.

2. Changes to the Offsite Dose Calculation Manual during 1999

The following is a description of changes made to the SNEC Facility Offsite Dose Calculation Manual (ODCM) in 1999. The changes are identified by markings in the margin of the affected pages of the attached copy of the procedure (Enclosure 1), clearly indicating the areas of the page that was changed.

1) Changed the term "NRC Region 1 Administrator" to read "NRC Document Control Desk" in Sections 2.2.1.2(A), 2.2.1.3(A), 2.2.2.2 and 2.2.3.1 (pages 19, 20, 21 and 23).
2) The ODCM procedure numbering format was changed from 6575-PLN-4542.08 to E900-PLN-4542.08. Only the cover sheet is annotated on the attached copy of the ODCM.

3. A listing of new locations for dose calculations and/or environmental monitoring identified by the land use census

Per the SNEC ODCM Section 2.3.2 broad leaf vegetation was collected and analyzed for gamma-emitting radionuclides in lieu of performing a land use census. Therefore, no new environmental monitoring locations were identified.

Attachment 5
1999 Annual Radioactive Effluent Releases Report for SNEC
E910-00-002

Instrumentation not returned to operable status within 30 days during 1999

There was no instrumentation not returned to operable status within 30 days per the SNEC ODCM Part 1, Control 2.1.2.b. during 1999.

Attachment 6
1999 Annual Radioactive Effluent Releases Report for SNEC
E910-00-002

Assessment of Radiation Doses Due to Radioactive Liquid and Gaseous Effluents Released from SNEC during 1999

The attached table presents the maximum hypothetical doses to an individual and the general population resulting from 1999 SNEC releases of gaseous and liquid effluents. Provided below is a brief explanation of the table.

A. Liquid (Individual)

SNEC released no liquid effluents in 1999.

B. Gaseous (Individual)

There were four major pathways considered in the dose calculations for SNEC gaseous effluents. These were: (1) individual inhalation of airborne nuclides (2) deposition of radionuclides onto green leafy vegetation with subsequent consumption by man (3) deposition onto grassy areas where milk animals and meat producing animals graze with consumption of the milk and meat by man, and (4) deposition on the ground with subsequent exposure of man. In lieu of real time meteorology, the highest average gaseous dispersion factor was used in all dose calculations for gaseous effluents.

Since there were no noble gases released from SNEC during 1999, the gamma and beta air doses were zero.

The maximum organ dose due to the release of particulates and tritium from SNEC in 1999 was 6.99E-04 mrem to the liver, total body, thyroid, kidney, lung and GI tract of a child residing 200 meters from the site in the N sector.

C. Liquid and Gaseous (Population)

SNEC released no liquid effluents in 1999. The estimated person-rem doses resulting from 1999 SNEC gaseous effluents are shown in the attached tables. These doses were summed over all pathways and the affected populations. The person-rem doses from gaseous effluents were based upon the population estimate and age distribution assumed in the analysis provided in GPU Nuclear letter to the Commissioners 6L20-98-20105 (Docket No. 50-146). Consistent with this analysis, dose calculations were not performed beyond 10 miles as specific population data is not easily available and releases from the site are considered to be at ground level. As a result, releases of particulates beyond 10 miles will be insignificant since it is assumed diffusion and wet and dry deposition beyond 10 miles will deplete the plume before it reaches 10 miles.

C. Liquid and Gaseous (Population) (continued)

Additionally, since the plant has been shut down for so long and all spent fuel has been removed from the site, iodines and noble gases no longer exist.

SNEC gaseous effluents resulted in a whole body population dose of 1.46E-05 person-rem. This is a small fraction of the dose estimate in the previously referenced analysis.

For 1999, SNEC liquid and gaseous effluents resulted in maximum hypothetical doses that were a small fraction of the quarterly and yearly 10 CFR 50 Appendix I dose limits.

Attachment 6

Summary of Maximum Individual Offsite Doses for SNEC
1999

Effluent	Quarter 1 (mrem)	Quarter 1 % Limit	Quarter 2 (mrem)	Quarter 2 % Limit	Quarter 3 (mrem)	Quarter 3 % Limit	Quarter 4 (mrem)	Quarter 4 % Limit	Annual (mrem)	Annual % Limit
Liquid Whole Body	0.00E+00	0.000000%	0.00E+00	0.000000%	0.00E+00	0.000000%	0.00E+00	0.000000%	0.000E+00	0.000000%
Liquid Organ	0.00E+00	0.000000%	0.00E+00	0.000000%	0.00E+00	0.000000%	0.00E+00	0.000000%	0.000E+00	0.000000%
Airborne Particulates	8.87E-05	0.001182%	2.04E-04	0.002716%	1.88E-04	0.002507%	2.19E-04	0.002917%	6.992E-04	0.004661%

Maximum Exposed Individual per 40 CFR 190

Estimated Maximum Organ Dose (Including Whole Body) for Liquid Effluents (mrem)	0.00E+00
Estimated Maximum Organ Dose (Including Whole Body) for Gaseous Effluents (mrem)	6.99E-04
Maximum Exposure to Direct Radiation Based on 67 Hour Occupancy at Site Boundary (mrem)	4.40E-01
Total Estimated Exposure (mrem)	4.41E-01
Percent of Limit	1.76378%

Summary of Estimated Population Dose for SNEC

Effluent	Person-Rem
Liquid Whole Body	0.00E+00
Gaseous Whole Body	1.46E-05

Attachment 7
1999 Annual Radioactive Effluent Releases Report for SNEC
E910-00-002

Assessment of Radiation Doses from Liquid and Gaseous Effluents Releases to Members of the Public within the SNEC Facility Site Boundaries during 1999

The Offsite Dose Calculation Manual requires an assessment of the radiation doses from radioactive liquid and gaseous effluents to members of public due to their activities inside the site boundary during the reporting period. The public did not have unrestricted access to the SNEC site during 1999. Therefore no assessment of this dose is applicable.

Attachment 8
1999 Annual Radioactive Effluent Releases Report for SNEC
E910-00-002

Assessment of Radiation Dose to Most Likely Exposed Real Individual per 40 CFR 190

Dose calculations were also performed to demonstrate compliance with 40 CFR 190 (ODCM Part IV Section 2.10). Gaseous and liquid effluents released from SNEC in 1999 would have resulted in maximum individual doses (regardless of age group) of 6.99E-04 mrem to any organ including the whole body. The direct radiation component was determined using the highest 1999 fenceline exposure rate as measured by a TLD and subtracting from it the lowest TLD exposure rate. This method more accurately determines the exposure from SNEC by subtracting out the exposure rate from other sources of radiation in the environment. Based on the maximum exposure rate of 9.20E+00 mrem/standard month, a person residing at the fenceline for 67 hours (shoreline exposure from Reg. Guide 1.109) would have received an exposure of 8.44E-01 mrem. Based on the lowest exposure rate of 4.40E+00 mrem/standard month and converting it by the same method gives a background exposure of 4.04E-01mR. Therefore, the net exposure from direct radiation from SNEC is 4.40E-01 mrem. Combining the direct radiation exposure (assumed to be equal to dose) with the maximum organ doses from liquid and gaseous releases, the maximum potential (total) dose would have been 4.41E-01mrem to any organ. Both doses are well below the limits specified in 40 CFR 190.

Table 3

Summary of Maximum Individual Offsite Doses for SNEC
1999

Effluent	Quarter 1 (mrem)	Quarter 1 % Limit	Quarter 2 (mrem)	Quarter 2 % Limit	Quarter 3 (mrem)	Quarter 3 % Limit	Quarter 4 (mrem)	Quarter 4 % Limit	Annual (mrem)	Annual % Limit
Liquid Whole Body	0.00E+00	0.000000%	0.00E+00	0.000000%	0.00E+00	0.000000%	0.00E+00	0.000000%	0.000E+00	0.000000%
Liquid Organ	0.00E+00	0.000000%	0.00E+00	0.000000%	0.00E+00	0.000000%	0.00E+00	0.000000%	0.000E+00	0.000000%
Airborne Particulates	8.87E-05	0.001182%	2.04E-04	0.002716%	1.88E-04	0.002507%	2.19E-04	0.002917%	6.992E-04	0.004661%

Maximum Exposed Individual per 40 CFR 190

Estimated Maximum Organ Dose (Including Whole Body) for Liquid Effluents (mrem)	0.00E+00
Estimated Maximum Organ Dose (Including Whole Body) for Gaseous Effluents (mrem)	6.99E-04
Maximum Exposure to Direct Radiation Based on 67 Hour Occupancy at Site Boundary (mrem)	4.40E-01
Total Estimated Exposure (mrem)	4.41E-01
Percent of Limit	1.76378%

Attachment 9
1999 Annual Radioactive Effluent Releases Report for SNEC
E910-00-002

Deviation from the ODCM Sampling and Analysis Regime during 1999

There were two sampling and analysis regime deviations during 1999.

One deviation was due to the tritium sample desiccant column being prematurely exhausted. The other deviation was when the tritium sample desiccant column sampling nozzle broke off and was exposed to the outside atmosphere and therefore considered invalid. The off-site laboratory personnel notified SNEC personnel of the deviations. SNEC deviation reports were written to document the occurrences and corrective actions taken to prevent reoccurrences. For off-site dose calculations, the previous tritium sample results were used for the deviation time periods. No other deviations occurred during 1999.