

ID/13B

EFFLUENT AND WASTE DISPOSAL
SEMI-ANNUAL REPORT JAN. - JUNE, 1984
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

QCP 100-S25
Revision 1
May 1983

	Unit	Quarter First	Quarter Second	Est. Total Error, %
--	------	------------------	-------------------	------------------------

A. FISSION & ACTIVATION GASES

1. Total Release	Ci	4.79E3	2.79E2	
2. Average release rate for period	$\mu\text{Ci}/\text{sec}$	6.09E2	3.55E1	
3. a. Percent of Tech Spec limit Chimney	%	1.25E-1	8.6E-3	
b. Percent of Tech Spec limit Stack	%	6.9E-1	1.1E-2	

B. IODINES

1. Total Iodine-131	Ci	2.88E-2	3.05E-3	
2. Average release rate for period	$\mu\text{Ci}/\text{sec}$	3.66E-3	3.88E-4	
3. a. Percent of Tech Spec limit station.	%	1.9E-1	8.0E-2	

C. PARTICULATES

1. Particulates with half-lives > 8 days	Ci	1.52E-2	7.37E-3	
2. Average release rate for period	$\mu\text{Ci}/\text{sec}$	1.93E-3	9.37E-4	
3. Gross alpha radioactivity	.	9.05E-7	3.58E-6	

D. TRITIUM

1. Total Release	Ci	7.82	2.76	
2. Average release rate for period	$\mu\text{Ci}/\text{sec}$	1.0	3.5E-1	

NOTE: Sr-89 and Sr-90 activities used for June where the average of January - May values.

APPROVED

JUN 03 1983

Q.C.O.S.R.

GASEOUS EFFLUENTS - ELEVATED RELEASE

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter First	Quarter Second	Quarter	Quarter

1. Fission gases

Kr-85	Ci	<LLD	<LLD		
Kr-85m	Ci	5.53E2	9.52E0		
Kr-87	Ci	1.23E2	1.73E1		
Kr-88	Ci	8.15E2	8.65E0		
Xe-133	Ci	1.77E3	3.46E1		
Xe-135	Ci	1.66E2	5.73E1		
Xe-135m	Ci	4.58E1	3.71E1		
Xe-138	Ci	1.63E2	9.87E1		
	Ci				
	Ci				
	Ci				
Unidentified	Ci	<LLD	<LLD		
Total for Period	Ci	3.64E3	2.63E2		

2. Iodines

I-131	Ci	2.62E-2	2.31E-3		
I-133	Ci	8.97E-2	1.27E-2		
I-135	Ci	1.19E-1	1.37E-2		
Total for Period	Ci	2.35E-1	2.87E-2		

APPROVED
JUN 03 1983
Q.C.C.S.R.

GASEOUS EFFLUENTS - ELEVATED RELEASE

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter First	Quarter Second	Quarter	Quarter

3. Particulates

Sr-89	Ci	1.29E-3	5.86E-4		
Sr-90	Ci	1.3E-4	7.49E-5		
Cs-134	Ci	<LLD	3.54E-5		
Cs-137	Ci	1.62E-4	3.61E-4		
Ba-140	Ci	5.23E-3	3.43E-3		
La-140	Ci	Less than 8 day half life	---	---	
Cr-51	Ci	1.86E-4	<LLD		
Mn-54	Ci	<LLD	<LLD		
Co-58	Ci	<LLD	<LLD		
Co-60	Ci	4.52E-4	5.21E-4		
I-131	Ci	3.69E-3	2.47E-4		
Ag-110m	Ci	<LLD	<LLD		
Ce-141	Ci	2.86E-5	<LLD		
Ru-103	Ci	5.30E-5	<LLD		
Sb-124	Ci	1.06E-5	<LLD		
	Ci				
	Ci				
Unidentified	Ci	<LLD	<LLD		

APPROVED
JUN 08 1953
Q.C.O.S.H.

GASEOUS EFFLUENTS - GROUND RELEASE

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter First	Quarter Second	Quarter	Quarter
1. Fission Gases					
Kr-85	Ci	LLD	LLD		
Kr-85m	Ci	LLD	LLD		
Kr-87	Ci	LLD	LLD		
Kr-88	Ci	LLD	LLD		
Xe-133	Ci	6.94E2	4.70E0		
Xe-135	Ci	4.51E2	1.15E1		
Xe-135m	Ci	LLD	LLD		
Xe-138	Ci	LLD	LLD		
	Ci				
Unidentified	Ci	LLD.	LLD		
Total for Period	Ci	1.15E3	1.62E1		

2. Iodines

I-131	Ci	2.54E-3	7.37E-4		
I-133	Ci	2.80E-3	3.58E-3		
I-135	Ci	1.01E-3	3.03E-3		
Total for Period	Ci	6.35E-3	7.35E-3		

APPROVED

JUN 03 1983

J. C. O. S. V.

GASEOUS EFFLUENTS - GROUND RELEASE

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter First	Quarter Second	Quarter	Quarter
3. Particulates					
Sr-89	Ci	4.56E-5	2.51E-5		
Sr-90	Ci	9.26E-6	6.80E-6		
Cs-134	Ci	4.44E-5	1.82E-5		
Cs-137	Ci	3.70E-4	1.37E-4		
Ba-140	Ci	<LLD	9.20E-5		
La-140	Ci	Less than 8-day half life	---	---	
Cr-51	Ci	4.48E-5	1.52E-4		
Mn-54	Ci	9.59E-5	5.90E-5		
Co-58	Ci	5.69E-6	<LLD		
Co-60	Ci	3.05E-3	1.60E-3		
I-131	Ci	1.81E-4	<LLD		
Ag-110m	Ci	8.13E-6	7.79E-6		
Zn-65	Ci	4.98E-5	1.64E-5		
Ru-103	Ci	1.57E-5	<LLD		
	Ci				
	Ci				
	Ci				
Unidentified	Ci	<LLD	<LLD		

APPROVED
JUN 03 1993
Q.C.O.S.R.

LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

	Unit	Quarter First	Quarter Second	Est. Total Error, %
--	------	------------------	-------------------	------------------------

A. FISSION AND ACTIVATION PRODUCTS

1. Total release (not including tritium, gases, alpha)	Ci	2.78E-2	2.27E-2	
2. Average diluted concentration during period	µCi/ml	3.39E-8	2.14E-9	
3. Percent of applicable limit	%	2.2E-1	1.19E-2	
4. Maximum diluted concentration during period	µCi/ml	4.82E-7	1.1E-7	

B. TRITIUM

1. Total release	Ci	2.65	1.76	
2. Average diluted concentration during period	µCi/ml	3.24E-6	1.66E-7	
3. Percent of applicable limit	%	1.1E-1	5.5E-3	

C. DISSOLVED AND ENTRAINED GASES

1. Total release	Ci	7.58E-2	6.20E-3	
2. Average diluted concentration during period	µCi/ml	9.26E-8	5.85E-10	
3. Percent of applicable limit	%	2.31E-1	1.46E-3	

D. GROSS ALPHA RADIOACTIVITY

1. Total release	Ci	2.13E-6	1.42E-5	
2. Average concentration released	µCi/ml	2.60E-12	1.34E-12	

E. VOLUME OF WASTE RELEASED (prior to dilution)	Liters	2.48E6	1.70E6	
-------------------------------------------------	--------	--------	--------	--

F. VOLUME OF DILUTION WATER USED DURING PERIOD	Liters	8.19E8	1.06E10	
------------------------------------------------	--------	--------	---------	--

APPROVED
JUN 0 3 1968
J.C.O.S.R.

LIQUID EFFLUENTS

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter First	Quarter Second	Quarter	Quarter
Sr-89	Ci	1.1E-4	2.05E-4		
Sr-90	Ci	1.2E-5	8.60E-5		
Cs-134	Ci	4.42E-4	1.62E-4		
Cs-137	Ci	2.99E-3	1.55E-3		
I-131	Ci	1.95E-3	2.01E-4		
Co-58	Ci	1.42E-4	2.60E-4		
Co-60	Ci	1.64E-2	1.52E-2		
Fe-59	Ci	<LLD	8.20E-5		
Zn-65	Ci	2.18E-4	1.35E-4		
Mn-54	Ci	4.06E-4	5.50E-4		
Cr-51	Ci	3.87E-3	6.33E-4		
Zr-95	Ci	<LLD	1.3E-3		
Nb-95	Ci	<LLD	1.2E-3		
Mo-99	Ci	<LLD	<LLD		
Ag-110m	Ci	1.91E-4	2.2E-4		
Ba-140	Ci	8.6E-5	<LLD		
Cs-136	Ci	<LLD	<LLD		
Ce-141	Ci	8.6E-5	1.3E-4		
Sb-124		7.9E-5	1.2E-5		
Sb-125	Ci	8.1E-4	<LLD		
Ce-144		<LLD	5.0E-4		
Ru-103	Ci	2.0E-5	3.2E-4		
Total for Period (above)	Ci	2.78E-2	2.27E-2		
Xe-133m		1.00E-3	<LLD		
Xe-133	Ci	5.60E-2	2.86E-3		
Xe-135	Ci	1.88E-2	3.34E-3		

Prepared by

Paul A. Behrens

Approved by

Ronny J. Kovach
Rad-Chem Supervisor

APPROVED

JUN 03 1983

Q.C.O.S.R.