

TABLE 1A

## EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

## GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

	Unit	Quarter 1st	Quarter 2nd	Est. Total Error, %
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## A. Fission &amp; activation gases

1. Total release	Ci	7.06E-1	1.96E+2	2.0E+1
2. Average release rate for period	$\mu$ Ci/sec	8.96E-2	2.49E+1	
3. Percent of technical specification limit	%	N/A	N/A	

## B. Iodines

1. Total iodine-131	Ci	3.93E-3	4.43E-2	1.5E+1
2. Average release rate for period	$\mu$ Ci/sec	4.99E-4	5.62E-3	
3. Percent of technical specification limit	%	1.97E-1	2.22E+0	

## C. Particulates

1. Particulates with half-lives >8 days	Ci	5.28E-5	1.78E-3	2.0E+1
2. Average release rate for period	$\mu$ Ci/sec	6.70E-6	2.26E-4	
3. Percent of technical specification limit	%	N/A	N/A	
4. Gross alpha radioactivity	Ci	1.09E-6	5.15E-7	

## D. Tritium \*

1. Total release	Ci	4.38E-3	4.64E-2	1.5E+1
2. Average release rate for period	$\mu$ Ci/sec	5.56E-4	5.89E-3	
3. Percent of technical specification limit	%	N/A	N/A	

N/A = Not Applicable

The amount of time (in seconds) used to calculate the release rates specified in A.2, B.2, C.2 and D.2 is the average amount of seconds per calendar quarter (7.88E+6 seconds).

B.3 is based on a limit of 2 Ci/quarter.

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TABLE 1B

## EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

## GASEOUS EFFLUENTS - ELEVATED RELEASE

CONTINUOUS MODE				BATCH MODE	
Nuclides Released	Unit	Quarter	Quarter	Quarter	Quarter
1. Fission gases					
		1st	2nd	1st	2nd
krypton-85	Ci	6.57E-4	4.84E-4	5.96E-1	3.73E+0
krypton-85m	Ci	LLD	LLD	LLD	LLD
krypton-87	Ci	LLD	LLD	LLD	LLD
krypton-88	Ci	LLD	LLD	LLD	LLD
xenon-133	Ci	2.16E-3	2.05E-3	6.73E-2	8.49E-3
xenon-135	Ci	8.15E-5	1.24E-4	LLD	LLD
xenon-135m	Ci	5.52E-6	4.83E-5	LLD	LLD
xenon-138	Ci	LLD		LLD	LLD
xenon-131m	Ci	LLD	3.04E-6	8.17E-3	LLD
xenon-133m	Ci	1.30E-6	LLD	LLD	LLD
	Ci				
unidentified	Ci	NONE	NONE	NONE	NONE
Total for period	Ci	2.91E-3	2.71E-3	6.71E-1	3.74E+0

## 2. Iodines

iodine-131	Ci	3.52E-5	2.25E-4	LLD	LLD
iodine-133	Ci	2.48E-6	1.78E-5	LLD	LLD
iodine-135	Ci	LLD	LLD	LLD	LLD
Total for period	Ci	3.77E-5	2.43E-4	---	---

## 3. Particulates

strontium-89	Ci	LLD	LLD	LLD	LLD
strontium-90	Ci	2.01E-8	1.87E-7	LLD	LLD
cesium-134	Ci	LLD	2.68E-7	LLD	LLD
cesium-137	Ci	LLD	4.17E-7	LLD	LLD
barium -lanthanum-140	Ci	LLD	LLD	LLD	LLD
manganese - 54	Ci	9.50E-7	LLD	LLD	LLD
cobalt - 58	Ci	LLD	1.24E-7	LLD	LLD
cobalt - 60	Ci	3.88E-5	2.94E-6	LLD	LLD
unidentified	Ci	NONE	NONE	NONE	NONE

LLD = Below the Lower Limit of Detectability, in uCi/cc (Table 4).

TABLE 1C

## EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT

## GASEOUS EFFLUENTS - GROUND-LEVEL RELEASES

CONTINUOUS MODE

BATCH MODE

Nuclides Released	Unit	Quarter	Quarter	Quarter	Quarter
1. Fission gases		No Releases			
		1st	2nd	1st	2nd
krypton-85	Ci	2.72E-2	4.57E-2		6.53E+0
krypton-85m	Ci	LLD	LLD		LLD
krypton-87	Ci	LLD	LLD		LLD
krypton-88	Ci	LLD	LLD		LLD
* xenon-133	Ci	4.29E-3	3.80E+0		1.76E+2
xenon-135	Ci	2.24E-4	LLD		7.45E-1
xenon-135m	Ci	LLD	1.83E-4		LLD
xenon-138	Ci	LLD	LLD		LLD
xenon-131m	Ci	LLD	LLD		4.27E+0
xenon-133m	Ci	LLD	LLD		7.24E-1
	Ci				
unidentified	Ci	NONE	NONE		NONE
Total for period	Ci	3.17E-2	3.85E+0		1.88E+2

## 2. Iodines

iodine-131	Ci	3.74E-3	1.42E-2		2.89E-2
iodine-133	Ci	1.49E-4	4.81E-4		4.51E-4
iodine-135	Ci	LLD	LLD		LLD
Total for period	Ci	3.89E-3	1.47E-2		2.94E-2

## 3. Particulates

strontium-89	Ci	8.55E-6	3.43E-7		LLD
strontium-90	Ci	2.44E-6	LLD		LLD
cesium-134	Ci	LLD	7.28E-5		LLD
cesium-137	Ci	LLD	1.11E-4		LLD
barium-lanthanum-140	Ci	LLD	LLD		LLD
cerium - 141	Ci	2.00E-6	LLD		LLD
manganese - 54	Ci	LLD	1.53E-3		LLD
cobalt - 58	Ci	LLD	5.85E-5		LLD
unidentified	Ci	NONE	NONE		NONE

LLD = Below the Lower Limit of Detectability, in uCi/cc (Table 4).

\* The value listed for the second quarter continuous mode (3.80E0 Curies) includes an abnormal release of 3.79 E0 Curies as stated on the Supplemental Information Page.

TABLE 2A

## EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

## LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

Unit	Quarter	Quarter	Est. Total Error, %
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## A. Fission &amp; activation products

		1st	2nd	
1. Total release (not including tritium, gases, alpha)	Ci	5.39E-3	1.55E-2	2.0E+1
2. Average diluted concentration during period	$\mu$ Ci/ml	6.01E-9	8.86E-8	
3. Percent of applicable limit	%	5.39E-2	1.55E-1	

## B. Tritium

1. Total release	Ci	1.36E+2	1.66E+2	1.5E+1
2. Average diluted concentration during period	$\mu$ Ci/ml	1.52E-4	9.49E-4	
3. Percent of applicable limit	%	5.07E+0	3.16E+1	

## C. Dissolved and entrained gases

1. Total release	Ci	5.00E-2	2.27E-1	2.7E+1
2. Average diluted concentration during period	$\mu$ Ci/ml	5.57E-8	1.30E-6	
3. Percent of applicable limit	%	N/A	N/A	

## D. Gross alpha radioactivity

1. Total release	Ci	LLD	LLD	2.9E+1
E. Volume of waste released (prior to dilution)	liters	7.58E+5	1.26E+6	5.0E+0
F. Volume of dilution water used during period	liters	8.97E+8	1.75E+8	1.0E+1

LLD = Below the Lower Limit of Detectability, in  $\mu$ Ci/cc (Table 4).

N/A = Not Applicable

A.3 is based on a limit of 10 Ci/quarter.

B.3 is based on a limit of  $3.00E-3$   $\mu$ Ci/ml.



## EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

## LIQUID EFFLUENTS

Nuclides Released	Unit	CONTINUOUS MODE		BATCH MODE	
		Quarter 1st	Quarter 2nd	Quarter 1st	Quarter 2nd
strontium-89	Ci	N/A	N/A	1.86E-6	3.90E-6
strontium-90	Ci			LLD	3.06E-6
cesium-134	Ci			3.33E-4	2.86E-3
cesium-137	Ci			4.33E-4	3.34E-3
iodine-131	Ci	↓	↓	1.67E-3	1.56E-3
cobalt-58	Ci			1.32E-4	1.24E-3
cobalt-60	Ci			2.01E-3	2.38E-3
iron-59	Ci			LLD	LLD
zinc-65	Ci			LLD	LLD
manganese-54	Ci			5.19E-5	6.23E-6
chromium-51	Ci	↓	↓	LLD	2.82E-5
zirconium-niobium-95	Ci			4.90E-7	LLD
molybdenum-99	Ci			LLD	2.65E-5
technetium-99M	Ci			1.31E-4	3.33E-3
barium-lanthanum-140	Ci			5.85E-6	6.72E-5
cerium-141	Ci	↓	↓	LLD	3.18E-5
Other (specify) iodine - 133	Ci			4.37E-4	5.72E-4
iodine - 134	Ci			1.62E-6	LLD
cobalt - 57	Ci			2.06E-6	LLD
niobium - 97	Ci			1.76E-4	9.95E-5
silver - 110m	Ci			LLD	8.00E-7
unidentified	Ci	↓	↓	NONE	NONE
Total for period (above)	Ci	↓	↓	5.39E-3	1.55E-2
xenon-133	Ci	↓	↓	3.39E-2	1.87E-1
xenon-135	Ci	↓	↓	8.81E-3	3.19E-2

LLD = Below the Lower Limit of Detectability in uCi/cc (Table 4).

N/A = Not Applicable (Liquids not discharged in a continuous mode).