



SEMIANNUAL EFFLUENT REPORT

FOR THE PERIOD

JANUARY 1, 1996 THROUGH JUNE 30, 1996

BY LAURA QUINTANA
August 28, 1996

August 28, 1996

Semiannual Effluent Report Information

In accordance with 10 CFR 70.59, GA has prepared the semiannual effluent report for the period January 1, 1996 through June 30, 1996.

Table 1 lists data on the radiological gaseous and particulate effluent released to unrestricted areas from our facilities handling radioactive material. The release point descriptions are keyed to the facility names whose relative locations are shown on Fig. 1, a plan view of the site. Table 2 shows the radiological liquid effluent which is released into a 100 million gallon/day regional sewerage treatment plant. Table 3 contains the nonradiological effluent data taken from our air particulate and HCl sampling points.

Attachments A and B provide backup information. Attachment A provides detailed information concerning TRIGA Ar-41 releases, Kr-85 and Xe-133 releases, and stack sample results over this reporting period.

Attachment B provides the calculation worksheet for releases into the sanitary sewerage system (Table 2 provides the summary information).

Figure 1

View of Site

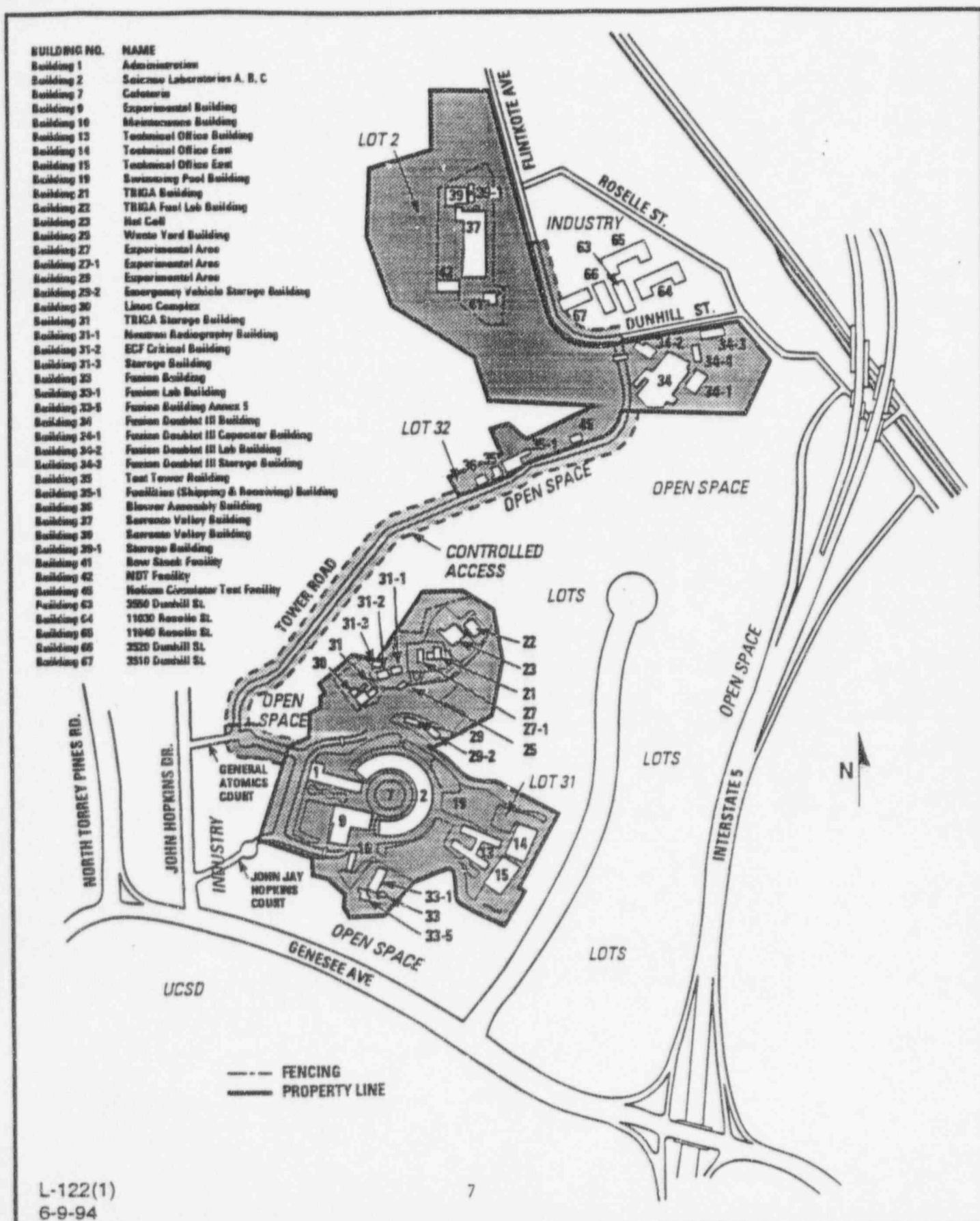


Table 1
Gas and Particulate Effluents
January 1, 1996-June 30, 1996

Release Point (ID)	Effluent	Flow Rate (ft/min)	Stack Area (ft ²)	m ³ /min ⁽⁴⁾	Average pCi/m ³	Total Ci Released ⁽³⁾
SVB (Building 39)						
FB1	U-235 (various enrichments), depleted U	3120	9	796.7	0.005 ⁽¹⁾	1.04e-06
FB2	U-235 (various enrichments), depleted U	2540	9	647.3	0.007 ⁽¹⁾	1.19e-06
FB3	U-235 (various enrichments), depleted U	2620	9	667.7	0.005 ⁽¹⁾	8.75e-07
FB4	U-235 (various enrichments), depleted U	350	0.06	0.59	0.019 ⁽¹⁾	2.94e-09
					Total	3.11e-06
TRIGA Fuel Fabrication Facility (Building 22)						
TFL 1	U-235 (~20% enriched)	1089	6.875	211.9	0.002 ⁽¹⁾	1.11e-07
TFL V	U-235 (~20% enriched)	1200	5.812	197.4	0.003 ⁽¹⁾	1.55e-07
					Total	2.66e-07
Hot Cell Facility (Building 23)						
HCS	Mixed Fission Products (MFP)	4120	3.14	366.3	0.057 ⁽¹⁾	5.47e-06
HCS	Iodines	4120	3.14	366.3	0.042 ⁽¹⁾	4.03e-06
Experimental Area (Building 27)						
27-1	MFP/MAP	1710	1.2	58.1	0.003 ⁽¹⁾	4.57e-08
27-2	MFP/MAP	1660	1.4	65.8	0.001 ⁽¹⁾	1.72e-08

Table 1
Gas and Particulate Effluents
January 1, 1996-June 30, 1996

Table 1 Gas and Particulate Effluents January 1, 1996-June 30, 1996						
Release Point (ID)	Effluent	Flow Rate (ft/min)	Stack Area (ft ²)	m ³ /min ⁽⁴⁾	Average pCi/m ³	Total Ci Released ⁽³⁾
27-3	MFP/MAP	1670	1.4	66.2	0.009 ⁽¹⁾	1.56e-07
27-4	Cs-137, Co-60, Sr-90, Ni-63, Fe-55 and I-129	1640	1.0	46.4	2.076 ⁽¹⁾	2.52e-05
27-5	MFP/MAP	2760	1.6	125.0	0 ⁽¹⁾	0.00e+00
					Total	2.55e-05
Experimental Area Bunker (Building 27-1)						
BKR1	MFP/MAP	960	1.33	36.2	0.012 ⁽¹⁾	1.14e-07
BKR2	MFP/MAP	1380	1.33	52.0	0.014 ⁽¹⁾	1.91e-07
BKR3	MFP/MAP	1240	1.3	45.6	0.011 ⁽¹⁾	1.31e-07
BKR4	MFP/MAP	1300	1.3	47.9	0.001 ⁽¹⁾	1.26e-08
					Total	4.49e-07
TRIGA Reactor Facility (Building 21)						
TM1	MFP	1270	1.46	52.5	0.005 ⁽¹⁾	6.88e-08
TMF	MFP	860	1.5	36.5	0.010 ⁽¹⁾	9.56e-08
					Total	1.64e-07
TMF	Iodines	860	1.5	36.5	0.047 ⁽¹⁾	4.49e-07
TFL1 & TFLV	Ar-41					4.98e-02 ⁽²⁾
Nuclear Waste Processing Facility (Building 41)						
WPC	Radionuclides Z 3-105	3633	1.07	110.0	0.013 ⁽¹⁾	3.75e-07
WPF1	Radionuclides Z 3-105	1716	1.07	52.0	0 ⁽¹⁾	0.00e+00

Table 1
Gas and Particulate Effluents
January 1, 1996-June 30, 1996

Release Point (ID)	Effluent	Flow Rate (ft/min)	Stack Area (ft ²)	m ³ /min ⁽⁴⁾	Average pCi/m ³	Total Ci Released ⁽³⁾
WPF2	Radionuclides Z 3-105	1650	1.07	50.0	0 ⁽¹⁾	0
					Total	3.75e-07
Other Facilities						
Room 103 Building 31-1 (NMA)	U-235 (various enrichments)	800	0.8	18.1	0.005 ⁽¹⁾	2.37e-08
Bldg 2 labs 511/513 (HP LAB)	Radionuclides Z 3-83	2200	1.1	68.5	0.001 ⁽¹⁾	1.79e-08
Fusion (Bldg 34)	H-3					6.14e-02 ⁽⁵⁾
Sorrento Electronics	Kr-85 Xe-133	2880	0.84	67.7		1.14e-2 ⁽²⁾ 9.30e-3 ⁽²⁾

⁽¹⁾Measured - Airborne effluents from selected facilities are monitored. The samples are collected weekly and analyzed using low-level alpha/beta counting systems. The average concentration (pCi/m³) over the six month period is obtained for each release point (alpha and beta concentrations are added). See pages 2-31 of Attachment A for detailed information.

⁽²⁾Calculated - Detailed information is provided on Page 1 of Attachment A.

⁽³⁾Ci Released = (182 days) (24 hr/day)(60 min/hr) (1e-6 µCi/pCi) (1e-6Ci/µCi) (# m³/min)(average pCi/m³).

⁽⁴⁾ 0.0283 m³ = 1 ft³

⁽⁵⁾ Calculated based on operating time of the fusion device.

Notes:

NMA exhaust monitoring was installed 2/95.

BKR3, BKR4, HLAB, TM1, 27-1, 27-2, 27-3, 27-4, and 27-5 exhaust monitoring were installed 1/95.

Table 2
Liquid Effluents ⁽¹⁾
January 1, 1996 through June 30, 1996

Date	Sample ID	Number of Gallons Released	Gross α/β Result $\mu\text{Ci/ml}$	Total Ci Released ⁽²⁾	Sum of Fractions ⁽³⁾
1/29/96	F01-96-01F	500	5.07e-05	9.60e-05	
1/30/96	F01-96-01F	100	5.07e-05	1.92e-05	
January	Totals	600		1.15e-04	0.058
There were no liquid releases into the sanitary sewerage system in February, March, April, May or June 1996.					
⁽¹⁾ All releases were from Building 25. See Attachment B for detailed release calculations. ⁽²⁾ Total Curies Released = # gal x 3.785 l/gal x 1000 ml/l x Conc ($\mu\text{Ci/ml}$) x 1 Ci/1e6 μCi ⁽³⁾ Sum of Fractions must be < 1. See Attachment B.					

Table 3
NON-RADIOLOGICAL EFFLUENT DATA
 January 1, 1996 through June 30, 1996

Suspended Particulates			
Dates of Collection	Number of Samples	Particulate Concentration $\mu\text{g}/\text{m}^3$	
		Range	Average
5/27/96 - 6/3/96	16	4-43 *	23 *
* There has been heavy construction at sites near General Atomics. This construction is not related to GA activities.			
Hydrogen Chloride In Air			
No samples collected. HCl furnace no longer exists (decommissioned during SVA Decommissioning Project).			

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TRIGA Reactor Ar-41 Releases (Building 21) ⁽¹⁾		
MONTH	MARK I (mCi's) ⁽²⁾	MARK F (mCi's)
January 1996	0.02	0
February 1996	0	0
March 1996	0.002	0
April 1996	0.02	0
May 1996	0.03	0
June 1996	0.048	0
January - June Totals	4.98e-02	0
January - June Totals		
<p>⁽¹⁾ The Mark F reactor last went critical on 4/11/95. The fuel was removed from the core and is in storage.</p> <p>⁽²⁾ Calculated Ci = 7.167 E-05 Curies/MW-hours</p>		

Xe-133 and Kr-85 Releases from Sorrento Electronics		
Date Released	Kr-85 (Curies)	Xe-133 (Curies)
6/9/96	1.14e-02	---
6/13/96	--	9.30e-03
January-June 1996 Totals	1.14e-02	9.30e-03

SVB
(Building 39)

Running Average Report
Detail By Sampling Site
Units = pCi/m3

Attachment A
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Site Code: FB1 Group I.D. 07

Month	Year	Highest Value		Weighted Average		Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta
JAN	1996	0.008	0.022	0.002	0.010	0.000	0.002
FEB	1996	0.001	0.005	0.000	0.003	0.000	0.002
MAR	1996	0.001	0.005	0.000	0.002	0.000	0.000
APR	1996	0.002	0.008	0.000	0.002	0.000	0.000
MAY	1996	0.002	0.008	0.001	0.003	0.000	0.001
JUN	1996	0.002	0.007	0.000	0.002	0.000	0.000

Site Average:
Average Of
Site Data For:

6 Months	0.003	0.009	0.001	0.004	0.000	0.001
Last 3 Months Only	0.002	0.008	0.000	0.002	0.000	0.000

** Printed data values are monthly calculated values.

Running Average Report
Detail By Sampling Site
Units = pCi/m3

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Site Code: FB2 Group I.D. 07

Month	Year	Highest Value		Weighted Average		Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta
JAN	1996	0.003	0.015	0.001	0.006	0.000	0.001
FEB	1996	0.001	0.007	0.000	0.005	0.000	0.002
MAR	1996	0.001	0.007	0.000	0.004	0.000	0.002
APR	1996	0.001	0.007	0.000	0.004	0.000	0.002
MAY	1996	0.001	0.053	0.001	0.015	0.000	0.002
JUN	1996	0.001	0.009	0.000	0.005	0.000	0.003

Site Average:
Average Of
Site Data For:

6 Months	0.001	0.016	0.000	0.007	0.000	0.002
Last 3 Months Only	0.001	0.023	0.000	0.008	0.000	0.002

** Printed data values are monthly calculated values.

Running Average Report
Detail By Sampling Site
Units = pCi/m³

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Site Code: FB3 Group I.D. 07

Month	Year	Highest Value		Weighted Average		Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta
JAN	1996	0.002	0.008	0.001	0.005	0.000	0.001
FEB	1996	0.001	0.011	0.000	0.004	0.000	0.001
MAR	1996	0.000	0.006	0.000	0.004	0.000	0.000
APR	1996	0.001	0.010	0.001	0.005	0.000	0.001
MAY	1996	0.001	0.024	0.000	0.008	0.000	0.001
JUN	1996	0.001	0.009	0.000	0.003	0.000	0.000

Site Average:
Average Of
Site Data For:

6 Months	0.001	0.011	0.000	0.005	0.000	0.001
Last 3 Months Only	0.001	0.014	0.000	0.005	0.000	0.001

** Printed data values are monthly calculated values.

Running Average Report
Detail By Sampling Site
Units = pCi/m3

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Site Code: FB4 Group I.D. 07

Month	Year	Highest Value		Weighted Average		Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta
JAN	1996	0.006	0.020	0.002	0.012	0.000	0.006
FEB	1996	0.001	0.015	0.001	0.009	0.000	0.006
MAR	1996	0.001	0.011	0.001	0.009	0.000	0.008
APR	1996	0.002	0.024	0.001	0.010	0.000	0.007
MAY	1996	0.002	0.199	0.001	0.054	0.000	0.008
JUN	1996	0.002	0.017	0.001	0.012	0.000	0.009

Site Average:
Average Of
Site Data For:

6 Months	0.002	0.048	0.001	0.018	0.000	0.007
Last 3 Months Only	0.002	0.080	0.001	0.025	0.000	0.008

** Printed data values are monthly calculated values.

SVB
(Building 39)

Running Average Report
Summary By Group
Units = pCi/m3

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Group I.D. 07

Site Code	Begin		End		#	Average Highest Value			Average Weighted Average			Average Lowest Value		
						Alpha	**	Beta	Alpha	**	Beta	Alpha	**	Beta
FB1	01	96	06	96	6	0.003		0.009	0.001		0.004	0.000		0.001
FB2	01	96	06	96	6	0.001		0.016	0.000		0.007	0.000		0.002
FB3	01	96	06	96	6	0.001		0.011	0.000		0.005	0.000		0.001
FB4	01	96	06	96	6	0.002		0.048	0.001		0.018	0.000		0.007

Group Average:
Average Of Site
Averages For:

6 Months	0.002	0.021	0.001	0.008	0.000	0.003
Last 3 Months Only	0.002	0.031	0.001	0.010	0.000	0.003

** Printed data values are averages of data processed.

TRIGA Fuel Fab
(Building 22)

Running Average Report
Detail By Sampling Site
Units = pCi/m³

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Site Code: TFL1 Group I.D. 16

Month	Year	Highest Value		Weighted Average		Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta
JAN	1996	0.008	0.002	0.002	0.001	0.000	0.000
FEB	1996	0.010	0.001	0.002	0.001	0.000	0.000
MAR	1996	0.010	0.001	0.003	0.001	0.001	0.000
APR	1996	0.002	0.000	0.001	0.000	0.000	-0.001
MAY	1996	0.001	0.005	0.000	0.001	0.000	-0.001
JUN	1996	0.000	0.000	0.000	0.000	0.000	-0.001

Site Average:
Average Of
Site Data For:

6 Months	0.005	0.002	0.001	0.001	0.000	-0.001
Last 3 Months Only	0.001	0.002	0.000	0.000	0.000	-0.001

** Printed data values are monthly calculated values.

TRIGA Fuel
Fab (Bldg. 22)

Running Average Report
Detail By Sampling Site
Units = pCi/m3

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Site Code: TFLV Group I.D. 17

Month	Year	Highest Value		Weighted Average		Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta
JAN	1996	0.003	0.003	0.001	0.002	0.001	-0.001
FEB	1996	0.003	0.002	0.001	0.001	0.000	-0.001
MAR	1996	0.003	0.002	0.002	0.001	0.001	0.000
APR	1996	0.002	0.002	0.001	0.001	0.000	0.000
MAY	1996	0.003	0.007	0.001	0.003	0.000	-0.001
JUN	1996	0.003	0.007	0.002	0.001	0.001	0.000

Site Average:
Average Of
Site Data For:

6 Months	0.003	0.004	0.001	0.002	0.001	-0.001
Last 3 Months Only	0.003	0.005	0.001	0.002	0.000	0.000

** Printed data values are monthly calculated values.

Hot Cell Facility
(Bldg. 23)

Running Average Report
Detail By Sampling Site
Units = pCi/m3

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Site Code: HCS Group I.D. 13

Month	Year	Highest Value		Weighted Average		Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta
JAN	1996	0.003	0.106	0.002	0.062	0.001	0.021
FEB	1996	0.003	0.106	0.002	0.065	0.001	0.041
MAR	1996	0.003	0.094	0.001	0.051	0.000	0.006
APR	1996	0.006	0.090	0.002	0.046	0.001	-0.001
MAY	1996	0.003	0.090	0.002	0.048	0.000	0.014
JUN	1996	0.005	0.098	0.002	0.055	0.000	0.008

Site Average:
Average Of
Site Data For:

6 Months	0.004	0.097	0.002	0.055	0.001	0.015
Last 3 Months Only	0.005	0.093	0.002	0.050	0.000	0.007

** Printed data values are monthly calculated values.

Hot Cell Facility
Todines

Running Average Report
Detail By Sampling Site
Units = pCi/m3

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Site Code: HCSI Group I.D. 19

Month Year	Highest Value ** Gamma	Weighted Average ** Gamma	Lowest Value ** Gamma
-----	-----	-----	-----
JAN 1996	0.146	0.060	0.018
FEB 1996	0.049	0.040	0.034
MAR 1996	0.044	0.038	0.034
APR 1996	0.055	0.036	0.016
MAY 1996	0.059	0.038	0.004
JUN 1996	0.082	0.040	0.004
-----	-----	-----	-----

Site Average:
Average Of
Site Data For:

6 Months	0.073	0.042	0.018
Last 3 Months Only	0.065	0.038	0.008

** Printed data values are monthly calculated values.

EA-1
(Bldg. 27)

Running Average Report
Detail By Sampling Site
Units = pCi/m3

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Site Code: 27-1 Group I.D. 24

Month	Year	Highest Value		Weighted Average		Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta
JAN	1996	0.001	0.005	0.000	0.004	0.000	0.001
FEB	1996	0.005	0.009	0.001	0.004	0.000	0.000
MAR	1996	0.005	0.011	0.001	0.004	0.000	0.000
APR	1996	0.000	0.014	0.000	0.002	0.000	0.000
MAY	1996	0.000	0.014	0.000	0.004	0.000	0.001
JUN	1996	0.000	0.003	0.000	0.002	0.000	0.002

Site Average:
Average Of
Site Data For:

6 Months	0.002	0.009	0.000	0.003	0.000	0.001
Last 3 Months Only	0.000	0.010	0.000	0.003	0.000	0.001

** Printed data values are monthly calculated values.

Running Average Report
Detail By Sampling Site
Units = pCi/m3

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Site Code: 27-2 Group I.D. 24

Month Year	Highest Value		Weighted Average		Lowest Value	
	Alpha	Beta	Alpha	Beta	Alpha	Beta
JAN 1996	0.000	0.001	0.000	0.000	0.000	-0.001
FEB 1996	0.000	0.001	0.000	0.000	0.000	-0.001
MAR 1996	0.000	0.009	0.000	0.003	0.000	-0.001
APR 1996	0.000	0.003	0.000	0.001	0.000	-0.001
MAY 1996	0.000	0.000	0.000	0.000	0.000	-0.001
JUN 1996	0.000	0.000	0.000	0.000	0.000	-0.001

Site Average:
Average Of
Site Data For:

6 Months	0.000	0.002	0.000	0.001	0.000	-0.001
Last 3 Months Only	0.000	0.001	0.000	0.000	0.000	-0.001

** Printed data values are monthly calculated values.

Running Average Report
Detail By Sampling Site
Units = pCi/m3

Attachment A
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Site Code: 27-3 Group I.D. 24

Month	Year	Highest Value		Weighted Average		Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta
JAN	1996	0.000	0.003	0.000	0.001	0.000	0.000
FEB	1996	0.004	0.185	0.001	0.046	0.000	0.000
MAR	1996	0.000	0.001	0.000	0.000	0.000	0.000
APR	1996	0.001	0.013	0.000	0.006	0.000	0.000
MAY	1996	0.001	0.013	0.000	0.002	0.000	-0.001
JUN	1996	0.000	0.001	0.000	0.000	0.000	-0.001

Site Average:
Average Of
Site Data For:

6 Months	0.001	0.036	0.000	0.009	0.000	0.000
Last 3 Months Only	0.001	0.009	0.000	0.003	0.000	-0.001

** Printed data values are monthly calculated values.

Running Average Report
Detail By Sampling Site
Units = pCi/m3

Attachment A
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Site Code: 27-4 Group I.D. 24

Month	Year	Highest Value		Weighted Average		Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta
JAN	1996	0.006	0.243	0.004	0.207	0.002	0.125
FEB	1996	0.005	0.142	0.002	0.083	0.000	0.000
MAR	1996	0.387	52.050	0.090	11.864	0.000	0.000
APR	1996	0.004	0.172	0.002	0.090	0.000	0.000
MAY	1996	0.002	0.068	0.002	0.049	0.001	0.038
JUN	1996	0.004	0.128	0.002	0.058	0.001	0.031

Site Average:
Average Of
Site Data For:

6 Months	0.068	8.800	0.017	2.059	0.001	0.032
Last 3 Months Only	0.003	0.123	0.002	0.066	0.001	0.023

** Printed data values are monthly calculated values.

Running Average Report
Detail By Sampling Site
Units = pCi/m3

Attachment A
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Site Code: 27-5 Group I.D. 24

Month	Year	Highest Value		Weighted Average		Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta
JAN	1996	0.000	0.002	0.000	0.001	0.000	0.000
FEB	1996	0.000	0.001	0.000	0.000	0.000	0.000
MAR	1996	0.000	0.002	0.000	0.000	0.000	0.000
APR	1996	0.000	0.000	0.000	0.000	0.000	0.000
MAY	1996	0.001	0.000	0.000	0.000	0.000	0.000
JUN	1996	0.000	0.000	0.000	0.000	0.000	-0.001

Site Average:
Average Of
Site Data For:

6 Months	0.000	0.001	0.000	0.000	0.000	0.000
Last 3 Months Only	0.000	0.000	0.000	0.000	0.000	0.000

** Printed data values are monthly calculated values.

EA-1
(Bldg. 27)

Running Average Report
Summary By Group
Units = pCi/m3

Attachment A
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Group I.D. 24

Site Code	Begin		End		#	Average Highest Value		Average Weighted Average		Average Lowest Value	
	Mo	Yr	Mo	Yr		Alpha	Beta	Alpha	Beta	Alpha	Beta
27-1	01	96	06	96	6	0.002	0.009	0.000	0.003	0.000	0.001
27-2	01	96	06	96	6	0.000	0.002	0.000	0.001	0.000	-0.001
27-3	01	96	06	96	6	0.001	0.036	0.000	0.009	0.000	0.000
27-4	01	96	06	96	6	0.068	8.800	0.017	2.059	0.001	0.032
27-5	01	96	06	96	6	0.000	0.001	0.000	0.000	0.000	0.000

Group Average:
Average Of Site
Averages For:

6 Months	0.014	1.770	0.003	0.414	0.000	0.006
Last 3 Months Only	0.001	0.029	0.000	0.014	0.000	0.004

** Printed data values are averages of data processed.

Running Average Report
 Detail By Sampling Site
 Units = pCi/m3

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Site Code: BKR1 Group I.D. 20

Month	Year	Highest Value		Weighted Average		Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta
JAN	1996	0.005	0.008	0.002	0.004	0.001	0.002
FEB	1996	0.021	0.013	0.007	0.007	0.001	0.000
MAR	1996	0.003	0.001	0.002	0.000	0.001	-0.001
APR	1996	0.002	0.007	0.001	0.001	0.001	-0.002
MAY	1996	0.001	0.207	0.000	0.048	0.000	-0.005
JUN	1996	0.001	-0.001	0.000	0.000	0.000	-0.005

Site Average:
 Average Of
 Site Data For:

6 Months	0.005	0.039	0.002	0.010	0.001	-0.002
Last 3 Months Only	0.001	0.071	0.000	0.016	0.000	-0.004

** Printed data values are monthly calculated values.

Running Average Report
Detail By Sampling Site
Units = pCi/m³

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Site Code: BKR2 Group I.D. 20

Month	Year	Highest Value		Weighted Average		Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta
JAN	1996	0.015	0.025	0.007	0.009	0.002	0.002
FEB	1996	0.029	0.033	0.012	0.015	0.003	0.004
MAR	1996	0.019	0.020	0.009	0.008	0.004	0.002
APR	1996	0.005	0.006	0.004	0.003	0.001	0.000
MAY	1996	0.003	0.066	0.003	0.015	0.002	0.000
JUN	1996	0.003	0.000	0.002	0.000	0.001	-0.001

Site Average:
Average Of
Site Data For:

6 Months	0.012	0.025	0.006	0.008	0.002	0.001
Last 3 Months Only	0.004	0.024	0.003	0.006	0.001	0.000

** Printed data values are monthly calculated values.

Running Average Report
Detail By Sampling Site
Units = pCi/m3

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Site Code: BKR3 Group I.D. 20

Month	Year	Highest Value		Weighted Average		Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta
JAN	1996	0.001	0.002	0.000	0.001	0.000	-0.001
FEB	1996	0.001	0.002	0.000	0.001	0.000	-0.001
MAR	1996	0.003	0.245	0.001	0.055	0.000	-0.002
APR	1996	0.003	0.245	0.000	0.002	0.000	-0.001
MAY	1996	0.000	0.030	0.000	0.005	0.000	-0.001
JUN	1996	0.000	-0.001	0.000	0.000	0.000	-0.001

Site Average:
Average Of
Site Data For:

6 Months	0.001	0.087	0.000	0.011	0.000	-0.001
Last 3 Months Only	0.001	0.091	0.000	0.002	0.000	-0.001

** Printed data values are monthly calculated values.

Running Average Report
 Detail By Sampling Site
 Units = pCi/m3

Site Code: BKR4 Group I.D. 20

Month	Year	Highest Value		Weighted Average		Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta
JAN	1996	0.000	0.002	0.000	0.001	0.000	0.000
FEB	1996	0.003	0.005	0.001	0.002	0.000	-0.001
MAR	1996	0.000	0.000	0.000	0.000	0.000	-0.001
APR	1996	0.000	0.006	0.000	0.000	0.000	-0.001
MAY	1996	0.000	0.006	0.000	0.001	0.000	-0.002
JUN	1996	0.005	0.016	0.001	0.004	0.000	-0.001

Site Average:
 Average Of
 Site Data For:

6 Months	0.001	0.006	0.000	0.001	0.000	-0.001
Last 3 Months Only	0.002	0.009	0.000	0.002	0.000	-0.001

** Printed data values are monthly calculated values.

EA-1 Bunker
(Bldg. 27-1)

Running Average Report
Summary By Group
Units = pCi/m3

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Group I.D. 20

Site Code	Begin		End		#	Average Highest Value			Average Weighted Average			Average Lowest Value		
	Mo	Yr	Mo	Yr		Alpha	**	Beta	Alpha	**	Beta	Alpha	**	Beta
BKR1	01	96	06	96	6	0.005		0.039	0.002		0.010	0.001		-0.002
BKR2	01	96	06	96	6	0.012		0.025	0.006		0.008	0.002		0.001
BKR3	01	96	06	96	6	0.001		0.087	0.000		0.011	0.000		-0.001
BKR4	01	96	06	96	6	0.001		0.006	0.000		0.001	0.000		-0.001

Group Average:
Average Of Site
Averages For:

6 Months	0.005	0.039	0.002	0.008	0.001	-0.001
Last 3 Months Only	0.002	0.049	0.001	0.007	0.000	-0.002

** Printed data values are averages of data processed.

TRI6A Reactor
Facility (Bldg. 21)

Running Average Report
Detail By Sampling Site
Units = pCi/m3

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Site Code: TM1

Group I.D. 12

Month	Year	Highest Value		Weighted Average			Lowest Value	
		Alpha	Beta	Alpha	Beta		Alpha	Beta
JAN	1996	0.001	0.003	0.000	0.002		0.000	0.000
FEB	1996	0.000	0.002	0.000	0.001		0.000	0.000
MAR	1996	0.000	0.003	0.000	0.002		0.000	0.000
APR	1996	0.002	0.032	0.000	0.008		0.000	0.000
MAY	1996	0.002	0.051	0.001	0.015		0.000	0.000
JUN	1996	0.000	0.007	0.000	0.002		0.000	0.000

Site Average:
Average Of
Site Data For:

6 Months	0.001	0.016	0.000	0.005	0.000	0.000
Last 3 Months Only	0.001	0.030	0.000	0.008	0.000	0.000

** Printed data values are monthly calculated values.

Running Average Report
Detail By Sampling Site
Units = pCi/m3

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Site Code: TMF Group I.D. 12

Month	Year	Highest Value		Weighted Average			Lowest Value	
		Alpha	Beta	Alpha	Beta		Alpha	Beta
JAN	1996	0.006	0.020	0.002	0.012		0.001	0.005
FEB	1996	0.005	0.013	0.002	0.010		0.000	0.005
MAR	1996	0.001	0.020	0.001	0.010		0.001	0.005
APR	1996	0.002	0.015	0.001	0.005		0.000	0.000
MAY	1996	0.002	0.025	0.001	0.011		0.000	0.003
JUN	1996	0.001	0.012	0.001	0.008		0.000	0.007

Site Average:
Average Of
Site Data For:

6 Months	0.003	0.018	0.001	0.009	0.000	0.004
Last 3 Months Only	0.002	0.017	0.001	0.008	0.000	0.003

** Printed data values are monthly calculated values.

TRIGA Reactor
(Bldg. 21)

Running Average Report
Summary By Group
Units = pCi/m3

Attachment A

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Group I.D. 12

Site Code	Begin Mo	Begin Yr	End Mo	End Yr	#	Average Highest Value		Average Weighted Average		Average Lowest Value	
						Alpha	Beta	Alpha	Beta	Alpha	Beta
TM1	01	96	06	96	6	0.001	0.016	0.000	0.005	0.000	0.000
TMF	01	96	06	96	6	0.003	0.018	0.001	0.009	0.000	0.004

Group Average:
Average Of Site
Averages For:

6 Months	0.002	0.017	0.001	0.007	0.000	0.002
Last 3 Months Only	0.002	0.024	0.001	0.008	0.000	0.002

** Printed data values are averages of . processed.

Iodines
TRI6A Reactor

Running Average Report
Detail By Sampling Site
Units = pCi/m3

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Site Code: TMFI Group I.D. 22

Month Year	Highest Value ** Gamma	Weighted Average ** Gamma	Lowest Value ** Gamma
JAN 1996	0.040	0.032	0.017
FEB 1996	0.284	0.073	0.031
MAR 1996	0.284	0.062	0.031
APR 1996	0.047	0.034	0.013
MAY 1996	0.072	0.047	0.025
JUN 1996	0.072	0.034	0.017

Site Average:
Average Of
Site Data For:

6 Months	0.133	0.047	0.022
Last 3 Months Only	0.064	0.038	0.018

** Printed data values are monthly calculated values.

NWPF
(Bldg. 41)

Running Average Report
Detail By Sampling Site
Units = pCi/m3

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Site Code: WPC

Group I.D. 14

Month	Year	Highest Value		Weighted Average			Lowest Value	
		Alpha	Beta	Alpha	Beta		Alpha	Beta
JAN	1996	0.007	0.020	0.003	0.011		0.001	0.006
FEB	1996	0.004	0.015	0.002	0.005		0.000	0.000
MAR	1996	0.002	0.006	0.001	0.004		0.001	0.003
APR	1996	0.002	0.011	0.001	0.005		0.000	-0.004
MAY	1996	0.003	0.119	0.002	0.031		0.001	0.003
JUN	1996	0.003	0.009	0.002	0.008		0.001	0.005

Site Average:
Average Of
Site Data For:

6 Months	0.004	0.030	0.002	0.011	0.001	0.002
Last 3 Months Only	0.003	0.046	0.002	0.015	0.001	0.001

** Printed data values are monthly calculated values.

Running Average Report
Detail By Sampling Site
Units = pCi/m3

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Site Code: WPF1 Group I.D. 14

Month	Year	Highest Value		Weighted Average			Lowest Value		
		Alpha	Beta	Alpha	Beta		Alpha	Beta	
JAN	1996	0.001	0.002	0.000	0.000		0.000	-0.001	
FEB	1996	0.000	0.002	0.000	0.001		0.000	0.000	
MAR	1996	0.000	0.000	0.000	0.000		0.000	-0.001	
APR	1996	0.000	0.000	0.000	0.000		0.000	-0.002	
MAY	1996	0.000	0.001	0.000	0.000		0.000	-0.001	
JUN	1996	0.000	0.003	0.000	0.001		0.000	-0.001	

Site Average:
Average Of
Site Data For:

6 Months	0.000	0.001	0.000	0.000	0.000	-0.001
Last 3 Months Only	0.000	0.001	0.000	0.000	0.000	-0.001

** Printed data values are monthly calculated values.

Running Average Report
Detail By Sampling Site
Units = pCi/m3

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Site Code: WPF2 Group I.D. 14

Month	Year	Highest Value		Weighted Average			Lowest Value		
		Alpha	Beta	Alpha	Beta		Alpha	Beta	
JAN	1996	0.001	0.003	0.000	0.001		0.000	-0.001	
FEB	1996	0.001	0.002	0.000	0.001		0.000	-0.001	
MAR	1996	0.001	0.000	0.000	0.000		0.000	-0.001	
APR	1996	0.000	0.002	0.000	0.000		0.000	-0.002	
MAY	1996	0.000	0.002	0.000	0.000		0.000	-0.001	
JUN	1996	0.000	0.000	0.000	0.000		0.000	-0.001	

Site Average:
Average Of
Site Data For:

6 Months	0.001	0.002	0.000	0.000	0.000	-0.001
Last 3 Months Only	0.000	0.001	0.000	0.000	0.000	-0.001

** Printed data values are monthly calculated values.

NWPF
(Bldg. 41)

Running Average Report
Summary By Group
Units = pCi/m3

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Group I.D. 14

Site Code	Begin		End		#	Average Highest Value			Average Weighted Average			Average Lowest Value		
						Alpha	**	Beta	Alpha	**	Beta	Alpha	**	Beta
WPC	01	96	06	96	6	0.004		0.030	0.002		0.011	0.001		0.002
WPF1	01	96	06	96	6	0.000		0.001	0.000		0.000	0.000		-0.001
WPF2	01	96	06	96	6	0.001		0.002	0.000		0.000	0.000		-0.001

Group Average:
Average Of Site
Averages For:

6 Months	0.001	0.011	0.001	0.004	0.000	0.000
Last 3 Months Only	0.001	0.016	0.001	0.005	0.000	0.000

** Printed data values are averages of data processed.

Room 1D3
(Building 31-1)

Running Average Report
Detail By Sampling Site
Units = pCi/m3

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Site Code: NMA Group I.D. 25

Month	Year	Highest Value Alpha ** Beta	Weighted Average Alpha ** Beta	Lowest Value Alpha ** Beta
JAN	1996	0.001 0.009	0.000 0.005	0.000 0.000
FEB	1996	0.000 0.003	0.000 0.001	0.000 0.000
MAR	1996	0.000 0.001	0.000 0.001	0.000 0.000
APR	1996	0.000 0.001	0.000 0.000	0.000 -0.001
MAY	1996	0.001 0.001	0.000 0.000	0.000 -0.001
JUN	1996	0.001 0.000	0.000 0.000	0.000 -0.001

Site Average:
Average Of
Site Data For:

6 Months	0.001	0.003	0.000	0.001	0.000	-0.001
Last 3 Months Only	0.001	0.001	0.000	0.000	0.000	-0.001

** Printed data values are monthly calculated values.

Health Physics Lab Running Average Report
 (Room 511/513 of Bldg. 2) Detail By Sampling Site
 Units = pCi/m3

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Site Code: HLAB Group I.D. 23

Month	Year	Highest Value		Weighted Average		Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta
JAN	1996	0.002	0.029	0.000	0.001	0.000	0.000
FEB	1996	0.000	0.001	0.000	0.000	0.000	-0.001
MAR	1996	0.000	0.000	0.000	0.000	0.000	-0.001
APR	1996	0.000	0.001	0.000	0.000	0.000	-0.001
MAY	1996	0.000	0.000	0.000	0.000	0.000	-0.002
JUN	1996	0.000	0.001	0.000	0.000	0.000	-0.001

Site Average:
 Average Of
 Site Data For:

6 Months	0.000	0.005	0.000	0.000	0.000	-0.001
Last 3 Months Only	0.000	0.001	0.000	0.000	0.000	-0.001

** Printed data values are monthly calculated values.

HEALTH PHYSICS LIQUID RELEASE CALCULATION WORKSHEET
Month/Year Jan '96 Release # 1 Location: Hot Cell

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A Radionuclide	B Energy Kev	C Lab Result of Liquid to be Released $\mu\text{Ci/ml}$	R $= C \times V$ (μCi)	Pr Amount Previously Released μCi	Mc $= (Pr + R) / S$ ($\mu\text{Ci} / \text{ml}$)	T Table 3 Monthly Avg. Conc. $\mu\text{Ci/ml}$	F _i Fraction $= Mc / T$
U-238	93	<u>$6.218e-6$</u>	<u>14.121</u>		<u>$1.6363e-8$</u>	3E-6	<u>$5.45e-3$</u>
U-235	186					3E-6	
Th-228	238 583	<u>$1.269e-6$</u>	<u>2.882</u>		<u>$3.339e-9$</u>	2E-6	<u>$1.67e-3$</u>
Ra-228	338 911	<u>$3.285e-6$</u>	<u>7.460</u>		<u>$8.644e-9$</u>	6E-7	<u>$1.44e-2$</u>
Ra-226	352 609	<u>$2.411e-6$</u>	<u>5.475</u>		<u>$6.345e-9$</u>	6E-7	<u>$1.06e-2$</u>
Cs-137	661	<u>$8.712e-5$</u>	<u>197.85</u>		<u>$2.2926e-7$</u>	1E-5	<u>$2.29e-2$</u>
Cs-134	795	<u>$9.696e-6$</u>	<u>22.02</u>		<u>$2.5516e-8$</u>	9E-6	<u>$2.835e-5$</u>
Co-58	811					2E-4	
Co-60	1173 1330	<u>$4.735e-6$</u>	<u>10.753</u>		<u>$1.246e-8$</u>	3E-5	<u>$4.15e-4$</u>
Ta-182	57.5					1E-4	
Y-90						7E-5	
Sr-90						5E-6	
Other							
Total Gamma	Spectroscopy+	<u>$1.147e-4$</u>					
Total Alpha	Beta Result	<u>$5.0697e-5$</u>					
Unidentified	Alpha + Beta	<u>0</u>				2E-8	
H-3						1E-2	
Sample ID:	<u>F-01-96-01F</u>	(V) AMOUNT TO	BE RELEASED, <u>2,271,000</u> ml		<u>600</u> (gal)	SUM OF FRACTIONS	<u>0.058</u> (must be <1)
Start DATE	<u>1-29-96</u>	(J) MONTHLY	SEWAGE FLOW, <u>3,451,920,000</u> ml		<u>912,000</u> (gal)	Approved By:	<u>Laura Quintana</u>
RELEASED:						Date:	<u>1/26/96</u>
NWPF Signature:	<u>[Signature]</u>	(S) <u>25</u> %	of Sewage Flow (J) <u>862,980,000</u> ml		(gal)		

FOR PERSON-IN-CHARGE OF THE ACTUAL RELEASE. NOTE: THIS DOES NOT ALLOW RELEASE INTO SEWER OF HAZARDOUS MATERIALS AND MATERIALS WITH OTHER REGULATORY LIMITATIONS THAT ARE IN THIS LIQUID. CONTACT INDUSTRIAL HYGIENE OR OBTAIN WRITTEN APPROVAL.

HEALTH PHYSICS LIQUID RELEASE CALCULATION WORKSHEET
Month/Year Jan '96 Release # 1 Location: Hot Cell

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A Radionuclide	B Energy Kev	C Lab Result of Liquid to be Released $\mu\text{Ci/ml}$	R $= C \times V$ (μCi)	Pr Amount Previously Released μCi	M $= (Pr + R) / S$ ($\mu\text{Ci} / \text{ml}$)	T Table 3 Monthly Avg. Conc. $\mu\text{Ci/ml}$	F _i Fraction $= M / T$
U-238	93	$6.218e-6$	14.121		$1.6363e-8$	3E-6	$5.45e-3$
U-235	186					3E-6	
Th-228	238 583	$1.269e-6$	2.882		$3.339e-9$	2E-6	$1.67e-3$
Ra-228	338 911	$3.285e-6$	7.460		$8.644e-9$	6E-7	$1.44e-2$
Ra-226	352 609	$2.411e-6$	5.475		$6.345e-9$	6E-7	$1.06e-2$
Cs-137	661	$8.712e-5$	197.85		$2.2926e-7$	1E-5	$2.29e-2$
Cs-134	795	$9.696e-6$	22.02		$2.5516e-8$	9E-6	$2.835e-5$
Co-58	811					2E-4	
Co-60	1173 1330	$4.735e-6$	10.753		$1.246e-8$	3E-5	$4.15e-4$
Ta-182	57.5					1E-4	
Y-90						7E-5	
Sr-90						5E-6	
Other							
Total Gamma	Spectroscopy+	$1.147e-4$					
Total Alpha	Beta Result	$5.0697e-5$					
Unidentified	Alpha + Beta	\emptyset				2E-8	
H-3						1E-2	
Sample ID:	F-01-96-01F	(V) AMOUNT TO	BE RELEASED, $2,271,000$ ml		600 (gal)	SUM OF FRACTIONS	0.058 (must be <1)
Start DATE	1-29-96	(J) MONTHLY	SEWAGE FLOW, $3,451,929,000$ ml		$912,000$ (gal)	Approved By:	Laura Quintana
RELEASED:		(S) 25 %	of Sewage Flow (J) $862,980,000$ ml		(gal)	Date:	1/26/96
NWPF Signature:							

FOR PERSON-IN-CHARGE OF THE ACTUAL RELEASE. NOTE: THIS DOES NOT ALLOW RELEASE INTO SEWER OF HAZARDOUS MATERIALS AND MATERIALS WITH OTHER REGULATORY LIMITATIONS THAT ARE IN THIS LIQUID. CONTACT INDUSTRIAL HYGIENE OR OBTAIN WRITTEN APPROVAL.