SEQUOYAH NUCLEAR PLANT

UNITS 1 & 2

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

Supplemental Information

Second Half 1982

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

SUPPLEMENTAL INFORMATION

SECOND HALF 1982

1. Regulatory Limits

a. Fission and Activation Gases:

(1) Instantaneous - Nuclide Dependent (All Release Points)

Shield Building
Auxiliary Building
Condenser Vacuum Exhaust
Service Building

NOTE: Total plant release rate limit per nuclide are established by TVA's Radiological Hygiene Branch. These limits are further evaluated to each vent based on design flowrate. Technical specification will not be exceeded until the sum of individual isotope release rate per release rate limit exceed 1.0.

b. & c. Iodines and particulates, half-lives >8 days

(1) Instantaneous - Nuclide Dependent

NOTE: Total plant release rate limit per nuclide are established by TVA's Radiological Hygiene Branch. These limits are further evaluated to each vent based on design flowrate. Technical specification will not be exceeded until the sum of individual isotope release rate per release rate limit exceed 1.0.

d. Liquid effluent: Σ MPC $\leq$ 1.0 (ref. 10 CFR 20, Appendix B, note 3C, Table II, column 2).

e. Tritium

(1) Liquid - $\leq$ 3.0E-3 µCi/ml (ref. 10 CFR 20, Table II, column 2)

(2) Airborne - (ref. 10 CFR 20, Table I, column 2)

Shield Building	$\leq$ 3.783E+03 µCi/sec
Auxiliary Building	$\leq$ 2.702E+04 µCi/sec

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

SUPPLEMENAL INFORMATION (CONTINUED)

SECOND HALF 1982

1. Regulatory Limits (Continued)

Service Building	$\leq$ 1.405E+03 µCi/sec
Condenser Vacuum Exhaust	$\leq$ 6.079E+00 µCi/sec

NOTE: These limits are establised by TVA's Radiological Hygiene Branch based on each vents design flow rate.

2. Maximum Permissible Concentrations

a. Fission and Activation Gases: Not Applicable

b. Iodines: Not Applicable

c. Particulates, half-lives >8 days: Not Applicable

d. Liquid effluents: sum of indv. MPC ratios $\leq$1.0 (ref. 10 CFR 20, Appendix B, note 1)

3. Average Energy - Not Applicable

4. Measurements and Approximations of Total Radioactivity

a., b. & c. Fission and Activation Gases, Iodines, and Particulates:

a. Fission and Activation Gases

Airborne effluent gaseous activity is continuously monitored and recorded. Additional grab samples from the shield, auxiliary, service and condenser vacuum exhausts are taken and analyzed at least monthly to determine the quantity of noble gas activity released for the month based on the average vent flowrates recorded for the sampling period. Also, noble gas samples are collected and evaluated for the shield and auxiliary buildings following startup, shutdown or a rated thermal power changes exceeding 15% within one hour. The vent flowrates for the shield auxiliary, service buildings, and condenser vacuum exhaust are determined and recorded twice a shift.

The quantity of noble gases released through the shield building due to purging or venting of containment and releases of waste gas decay tanks are also determined.

The total noble gas activity released for the month is then determined by summing all of the activity released from each vent for all sampling periods, the activity released from purging or venting of containment, and the activity released from waste gas decay tank(s).

4. Measurements and Approximations of Total Radioactivity (Continued)

Allowance is made for a plus or minus one sigma counting error associated with the gamma isotopic analyses.

b. & c. Iodines and Particulates

Iodine and particulate activity is continuously monitored and recorded. Charcoal and particulate samples are taken from the shield and auxiliary building exhausts and analyzed at least weekly to determine the total activity released from the plant based on the average vent flowrates recorded for sampling period.

Also, particulate and charcoal samples are taken from the auxiliary and shield buildings once per 24 hours for 2 days following startup, shutdown or a rated thermal power change exceeding 15% within one hour. The quantity of iodine and particulate released from each vent during each sampling period is then determined using the average vent flowrates recorded for the sampling period and activity concentration.

The vent flowrates from the shield and auxiliary buildings are recorded twice a shift.

The total particulate and iodine activity released for the month is then determined by summing all of the activity released from the shield and auxiliary buildup for all sampling periods.

Allowance is made for a plus or minus one sigma counting error associated with the gamma isotopic analyses.

d. Liquid Effluents

(1) Batch - (Radwaste)

Total gamma isotopic activity concentrations are determined on each batch of liquid effluent prior to release. The total curie content of a released batch is determined by summing each nuclide's concentration and multiplying by the total volume discharged. The total activity released during a month is then deterined by summing the activity content of each batch discharged during the month.

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

SUPPLEMENAL INFORMATION (CONTINUED)

SECOND HALF 1982

4. Measurements and Approximations of Total Radioactivity (Continued)

(2) Continuous Releases and Periodic Continuous Releases (Condensate Regenerants, Turbine Building Sump and Steam Generator Building)

Total gamma isotopic activity concentration is determined daily on a composite sample. The total curie content of the continuous release is determined daily by summing each nuclide's concentration and multiplying by the total volume discharged. The total activity released during the month is then determined by summing the activity content of each daily composite for month.

Allowance is made for plus or minus one sigma counting error associated with the total gamma isotopic analyses.

5. Batch

		Value		Units
		Third Quarter	Fourth Quarter	
a.	Liquid (Radwaste)			
(1)	Number of batches released	180	126	Each
(2)	Total time period for batch releases	33,671	22,283	Minutes
(3)	Maximum time period for a batch release	915	632	Minutes
(4)	Average time period for batch release	187	177	Minutes
(5)	Minimum time period for a batch release	72	50	Minutes
(6)	Average stream flow during periods of effluent into a flowing stream:	(a)	(a)	
b.	Gaseous			
(1)	Number of batches released	273	82	Each
(2)	Total time period for batch releases	35,407	19,046	Minutes

(a) See Radiological Hygiene Branch's portion of semi-annual effluent release report.

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

SUPPLEMENAL INFORMATION (CONTINUED)

SECOND HALF 1982

5.	Batch (Continued)			
	b. Gaseous (Continued)			
	(3) Maximum time period for a batch release	1,320	1,500	Minutes
	(4) Average time period for batch releases	130	282	Minutes
	(5) Minimum time period for a batch release	12	37	Minutes
6.	Abnormal Releases			
	a. Liquid			
	(1) Number of Releases	0	0	
	(2) Total Activity Released	0.00E-01	0.00E-01	Ci
	b. Gaseous			
	(1) Number of Releases	0	0	
	(2) Total Activity Released	0.00E-01	0.00E-01	Ci

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

BATCH LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

RADWASTE

SECOND HALF 1982

		Unit	Third Quarter	Total % Error	Fourth Quarter	Total % Error
A.	Fission and Activation Products					
1.	Total Releases	Curies	1.16E+00	±1.0E+01	6.44E+00	±1.0E+01
2.	Average Diluted Conc. During Period of All Identified Isotopes	µCi/ml	4.55E-07		4.07E-06	
3.	Percent of Applicable Limit ($\sum_{i=1}^{2}$ MPC $\leq$ 1)	%	9.20E+00		7.32E+00	
	NOTE: Percent of applicable limit is based on identified isotope concentration after dilution, related to their appropriate MPC concentration and sum of all the isotope fractions compared to 1.0.					
B.	Tritium					
1.	Total Release	Curies	3.44E+02	±1.0E+01	9.28E+01	±1.0E+01
2.	Average Diluted Conc. During Period	µCi/ml	1.35E-04		5.89E-05	
3.	Percent of Applicable Limit (3.0E-03 µCi/ml)	%	4.50E+00		1.96E+00	
C.	Dissolved and Entrained Gases					
1.	Total Release	Curies	9.01E-02	±1.5E+01	1.05E-01	±1.5E+01
2.	Average Diluted Conc. During Period	µCi/ml	3.53E-08		6.66E-08	
3.	Percent of Applicable Limit (2.0E-04 µCi/ml)	%	1.77E-02		3.33E-02	
D.	Gross Alpha Radioactivity					
1.	Total Release	Curies	0.00E-01	±1.5E+01	0.00E-01	±1.5E+01
E.	Volume of Waste Release					
	(Before Dilution)	Liters	9.98E+06	±1.0E+01	6.35E+06	±1.0E+01
F.	Volume of Dilution Water for Period	Liters	2.54E+09	±1.0E+01	1.57E+09	±1.0E+01

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

BATCH LIQUID RELEASES

RADWASTE

SECOND HALF 1982

G. Isotope Summary	Curies	ird rter	Fourth Quarter
1. Strontium-89		.66E-03	6.06E-03
2. Strontium-90		0.00E-01	0.00E-01
3. Cesium-134		1.55E-02	1.74E-03
4. Cesium-137		3.51E-02	5.01E-03
5. Iodine-131		6.35E-02	8.96E-03
6. Cobalt-58		8.26E-01	3.25E+00
7. Cobalt-60		8.54E-02	1.18E+00
8. Iron-59		2.92E-04	3.52E-02
9. Zinc-65		0.00E-01	8.55E-03
10. Manganese-54		2.81E-02	1.01E-01
11. Chromium-51		4.87E-03	2.35E-01
12. Zirconium-Niobium-95		4.29E-04	7.37E-02
13. Molybdenum-99		9.72E-04	0.00E-01
14. Technetium-99m		1.74E-03	3.60E-06
15. Barium-Lanthanum-140		0.00E-01	0.00E-01
16. Cerium-141		0.00E-01	0.00E-01
17. Sodium-24		1.97E-03	9.92E-06
18. Fluorine-18		0.00E-01	0.00E-01
Total for Period		1.07E+00	4.91E+00

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

BATCH LIQUID RELEASES

RADWASTE

SECOND HALF 1982

G. Isotope Summary	Curies	Third Quarter	Fourth Quarter
Others (Not Required for Reg. Guide 1.21)			
1. Xenon-133		3.92E-02	1.05E-01
2. Xenon-135		3.73E-02	2.85E-04
3. Iodine-133		2.89E-03	1.06E-04
4. Cesium-136		5.14E-04	0.00E-01
5. Cobalt-57		7.55E-04	9.90E-03
6. Niobium-97		1.00E-06	8.96E-04
7. Antimony-124		3.52E-03	2.59E-03
8. Iodine-135		2.62E-04	0.00E-01
9. Tungsten-187		2.17E-04	0.00E-01
10. Cerium-144		4.46E-04	0.00E-01
11. Phosphorus-32		3.33E-02	4.15E-02
12. Iron-55		5.08E-02	1.47E+00
13. Argon-41		8.57E-06	9.88E-05
14. Xenon-131m		8.64E-03	0.00E-01
15. Xenon-133m		1.93E-04	0.00E-01
16. Krypton-85		4.35E-03	0.00E-01
17. Krypton-85m		4.47E-04	0.00E-01
18. Strontium-92		0.00E-01	1.16E-03
19. Silver-110m		0.00E-01	9.91E-03
20. Ruthenium-103		0.00E-01	3.13E-04
Total for Period		1.83E-01	1.64E+00

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

BATCH LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

(CONDENSATE REGENERANTS)
(TO TURBINE BUILDING SUMP)

SECOND HALF 1982

		Unit	Third Quarter	Total % Error	Fourth Quarter	Total % Error
A.	Fission and Activation Products					
1.	Total Releases	Curies	0.00E-01	±1.0E+01	0.00E-01	±1.0E+01
2.	Average Diluted Conc. During Period of All Identified Isotopes	µCi/ml	0.00E-01		0.00E-01	
3.	Percent of Applicable Limit ($\sum_{i=1}^{N}$ MPC $\leq$ 1)	%	0.00E-01		0.00E-01	
	NOTE: Percent of applicable limit is based on identified isotope concentration after dilution, related to their appropriate MPC concentration and sum of all the isotope fractions compared to 1.0.					
B.	Tritium					
1.	Total Release	Curies	0.00E-01	±1.0E+01	0.00E-01	1.0E+01
2.	Average Diluted Conc. During Period	µCi/ml	0.00E-01		0.00E-01	
3.	Percent of Applicable Limit (3.0E-03 µCi/ml)	%	0.00E-01		0.00E-01	
C.	Dissolved and Entrained Gases					
1.	Total Release	Curies	0.00E-01	±1.5E+01	0.00E-01	±1.5E+01
2.	Average Diluted Conc. During Period	µCi/ml	0.00E-01		0.00E-01	
3.	Percent of Applicable Limit (2.0E-04 µCi/ml)	%	0.00E-01		0.00E-01	
D.	Gross Alpha Radioactivity					
1.	Total Release	Curies	0.00E-01	±1.5E+01	0.00E-01	±1.5E+01
E.	Volume of Waste Release					
	(No Dilution)	Liters	1.03E+07	±1.0E+01	1.00E+07	±1.0E+01

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

BATCH LIQUID RELEASES

(CONDENSATE REGENERANTS)

SECOND HALF 1982

G. Isotope Summary	Curies	Third Quarter	Fourth Quarter
1. Strontium-89		0.00E-01	0.00E-01
2. Strontium-90		0.00E-01	0.00E-01
3. Cesium-134		0.00E-01	0.00E-01
4. Cesium-137		0.00E-01	0.00E-01
5. Iodine-131		0.00E-01	0.00E-01
6. Cobalt-58		0.00E-01	0.00E-01
7. Cobalt-60		0.00E-01	0.00E-01
8. Iron-59		0.00E-01	0.00E-01
9. Zinc-65		0.00E-01	0.00E-01
10. Manganese-54		0.00E-01	0.00E-01
11. Chromium-51		0.00E-01	0.00E-01
12. Zirconium-Niobium-95		0.00E-01	0.00E-01
13. Molybdenum-99		0.00E-01	0.00E-01
14. Technetium-99m		0.00E-01	0.00E-01
15. Barium-Lanthanum-140		0.00E-01	0.00E-01
16. Cerium-141		0.00E-01	0.00E-01
17. Sodium-24		0.00E-01	0.00E-01
18. Fluorine-18		0.00E-01	0.00E-01
Total for Period		0.00E-01	0.00E-01

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

BATCH LIQUID RELEASES

(CONDENSATE REGENERANTS)

SECOND HALF 1982

G.	Isotope Summary	Curies	Third Quarter	Fourth Quarter
	Others (Not Required for Reg. Guide 1.21)			
	1. Xenon-133		0.00E-01	0.00E-01
	2. Xenon-135		0.00E-01	0.00E-01
	3. Iodine-133		0.00E-01	0.00E-01
	4. Cesium-136		0.00E-01	0.00E-01
	5. Manganese-56		0.00E-01	0.00E-01
	6. Antimony-122		0.00E-01	0.00E-01
	7. Antimony-124		0.00E-01	0.00E-01
	8. Copper-64		0.00E-01	0.00E-01
	9. Arsenic-76		0.00E-01	0.00E-01
	10. Arsenic-74		0.00E-01	0.00E-01
	11. Phosphorus-32		0.00E-01	0.00E-01
	12. Iron-55		0.00E-01	0.00E-01
	Total for Period		0.00E-01	0.00E-01

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

CONTINUOUS LIQUID RELEASES

(TURBINE BUILDING SUMP)

SECOND HALF 1982

		Unit	Third Quarter	Total % Error	Fourth Quarter	Total % Error
A.	Fission and Activation Products					
1.	Total Releases	Curies	0.00E-01	±1.0E+01	0.00E-01	±1.0E+01
2.	Average Diluted Conc. During Period of All Identified Isotopes	µCi/ml	0.00E-01		0.00E-01	
3.	Percent of Applicable Limit ($\sum_{i=1}^{N}$ MPC ≤ 1)	%	0.00E-01		0.00E-01	
	NOTE: Percent of applicable limit is based on identified isotope concentration after dilution, related to their appropriate MPC concentration and sum of all the isotope fractions compared to 1.0.					
B.	Tritium					
1.	Total Release	Curies	0.00E-01	±1.0E+01	0.00E-01	1.0E+01
2.	Average Diluted Conc. During Period	µCi/ml	0.00E-01		0.00E-01	
3.	Percent of Applicable Limit (3.0E-03 µCi/ml)	%	0.00E-01		0.00E-01	
C.	Dissolved and Entrained Gases					
1.	Total Release	Curies	0.00E-01	±1.5E+01	0.00E-01	±1.5E+01
2.	Average Diluted Conc. During Period	µCi/ml	0.00E-01		0.00E-01	
3.	Percent of Applicable Limit (2.0E-04 µCi/ml)	%	0.00E-01		0.00E-01	
D.	Gross Alpha Radioactivity					
1.	Total Release	Curies	0.00E-01	±1.5E+01	0.00E-01	±1.5E+01
E.	Volume of Waste Release					
	(No Dilution)	Liters	2.35E+08	±1.0E+01	4.23E+08	±1.0E+01

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

CONTINUOUS LIQUID RELEASES

(TURBINE BUILDING SUMP)

SECOND HALF 1982

G.	Isotope Summary	Curies	Third Quarter	Fourth Quarter
1.	Strontium-89		0.00E-01	0.00E-01
2.	Strontium-90		0.00E-01	0.00E-01
3.	Cesium-134		0.00E-01	0.00E-01
4.	Cesium-137		0.00E-01	0.00E-01
5.	Iodine-131		0.00E-01	0.00E-01
6.	Cobalt-58		0.00E-01	0.00E-01
7.	Cobalt-60		0.00E-01	0.00E-01
8.	Iron-59		0.00E-01	0.00E-01
9.	Zinc-65		0.00E-01	0.00E-01
10.	Manganese-54		0.00E-01	0.00E-01
11.	Chromium-51		0.00E-01	0.00E-01
12.	Zirconium-Niobium-95		0.00E-01	0.00E-01
13.	Molybdenum-99		0.00E-01	0.00E-01
14.	Technetium-99m		0.00E-01	0.00E-01
15.	Barium-Lanthanum-140		0.00E-01	0.00E-01
16.	Cerium-141		0.00E-01	0.00E-01
17.	Sodium-24		0.00E-01	0.00E-0
18.	Fluorine-18		0.00E-01	0.00E-01
	Total for Period		0.00E-01	0.00E-01

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

CONTINUOUS LIQUID RELEASES

(TURBINE BUILDING SUMP)

SECOND HALF 1982

G. Isotope Summary	Curies	Third Quarter	Fourth Quarter
Others (Not Required for Reg. Guide 1.21)			
1. Xenon-133		0.00E-01	0.00E-01
2. Xenon-135		0.00E-01	0.00E-01
3. Iodine-133		0.00E-01	0.00E-01
4. Cesium-136		0.00E-01	0.00E-01
5. Manganese-56		0.00E-01	0.00E-01
6. Antimony-122		0.00E-01	0.00E-01
7. Antimony-124		0.00E-01	0.00E-01
8. Copper-64		0.00E-01	0.00E-01
9. Arsenic-76		0.00E-01	0.00E-01
10. Arsenic-74		0.00E-01	0.00E-01
11. Phosphorus-32		0.00E-01	0.00E-01
12. Iron-55		0.00E-01	0.00E-01
Total for Period		0.00E-01	0.00E-01

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

BATCH LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

(STEAM GENERATOR BLOWDOWN)

SECOND HALF 1982

		Unit	Third Quarter	Total % Error	Fourth Quarter	Total % Error
A.	Fission and Activation Products					
1.	Total Releases	Curies	0.00E-01	±1.0E+01	0.00E-01	±1.0E+01
2.	Average Diluted Conc. During Period of All Identified Isotopes	µCi/ml	0.00E-01		0.00E-01	
3.	Percent of Applicable Limit ($\sum_{i=1}^{N}$ MPC ≤ 1)	%	0.00E-01		0.00E-01	
	NOTE: Percent of applicable limit is based on identified isotope concentration after dilution, related to their appropriate MPC concentration and sum of all the isotope fractions compared to 1.0.					
B.	Tritium					
1.	Total Release	Curies	0.00E-01	±1.0E+01	0.00E-01	1.0E+01
2.	Average Diluted Conc. During Period	µCi/ml	0.00E-01		0.00E-01	
3.	Percent of Applicable Limit (3.0E-03 µCi/ml)	%	0.00E-01		0.00E-01	
C.	Dissolved and Entrained Gases					
1.	Total Release	Curies	0.00E-01	±1.5E+01	0.00E-01	±1.5E+01
2.	Average Diluted Conc. During Period	µCi/ml	0.00E-01		0.00E-01	
3.	Percent of Applicable Limit (2.0E-04 µCi/ml)	%	0.00E-01		0.00E-01	
D.	Gross Alpha Radioactivity					
1.	Total Release	Curies	0.00E-01	±1.5E+01	0.00E-01	±1.5E+01
E.	Volume of Waste Release					
	(Before Dilution)	Liters	1.76E+06	±1.0E+01	2.73E+05	±1.0E+01
F.	Volume of Dilution Water for Period	Liters	5.85E+07	±1.0E+01	2.04E+06	±1.0E+01

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

BATCH LIQUID RELEASES

(STEAM GENERATOR BLOWDOWN)

SECOND HALF 1982

G.	Isotope Summary	Curies	Third Quarter	Fourth Quarter
1.	Strontium-89		0.00E-01	0.00E-01
2.	Strontium-90		0.00E-01	0.00E-01
3.	Cesium-134		0.00E-01	0.00E-01
4.	Cesium-137		0.00E-01	0.00E-01
5.	Iodine-131		0.00E-01	0.00E-01
6.	Cobalt-58		0.00E-01	0.00E-01
7.	Cobalt-60		0.00E-01	0.00E-01
8.	Iron-59		0.00E-01	0.00E-01
9.	Zinc-65		0.00E-01	0.00E-01
10.	Manganese-54		0.00E-01	0.00E-01
11.	Chromium-51		0.00E-01	0.00E-01
12.	Zirconium-Niobium-95		0.00E-01	0.00E-01
13.	Molybdenum-99		0.00E-01	0.00E-01
14.	Technetium-99m		0.00E-01	0.00E-01
15.	Barium-Lanthanum-140		0.00E-01	0.00E-01
16.	Cerium-141		0.00E-01	0.00E-01
17.	Sodium-24		0.00E-01	0.00E-01
18.	Fluorine-18		0.00E-01	0.00E-01
	Total for Period		0.00E-01	0.00E-01

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

BATCH LIQUID RELEASES

(STEAM GENERATOR BLOWDOWN)

SECOND HALF 1982

G.	Isotope Summary	Curies	Third Quarter	Fourth Quarter
	Others (Not Required for Reg. Guide 1.21)			
	1. Xenon-133		0.00E-01	0.00E-01
	2. Xenon-135		0.00E-01	0.00E-01
	3. Iodine-133		0.00E-01	0.00E-01
	4. Cesium-136		0.00E-01	0.00E-01
	5. Manganese-56		0.00E-01	0.00E-01
	6. Antimony-122		0.00E-01	0.00E-01
	7. Antimony-124		0.00E-01	0.00E-01
	8. Copper-64		0.00E-01	0.00E-01
	9. Arsenic-76		0.00E-01	0.00E-01
	10. Arsenic-74		0.00E-01	0.00E-01
	11. Phosphorus-32		0.00E-01	0.00E-01
	12. Iron-55		0.00E-01	0.00E-01
	Total for Period		0.00E-01	0.00E-01

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

(GROUND LEVEL RELEASES)

SECOND HALF 1982

Summation of All Releases		Unit	Third Quarter	Total % Error	Fourth Quarter	Total % Error
A.	Fission and Activation Products					
1.	Total Releases	Ci	2.69E+03	±1.0E+01	5.01E+02	±1.0E+01
2.	Average Release Rate for Period	µCi/ml	3.38E+02		6.30E+01	
3.	Percent of Technical Specification Limit	%	1.34E-01		1.44E-02	
B.	Iodines					
1.	Total Iodine-131	Ci	2.32E-04	±1.0E+01	7.31E-04	±1.0E+01
2.	Average Release Rate for Period	µCi/sec	2.92E-05		9.20E-05	
3.	Percent of Technical Specification Limit (7.80E-02 µCi/sec)	%	3.74E-02		1.18E-01	
C.	Particulates					
1.	Particulates with half-lives >8 Days	Ci	9.00E-06	±1.5E+01	6.59E-03	±1.5E+01
2.	Average Release Rate for Period	µCi/ml	1.13E-06		8.29E-04	
3.	Percent of Technical Specification Limit	%	3.21E-06		1.89E-03	
4.	Gross Alpha Radioactivity	Ci	0.00E-01		0.00E-01	
D.	Tritium					
1.	Total Release	Ci	9.81E+01	±1.0E+01	7.47E+01	±1.0E+01
2.	Average Release Rate for Period	µCi/sec	1.23E+01		9.40E+00	
3.	Percent of Technical Specification Limit (3.60E+04 µCi/sec)	%	3.42E-02		2.61E-02	

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

GASEOUS EFFLUENTS GROUND LEVEL RELEASE

SECOND HALF 1982

		Unit	Third Quarter	Fourth Quarter
1.	Fission Gases			
	Krypton-85	Ci	6.16E-02	5.70E-01
	Krypton-85m	Ci	8.80E+00	5.17E-03
	Krypton-87	Ci	2.84E-03	0.00E-01
	Krypton-88	Ci	8.32E-03	0.00E-01
	Xenon-133	Ci	2.51E+03	4.74E+02
	Xenon-135	Ci	1.23E+02	1.00E+01
	Xenon-135m	Ci	0.00E-01	0.00E-01
	Xenon-138	Ci	0.00E-01	0.00E-01
	Others (Specify) Xenon-131m	Ci	5.32E-01	1.07E+01
	Xenon-133m	Ci	4.46E+01	4.51E+00
	Argon-41	Ci	1.84E+00	9.91E-01
	Total for Period		2.69E+03	5.01E+02
2.	Iodines			
	Iodine-131	Ci	2.32E-04	7.31E-04
	Iodine-133	Ci	1.11E-06	2.45E-04
	Iodine-135	Ci	0.00E-01	0.00E-01
	Total for Period		2.33E-04	9.76E-04

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

GASEOUS EFFLUENTS GROUND LEVEL RELEASE

SECOND HALF 1982

3. Particulates	Unit	Third Quarter	Fourth Quarter
Strontium-89	Ci	2.49E-07	4.19E-08
Strontium-90	Ci	0.00E-01	0.00E-01
Cesium-134	Ci	0.00E-01	3.15E-06
Cesium-137	Ci	0.00E-01	6.24E-06
Barium-140	Ci	0.00E-01	0.00E-01
Zirconium-95	Ci	0.00E-01	0.00E-01
Niobium-95	Ci	0.00E-01	0.00E-01
Cobalt-58	Ci	0.00E-01	6.54E-03
Manganese-54	Ci	0.00E-01	1.31E-05
Zinc-65	Ci	0.00E-01	0.00E-01
Iron-59	Ci	0.00E-01	0.00E-01
Cobalt-60	Ci	0.00E-01	2.65E-05
Others (Specify) Cobalt-57	Ci	8.75E-06	0.00E-01
Lanthanum-140	Ci	0.00E-01	0.00E-01
Total for Period	Ci	9.00E-06	6.59E-03

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

SOLID WASTE (RADIOACTIVE) SHIPMENTS

SECOND HALF 1982

A. Solid Waste Shipped Off-Site for Burial or Disposal (Not Irradiated Fuel)

1. Type of Waste	Unit	Third Quarter	Fourth Quarter
a. Spent resins, filter sludges, evaporator bottoms, etc.	m^3	1.934E+01	1.359E+01
	Ci	6.850E+01	2.930E+01
b. Contaminated equip., etc.	m^3	N/A	N/A
c. Irradiated Components, Control Rods, etc.	m^3	N/A	N/A
d. Other (Describe) Boxes and Drums	m^3	9.728E+01	1.389E+02
	Ci	6.220E+00	1.040E+02

2. Estimate of Major Nuclide Composition (by Type of Waste)

a. Spent resins, filter sludges, and evaporator bottoms

	Unit Ci		Unit %	
	Third Quarter	Fourth Quarter	Third Quarter	Fourth Quarter
a. 1. Chromium-51	7.869E-01	9.995E-02	1.149E+00	3.412E-01
2. Manganese-54	1.762E+01	1.017E+00	2.572E+01	3.472E+00
3. Cobalt-58	2.472E+01	2.208E+01	3.609E+01	7.537E+01
4. Iron-59	3.017E-01	1.139E-01	4.404E-01	3.888E-01
5. Cobalt-60	1.946E+01	4.938E+00	2.841E+01	1.686E+01
6. Strontium-90	0.000E-01	0.000E-01	0.000E-01	0.000E-01
7. Zirconium-95	4.285E-02	9.970E-03	6.255E-02	3.403E-02
8. Niobium-95	1.419E-01	2.574E-01	2.071E-01	8.786E-01
9. Iodine-131	1.792E-01	1.879E-01	2.616E-01	6.414E-01
10. Cesium-134	1.104E+00	1.677E-01	1.612E+00	5.725E-01
11. Cesium-137	4.090E+00	2.642E-01	5.971E+00	9.019E-01
12. Other Nuclides	5.525E-02	1.612E-01	8.065E-02	5.503E-01
b. Contaminated Equip	N/A	N/A	N/A	N/A
c. Irradiated Components	N/A	N/A	N/A	N/A

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

SOLID WASTE (RADIOACTIVE) SHIPMENTS

SECOND HALF 1982

2. Estimate of Major Nuclide Composition (by Type of Waste) (Cont.)

d. Other (Drums and Boxes)

		Unit Ci		Unit %	
		Third Quarter	Fourth Quarter	Third Quarter	Fourth Quarter
1.	Chromium-51	2.240E-02	5.912E-01	3.601E-01	5.634E-01
2.	Manganese-54	1.188E+00	3.209E+00	1.910E+01	3.085E+00
3.	Cobalt-58	1.985E+00	7.657E+01	3.101E+01	7.378E+01
4.	Iron-59	1.032E-02	1.351E-01	1.659E-01	1.299E-01
5.	Cobalt-60	2.924E+00	1.907E+01	4.701E+01	1.833E+01
6.	Strontium-90	0.000E-01	0.000E-01	0.000E-01	0.000E-01
7.	Zirconium-95	0.000E-01	0.000E-01	0.000E-01	0.000E-01
8.	Niobium-95	8.155E-03	2.147E-01	1.311E-01	2.064E-01
9.	Iodine-131	9.354E-03	7.911E-01	1.504E-01	7.606E-01
10.	Cesium-134	1.213E-02	1.232E+00	1.950E-01	1.185E+00
11.	Cesium-137	6.111E-02	1.951E+00	9.824E-01	1.876E+00
12.	Other Nuclides	0.000E-01	7.632E-02	0.000E-01	7.337E-02

3. Solid Waste Disposition

Number of Shipments		Mode of Transportation	Destination
Third Quarter	Fourth Quarter		
6	3	Motor Vehicle	Chem. Nuclear, Barnwell, SC
2	4	Motor Vehicle	U.S. Ecology, Richland, WA

B. Irradiated Fuel Shipments (Disposition)

Number of Shipments		Mode of Transportation	Destination
Third Quarter	Fourth Quarter		
None	None	N/A	N/A