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February 24, 1994
696-2197

VIA OVERNIGHT EXPRESS SERVICE

Mr. Bobby Faulkenberry
Regional Administrator
Region V
U.S. Nuclear Regulatory Commission
1450 Maria Lane, Suite 210
Walnut Creek, CA 94596

Subject: Submittal of Semiannual Effluent Report (2 copies)

Reference: GAC letter 696-677 dated 2/27/76, SNM-696, Docket 70-734

Dear Mr. Martin:

In accordance with 10 CFR 70.59, we are transmitting the semiannual effluent report required for the period July 1, 1993 through December 31, 1993. By copy of this letter, six (6) copies of the report are being forwarded to the Director, Office of Nuclear Material Safety and Safeguards, U.S. NRC. Additional copies are being sent to the State of California, Department of Health Services.

Table I 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 Figure 1, a plan view of the site. Table II shows the radiological liquid effluent which is released into a 100 million gallon/day regional sewerage treatment plant. Table III contains the non radiological effluent data taken from our air particulate and HCl sampling points.

The dispersion meteorology of the site was discussed in our first effluent report, referenced above. Certain Table I data used in conjunction with the above referenced meteorology provide the basis for deriving radiological effluent concentrations at the site boundary and nearby vicinity.

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

We trust the information provided is satisfactory to meet the requirements for this submission.

Very truly yours,



Keith E. Asmussen, Director
Licensing, Safety and Nuclear Compliance

LRQ:rmk

Attachments:

Figure 1

Table I - Gas & Particulate Effluents - 7/1/93 - 12/31/93

Table II - Liquid Effluents - 7/1/93 - 12/31/93

Table III - Non-Radiological Effluent Data - 7/1/93 - 12/31/93

Attachment A & Attachment B

cc : Director (6 copies via overnight express service)
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
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1449 West Temple Street
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NO.	FACILITY
1	ADMINISTRATION
2	LABORATORY
9	EXPERIMENTAL
11	SERVICE AND RECEPTION CENTER
13,14,15	T.O. COMPLEX
21	TRIGA REACTORS
22	TRIGA FUEL FAB
23	HOT CELLS
25	WASTE PROCESSING—MS
27	EA-1
30	LINAC
31	ECF
34	DOUBLET III
35	TEST TOWER
37	SV-A (FUEL MANUFACTURING)
39	SV-B
41	WASTE PROCESSING—SV

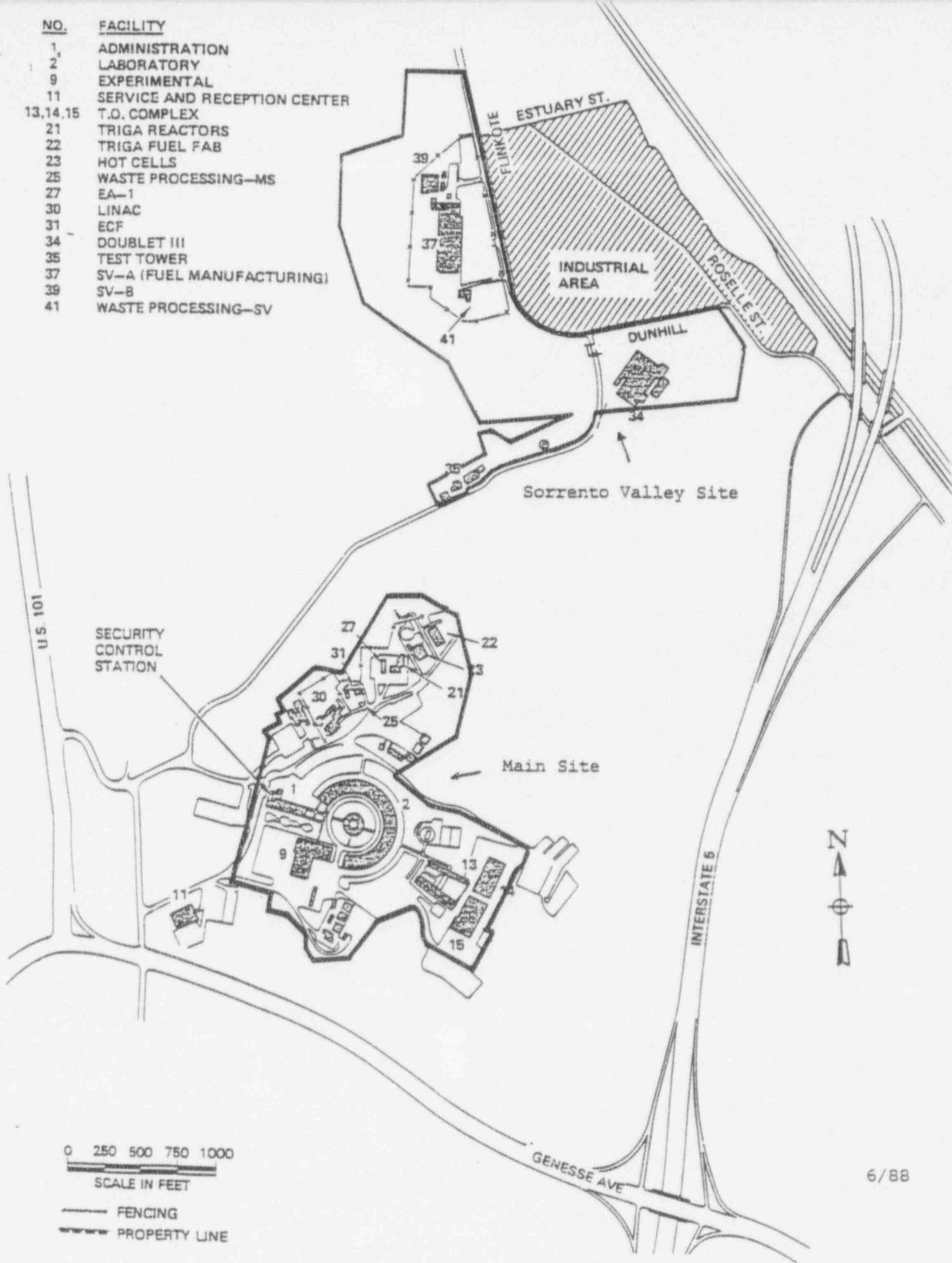


Fig. 1. Plan View of Sites

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TABLE I
 GAS & PARTICULATE EFFLUENTS
 JULY 1, 1993 THROUGH DECEMBER 31, 1993

<u>Release Point</u>	<u>Measurement Basis*</u>	<u>Effluent</u>	<u>Emission (Curies)</u>
SVB (Bldg. 39)	(1) (3) (4)	U ²³⁵ (93% enriched), depleted uranium, thorium- 232 & daughters	1.89 x 10 ⁻⁶
TRIGA Fuel Fab Facility (Bldg. 22)	(1) (3) (4)	U ²³⁵ (~20% enriched)	5.02 x 10 ⁻⁶
Hot Cell Facility (Bldg. 23)	(1) (3) (4)	Mixed fission products	2.88 x 10 ⁻⁶
	(1) (3) (4)	I-131	2.16 x 10 ⁻⁶
	(1)	HTO	0.03
	(1)	HT	0.022
Experimental Area Building (EA-1) (Bldg. 27)	(2)	H-3	5 x 10 ⁻⁴
	(2)	C-14	1 x 10 ⁻⁵
	(2)	Mixed fission products	1 x 10 ⁻⁵
	(2)	Mixed activation products	1 x 10 ⁻⁶
	(2)	U ²³⁵	4 x 10 ⁻⁸
	(2)	Th-232 & daughters	2 x 10 ⁻⁸
Experimental Area Building - EA-1 Bunker (Y-90 Production Facility) (Bldg. 27-1)	(1)	Sr-90/Y-90	1.8 x 10 ⁻⁷
TRIGA Reactor Facility (Bldg. 21)	(1)	Ar-41 Mark I & Mark F	1.31
	(3) (4)	Mixed fission products (Mark F)	3.23 x 10 ⁻⁷
		I - 131	4.52 x 10 ⁻⁷

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CONTINUED

TABLE I
GAS & PARTICULATE EFFLUENTS
JULY 1, 1993 THROUGH DECEMBER 31, 1993

<u>Release Point</u>	<u>Measurement Basis*</u>	<u>Effluent</u>	<u>Emission (Curies)</u>
Sorrento Electronics 10240 and 10247 Flanders Drive	(1) (1)	Kr-85 Xe-133	0 0
Waste Processing Facility (Bldg. 41)	(1)	Radionuclides Atomic # 1-103	3.43×10^{-7}
Science Laboratories (Bldg. 2)	(2) (2) (2)	U^{235} Th-232 & daughters U^{238}	1.2×10^{-7} 1.2×10^{-7} 1.2×10^{-7}
Fusion (Building 34)	(2)	H-3	0.037

* (1) Measured. (2) Estimated. (3) This value includes both measured values and values that were below our limits of detection which is an overestimate. (4) From gross alpha plus gross beta results.

FEBRUARY 24, 1994

**TABLE II
LIQUID EFFLUENTS
JULY 1, 1993 THROUGH DECEMBER 31, 1993**

<u>Release Point</u>	<u>Effluent Radionuclides</u>	<u>Emission (Curies)</u>
Sorrento Valley Site (Bldg. 41)	U ²³⁵ , thorium, atomic # 3-83	8.76 X 10 ⁻⁶
Main Site (Bldg. 25)	U ²³⁵ , thorium, atomic # 3-83	-0-
	TOTAL	8.76 X 10⁻⁶

FEBRUARY 24, 1994

TABLE III
NON-RADIOLOGICAL EFFLUENT DATA
JULY 1, 1993 THROUGH DECEMBER 31, 1993

A. Suspended Particulates

<u>Date of Sample Collection</u>	<u>No. of Samples</u>	<u>Particulate Concentration Range ($\mu\text{g}/\text{M}^3$)</u>	<u>Arithmetic Mean ($\mu\text{g}/\text{M}^3$)</u>
11/22/93 - 11/29/93	16	8 to 33*	18

B. Hydrogen Chloride in Air

No samples collected; HCl furnace no longer exists (decommissioned during SVA Decommissioning project).

* There has been construction at sites near General Atomics. This construction is not related to GA activities.

SEMIANNUAL EFFLUENT REPORT INFORMATION
 JULY 1, 1993 THROUGH DECEMBER 31, 1993

- 1) Liquid Releases
- 2) TRIGA Ar-41 Releases
- 3) Sorrento Valley Xe-133 and Kr-85 Releases

1) 1993 (2nd HALF) LIQUID RELEASES -- SUMMARY BY MONTH

MONTH	MAIN SITE		SORRENTO VALLEY	
	# OF GALLONS	MICROCURIES	# OF GALLONS	MICROCURIES
JUL 1993	-0-	-0-	-0-	-0-
AUG 1993	-0-	-0-	35	0.46
SEP 1993	-0-	-0-	150	5.46
OCT 1993	-0-	-0-	175	2.84
NOV 1993	-0-	-0-	-0-	-0-
DEC 1993	-0-	-0-	-0-	-0-
TOTALS	-0-	-0-	<u>360</u>	<u>8.76</u>

NOTE:

All liquids were filtered before release. The quantities and concentrations met the limits specified in 10CFR20.303 (a), (b) (1), and (c). In addition, all releases met the State of California limits specified in section 30287 of the California Radiation Control Regulations.

Each release is described below. Note that only the primary nuclide(s) is listed. When a mixture of various radionuclides was present, the limiting value was calculated as described in Appendix B "notes (1) through (5)" of 10CFR20. Each calculation is maintained in GA's "Liquid releases" notebook. None of the releases exceeded 50% of the applicable permissible limit (MPC).

SEMIANNUAL EFFLUENT REPORT INFORMATION
 JULY 1, 1993 THROUGH DECEMBER 31, 1993

MAIN SITE RELEASES - NO RELEASES FOR THE MAIN SITE FOR THIS TIME PERIOD

SORRENTO VALLEY SITE - NWPF - BLDG. 41

JULY 1993

NO RELEASES FOR THE SORRENTO VALLEY SITE FOR THIS TIME PERIOD.

AUGUST 1993

<u>ID#</u>	<u>Original</u> <u>Location</u>	<u>Primary</u> <u>Nuclides</u>	<u>Date</u> <u>Released</u>	<u># of</u> <u>Gal.</u>	<u>Concentration</u> <u>(microcuries</u> <u>per ml)</u>	<u>Microcuries</u>
41-LR-9	SVA	TH,U	8-31-93	10	1.26E-6	0.05
41-LR-10	SVA	TH,U	3-31-93	25	4.33E-6	0.41
		TOTALS		<u>35</u>		<u>0.46</u>

SEMIANNUAL EFFLUENT REPORT INFORMATION
 JULY 1, 1993 THROUGH DECEMBER 31, 1993

SEPTEMBER 1993

<u>ID#</u>	<u>Original</u> <u>Location</u>	<u>Primary</u> <u>Nuclides</u>	<u>Date</u> <u>Released</u>	<u># of</u> <u>Gal.</u>	<u>Concentration</u> <u>(microcuries</u> <u>per ml)</u>	<u>MICROCURIES</u>
41-LR-10	SVA	U, TH	9-1-93	25	4.33E-06	0.41
41-LR-11		U, TH	9-7-93	60	7.17E-06	1.63
41-LR-12		U, TH	9-10-93	10	8.78E-05	3.32
41-LR-13		U, TH	9-13-93	55	4.75E-07	0.10
			TOTALS	<u>150</u>		<u>5.46</u>

OCTOBER 1993

41-LR-14		U, TH	10-7-93	175	4.29E-06	2.84
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NOVEMBER AND DECEMBER 1993

NO RELEASES FOR THE SORRENTO VALLEY SITE FOR THIS TIME PERIOD.

SEMIANNUAL EFFLUENT REPORT INFORMATION
 JULY 1, 1993 THROUGH DECEMBER 31, 1993

2) TRIGA Ar-41 Releases

MILLICURIES

MONTH	MARK I CALCULATED	MARK F MEASURED
July	0.086	341
August	0.12	357
September	0.086	195
October	0.067	323
November	0.043	48
December	0.058	47
TOTALS	0.46	1311.0

Conversion Factors Used:

3.279 E-02 microcuries/count (stack monitor net counts)

7.167 E-05 Curies/MW-hours (if net counts are unavailable)

TOTAL ESTIMATED (Measured/Calculated) Ar-41 released from the MARK I & MARK F = 1.31 Ci
 REPORTED IN SEMI-ANNUAL EFFLUENT REPORT.

3) Xe-133 and Kr-85 Releases from Sorrento Electronics -

No releases from July 1, 1993 through December 31, 1993

**STACK INFORMATION
JULY 1, 1993 THROUGH DECEMBER 31, 1993**

Background Information

Stack effluents in selected facilities are monitored. The samples are collected on a weekly basis and analyzed using low-level alpha/beta counting systems.

The average concentration (pCi/M³) over the six month period is obtained for each stack (alpha and beta concentrations are added). Using the stack flow rate (m³/sec), the total release in microcuries is calculated.

The weighted six month average, alpha plus beta, was used in the calculation. Results for each stack are provided as well as a summary page adding all stacks for each facility.

This information is summarized in this section. A Health Physics file entitled "Backup information for the semiannual effluent report for the period 7/1/93 - 12/31/93" details the back-up information used for the reported values.

ALL RELEASES WERE BELOW THE MAXIMUM PERMISSIBLE CONCENTRATIONS AT THE RELEASE POINT DURING THIS SIX MONTH PERIOD.

Report Period

July	31 days
August	31 days
September	30 days
October	31 days
November	30 days
December	31 days
	<u>184 days</u>

Conversion Factor (for this six month period):

$$184 \text{ days} \times \frac{24 \text{ hrs}}{\text{day}} \times \frac{60 \text{ min}}{\text{hr}} \times \frac{10^{-6} \text{ microcuries}}{\text{picocurie}} =$$

$$\frac{0.265 \text{ microcuries-minute}}{\text{picocurie}}$$

STACK INFORMATION
JULY 1, 1993 THROUGH DECEMBER 31, 1993

STACK FLOW DATA

DATES MEASURED	STACK ID	FLOW RATE (FT/MIN)	STACK AREA (FT ²)	M ³ /MIN	BACKUP INFORMATION ENVIRONMENTAL LOGBOOK/DATE MEASURED
SVA NORTH HTGR FUEL FABRICATION FACILITY (BLDG. 37) - Phase I Decommissioning completed 2/93.					
SV-B (BLDG. 39)					
1/12/94	FB1	2480	9	632.0	Pg 16 Log #10913
1/12/94	FB2	2180	9	555.6	Pg 16 Log #10913
1/12/94	FB3	2260	9	576.0	Pg 16 Log #10913
NOT MEASURED NOT USED	FB4	350	0.06	0.61	Pg 16 Log #10913 (not used, Not measured, previous value used)
TRIGA FUEL FABRICATION FACILITY (BLDG. 22)					
1/31/94	TFL 1	1350	6.875	262.8	Pg 16 Log #10913
1/31/94	TFL V	1300	5.812	214.0	Pg 16 Log #10913
HOT CELL (BLDG. 23)					
2/1/94	HCS	3060	3.14	272.0	Pg 16 Log #10913
EA-1 BUNKER FACILITY (BLDG. 27-1)					
1/27/94	EA-1 BKR 1	5860	0.11	18.3	Pg 16 Log #10913
1/27/94	EA-1 BKR 2	1211	1.33	45.6	Pg 16 Log #10913
TRIGA REACTORS (BLDG. 21)					
1/27/94	TMF	1517	1.51	81.2	Pg 16 Log #10913
WASTE PROCESSING FACILITY (BLDG. 41)					
1/12/94	WPC	2880	1.07	87.2	Pg 16 Log #10913
1/12/94	WPF1	1766	1.07	53.5	Pg 16 Log #10913
1/12/94	WPF2	1966	1.07	59.5	Pg 16 Log #10913
NOTES: 0.0283168 m ³ =ft ³ WPF1 & WPF2 were installed 5/93.					

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

Site Code: FB1 Group I.D. 07

Month	Year	Highest Value		Weighted Average		Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta
JUL	1993	0.001	0.006	0.001	0.002	0.001	0.001
AUG	1993	0.001	0.002	0.001	0.002	0.001	0.001
SEP	1993	0.001	0.006	0.001	0.004	0.001	0.002
OCT	1993	0.001	0.005	0.001	0.003	0.001	0.001
NOV	1993	0.001	0.007	0.001	0.005	0.001	0.002
DEC	1993	0.001	0.013	0.001	0.006	0.001	0.001

Site Average:
 Average Of
 Site Data For:

6 Months	0.001	0.007	0.001	0.004	0.001	0.001
Last 3 Months Only	0.001	0.008	0.001	0.005	0.001	0.001

** Printed data values are monthly calculated values.

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

Site Code: FB2 Group I.D. 07

Month	Year	Highest Value		Weighted Average			Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta	
JUL	1993	0.001	0.001	0.001	0.001	0.001	0.001	
AUG	1993	0.001	0.001	0.001	0.001	0.000	0.001	
SEP	1993	0.001	0.001	0.001	0.001	0.001	0.001	
OCT	1993	0.001	0.007	0.001	0.002	0.001	0.001	
NOV	1993	0.001	0.003	0.001	0.001	0.001	0.001	
DEC	1993	0.001	0.006	0.001	0.003	0.001	0.001	

Site Average:
 Average Of
 Site Data For:

6 Months	0.001	0.003	0.001	0.002	0.001	0.001
Last 3 Months Only	0.001	0.005	0.001	0.002	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: FB3 Group I.D. 07

Month	Year	Highest Value		Weighted Average			Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta	
JUL	1993	0.001	0.020	0.001	0.004	0.001	0.001	
AUG	1993	0.003	0.002	0.001	0.001	0.001	0.001	
SEP	1993	0.003	0.005	0.001	0.003	0.001	0.002	
OCT	1993	0.001	0.006	0.001	0.003	0.001	0.001	
NOV	1993	0.001	0.004	0.001	0.002	0.001	0.001	
DEC	1993	0.001	0.002	0.001	0.002	0.001	0.001	

Site Average:
 Average Of
 Site Data For:

6 Months	0.002	0.007	0.001	0.003	0.001	0.001
Last 3 Months Only	0.001	0.004	0.001	0.002	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: FB4 Group I.D. 07

Month Year	Highest Value		Weighted Average		Lowest Value	
	Alpha	Beta	Alpha	Beta	Alpha	Beta
JUL 1993	0.009	0.015	0.002	0.011	0.001	0.006
AUG 1993	0.038	0.033	0.013	0.017	0.001	0.005
SEP 1993	0.009	0.033	0.003	0.020	0.001	0.009
OCT 1993	0.003	0.025	0.002	0.015	0.001	0.003
NOV 1993	0.003	0.029	0.001	0.019	0.001	0.009
DEC 1993	0.001	0.014	0.001	0.007	0.001	0.003

Site Average:
 Average Of
 Site Data For:

6 Months	0.010	0.025	0.004	0.015	0.001	0.006
Last 3 Months Only	0.002	0.023	0.001	0.014	0.001	0.005

** Printed data values are monthly calculated values.

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	
JUL 1993	0.001	0.001	0.001	0.001	0.001	0.001	
AUG 1993	0.005	0.001	0.002	0.001	0.001	0.001	
SEP 1993	0.001	0.001	0.001	0.001	0.001	0.001	
OCT 1993	0.001	0.001	0.001	0.001	0.001	0.001	
NOV 1993	0.001	0.001	0.001	0.001	0.001	0.001	
DEC 1993	0.001	0.001	0.001	0.001	0.001	0.001	
Site Average:							
Average Of							
Site Data For:							
6 Months	0.002	0.001	0.001	0.001	0.001	0.001	
Last 3 Months Only	0.001	0.001	0.001	0.001	0.001	0.001	

** Printed data values are monthly calculated values.

Running Average Report
 Summary By Group
 Units = pCi/m³

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Group I.D. 16

Site Code	Begin Mo	End Yr	End Mo	Yr	# Mo	Average Highest Value			Average Weighted Average			Average Lowest Value				
						Alpha	**	Beta	Alpha	**	Beta	Alpha	**	Beta		
TFL1	07	93	12	93	6	0.002		0.001	0.001		0.001	0.001		0.001		0.001
Group Average: Average Of Site Averages For:																
6 Months						0.002		0.001	0.001		0.001	0.001		0.001		0.001
Last 3 Months Only						0.001		0.001	0.001		0.001	0.001		0.001		0.001

$$TFL\ 1 \quad 0.002\text{pCi}/\text{m}^3 \times 262.8\text{m}^3/\text{min} \times 0.265\text{psi-min}/\text{psi} = 0.14\text{pCi}$$

** Printed data values are averages of data processed.

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
JUL	1993	0.323	0.022	0.048	0.004	0.001	0.002
AUG	1993	0.472	0.030	0.112	0.008	0.001	0.001
SEP	1993	0.018	0.005	0.006	0.003	0.001	0.001
OCT	1993	0.867	0.058	0.270	0.021	0.001	0.001
NOV	1993	0.324	0.030	0.025	0.005	0.005	0.002
DEC	1993	0.015	0.006	0.008	0.004	0.004	0.002

Site Average:
 Average Of
 Site Data For:

6 Months	0.337	0.025	0.078	0.008	0.002	0.002
Last 3 Months Only	0.402	0.031	0.101	0.010	0.003	0.002

** Printed data values are monthly calculated values.

TRIGA Fuel Lab
(Bldg. 22)

Running Average Report
Summary By Group
Units = pCi/m³

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Group I.D. 17

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
TFLV	07	93	12	93	6	0.337		0.025	0.078		0.008	0.002		0.002
Group Average: Average Of Site Averages For:														
6 Months						0.337		0.025	0.078		0.008	0.002		0.002
Last 3 Months Only						0.402		0.031	0.101		0.010	0.003		0.002

$$TFLV \quad 0.086 \mu\text{Ci}/\text{m}^3 \times 214.0 \text{ m}^3/\text{min} \times 0.265 \mu\text{Ci} \cdot \text{min}/\text{pCi} = 4.88 \mu\text{Ci}$$

Total	Bldg. 22	TFL 1	0.14 μCi
		TFL V	<u>4.88 μCi</u>
			5.02 μCi or 5.02 $\times 10^{-6}$ Ci

** Printed data values are averages of data processed.

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	
JUL 1993	0.002	0.056	0.001	0.030	0.001	0.022	
AUG 1993	0.001	0.048	0.001	0.034	0.001	0.026	
SEP 1993	0.001	0.038	0.001	0.025	0.001	0.018	
OCT 1993	0.001	0.140	0.001	0.081	0.001	0.025	
NOV 1993	0.001	0.140	0.001	0.027	0.001	0.014	
DEC 1993	0.003	0.045	0.002	0.035	0.001	0.021	

Site Average:
 Average Of
 Site Data For:

6 Months	0.002	0.078	0.001	0.039	0.001	0.021
Last 3 Months Only	0.002	0.108	0.001	0.048	0.001	0.020

** Printed data values are monthly calculated values.

Hot Cell Facility
(Building 23)

Running Average Report
Summary By Group
Units = pCi/m³

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Group I.D. 13

Site Code	Begin Mo	Begin Yr	End Mo	End Yr	# Mo	Average Highest Value			Average Weighted Average			Average Lowest Value		
						Alpha	**	Beta	Alpha	**	Beta	Alpha	**	Beta
HCS	07	93	12	93	6	0.002		0.078	0.001		0.039	0.001		0.021

Group Average:
Average Of Site
Averages For:

6 Months	0.002		0.078	0.001		0.039	0.001		0.021
Last 3 Months Only	0.002		0.108	0.001		0.048	0.001		0.020

$$0.040 \text{ pCi/m}^3 \times 272.1 \text{ m}^3/\text{min} \times 0.265 \text{ } \mu\text{Ci-min/pCi} \Rightarrow 2.88 \text{ } \mu\text{Ci or}$$

Hot Cell Particulates \Rightarrow $2.88 \times 10^{-6} \text{ Ci}$

** Printed data values are averages of data processed.

Hot Cell Facility
(Building 23)

Running Average Report
Summary By Group
Units = pCi/m³

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Group I.D. 19

Site Code	Begin Mo	Begin Yr	End Mo	End Yr	# Mo	Average Highest Value ** Gamma	Average Weighted Average ** Gamma	Average Lowest Value ** Gamma
HCSI	07	92	12	92	6	0.000	0.030	0.009

Group Average:
Average Of Site
Averages For:

6 Months	0.000	0.081	0.000	0.030	0.000	0.009
Last 3 Months Only	0.000	0.019	0.000	0.013	0.000	0.009

$$0.03 \text{ pCi/m}^3 \times 272.1 \text{ m}^3/\text{min} \times 0.26 \text{ S pCi} \cdot \text{min}/\text{pCi} \Rightarrow 2.16 \times 10^{-6} \text{ Ci}$$

** Printed data values are averages of data processed.

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		Weighted Average		Lowest Value	
	**	Gamma	**	Gamma	**	Gamma
JUL 1992	0.000	0.176	0.000	0.037	0.000	0.001
AUG 1992	0.000	0.231	0.000	0.094	0.000	0.017
SEP 1992	0.000	0.023	0.000	0.014	0.000	0.009
OCT 1992	0.000	0.018	0.000	0.012	0.000	0.009
NOV 1992	0.000	0.020	0.000	0.012	0.000	0.009
DEC 1992	0.000	0.020	0.000	0.014	0.000	0.008

Site Average:
 Average Of
 Site Data For:

6 Months	0.000	0.081	0.000	0.030	0.000	0.009
Last 3 Months Only	0.000	0.019	0.000	0.013	0.000	0.009

** Printed data values are monthly calculated values.

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
JUL	1993	0.001	0.010	0.001	0.004	0.001	0.002
AUG	1993	0.001	0.017	0.001	0.004	0.001	0.001
SEP	1993	0.002	0.031	0.001	0.007	0.001	0.001
OCT	1993	0.005	0.031	0.002	0.011	0.001	0.005
NOV	1993	0.010	0.294	0.002	0.093	0.001	0.010
DEC	1993	0.010	0.042	0.002	0.012	0.001	0.003

Site Average:
 Average Of
 Site Data For:

6 Months	0.005	0.071	0.002	0.022	0.001	0.004
Last 3 Months Only	0.008	0.122	0.002	0.039	0.001	0.006

** Printed data values are monthly calculated values.

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

Site Code: BKR2 Group I.D. 20

Month Year	Highest Value		Weighted Average		Lowest Value	
	Alpha	Beta	Alpha	Beta	Alpha	Beta
JUL 1993	0.013	0.030	0.004	0.008	0.001	0.002
AUG 1993	0.013	0.030	0.003	0.005	0.001	0.001
SEP 1993	0.036	0.066	0.012	0.021	0.001	0.001
OCT 1993	0.016	0.030	0.008	0.011	0.004	0.004
NOV 1993	0.083	0.392	0.014	0.106	0.004	0.007
DEC 1993	0.083	0.187	0.022	0.090	0.007	0.009

Site Average:
 Average Of
 Site Data For:

6 Months	0.041	0.123	0.011	0.040	0.003	0.004
Last 3 Months Only	0.061	0.203	0.015	0.069	0.005	0.007

** Printed data values are monthly calculated values.

Experimental Area
 Bunker - (EA-1)
 Building 27-1

Running Average Report
 Summary By Group
 Units = pCi/m³
 Group I.D. 20

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Site Code	Begin Mo	Begin Yr	End Mo	End Yr	# Mo	Average Highest Value			Average Weighted Average			Average Lowest Value		
						Alpha	**	Beta	Alpha	**	Beta	Alpha	**	Beta
BKR1	07	93	12	93	6	0.005		0.071	0.002		0.022	0.001		0.004
BKR2	07	93	12	93	6	0.041		0.123	0.011		0.040	0.003		0.004

Group Average:
 Average Of Site
 Averages For:

6 Months	0.023		0.097	0.006		0.031	0.002		0.004
Last 3 Months Only	0.034		0.163	0.008		0.054	0.003		0.006

BKR 1

$$0.037 \text{ pCi/m}^3 \times 18.3 \text{ m}^3/\text{min} \times 0.265 \text{ \mu Ci-min/pCi} = 0.18 \text{ \mu Ci}$$

$$\Rightarrow 1.8 \times 10^{-7} \text{ Ci}$$

** Printed data values are averages of data processed.

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

Site Code: TMF Group I.D. 12

Month Year	Highest Value		Weighted Average			Lowest Value	
	Alpha	Beta	Alpha	Beta	Alpha	Beta	
JUL 1993	0.001	0.023	0.001	0.019	0.001	0.015	
AUG 1993	0.004	0.020	0.001	0.014	0.001	0.003	
SEP 1993	0.001	0.033	0.001	0.017	0.001	0.003	
OCT 1993	0.001	0.040	0.001	0.025	0.001	0.011	
NOV 1993	0.001	0.013	0.001	0.005	0.001	0.002	
DEC 1993	0.001	0.003	0.001	0.002	0.001	0.001	

Site Average:
 Average Of
 Site Data For:

6 Months	0.002	0.022	0.001	0.014	0.001	0.006
Last 3 Months Only	0.001	0.019	0.001	0.011	0.001	0.005

** Printed data values are monthly calculated values.

TRIGA Reactor
Facility (Bldg. 21)

Running Average Report
Summary By Group
Units = pCi/m³

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Group I.D. 12

Site Ccde	Begin Mo	End Yr	# Mo	Average Highest Value		Average Weighted Average			Average Lowest Value		
				Alpha	** Beta	Alpha	** Beta	Alpha	** Beta		
TMF	07	93	12	93	6	0.002	0.022	0.001	0.014	0.001	0.006
Group Average: Average Of Site Averages For:											
6 Months						0.002	0.022	0.001	0.014	0.001	0.006
Last 3 Months Only						0.001	0.019	0.001	0.011	0.001	0.005

TRIGA Reactor Facility (Bldg. 21)
(Particulates)

$$0.015 \text{ pCi/m}^3 \times 81.2 \text{ m}^3/\text{min} \times 0.265 \text{ min-pCi} = 0.323 \text{ pCi}$$

$$3.23 \times 10^{-7} \text{ Ci}$$

** Printed data values are averages of data processed.

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

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Site Code: TMFI Group I.D. 12

Month	Year	Highest Value		Weighted Average		Lowest Value	
		**	Gamma	**	Gamma	**	Gamma
JUL	1992	0.000	0.117	0.000	0.025	0.000	0.001
AUG	1992	0.000	0.117	0.000	0.040	0.000	0.012
SEP	1992	0.000	0.026	0.000	0.016	0.000	0.012
OCT	1992	0.000	0.018	0.000	0.016	0.000	0.015
NOV	1992	0.000	0.024	0.000	0.020	0.000	0.013
DEC	1992	0.000	0.015	0.000	0.011	0.000	0.008

Site Average:
 Average Of
 Site Data For:

6 Months	0.000	0.053	0.000	0.021	0.000	0.010
Last 3 Months Only	0.000	0.019	0.000	0.016	0.000	0.012

** Printed data values are monthly calculated values.

TRIGA Reactor
Facility (Bldg. 21)

Running Average Report
Summary By Group
Units = pCi/m³

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Group I.D. 12

Site Code	Begin Mo	End Yr	# Mo	Average Highest Value		Average Weighted Average		Average Lowest Value			
				** Gamma	Gamma	** Gamma	Gamma	** Gamma	Gamma		
TMFI	07	92	12	92	6	0.000	0.053	0.000	0.021	0.000	0.010
Group Average: Average Of Site Averages For:											
6 Months				0.000	0.053	0.000	0.021	0.000	0.010		
Last 3 Months Only				0.000	0.019	0.000	0.016	0.000	0.012		

Iodines

$$0.021 \text{ pCi/m}^3 \times 81.2 \text{ m}^3/\text{min} \times 0.265 \text{ } \mu\text{Ci-min/pCi} \Rightarrow 0.452 \text{ } \mu\text{Ci} \Rightarrow 4.52 \times 10^{-7} \text{ Ci}$$

** Printed data values are averages of data processed.

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	
JUL 1993	0.023	0.027	0.006	0.008	0.003	0.003	
AUG 1993	0.003	0.009	0.002	0.006	0.001	0.003	
SEP 1993	0.003	0.013	0.002	0.008	0.001	0.004	
OCT 1993	0.013	0.019	0.005	0.008	0.002	0.003	
NOV 1993	0.003	0.019	0.002	0.011	0.001	0.004	
DEC 1993	0.001	0.007	0.001	0.005	0.001	0.002	

Site Average:
 Average Of
 Site Data For:

6 Months	0.008	0.016	0.003	0.008	0.002	0.003
Last 3 Months Only	0.006	0.015	0.003	0.008	0.001	0.003

** 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
JUL	1993	0.001	0.001	0.001	0.001	0.001	0.001
AUG	1993	0.013	0.008	0.004	0.003	0.001	0.001
SEP	1993	0.001	0.004	0.001	0.002	0.001	0.001
OCT	1993	0.001	0.001	0.001	0.001	0.001	0.001
NOV	1993	0.001	0.001	0.001	0.001	0.001	0.001
DEC	1993	0.001	0.001	0.001	0.001	0.001	0.001

Site Average:
 Average Of
 Site Data For:

6 Months	0.003	0.003	0.002	0.002	0.001	0.001
Last 3 Months Only	0.001	0.001	0.001	0.001	0.001	0.001

** Printed data values are monthly calculated values.

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

Site Code: WPF2 Group I.D. 14

Month	Year	Highest Value		Weighted Average			Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta	
JUL	1993	0.001	0.001	0.001	0.001	0.001	0.001	
AUG	1993	0.001	0.001	0.001	0.001	0.001	0.001	
SEP	1993	0.001	0.008	0.001	0.002	0.001	0.001	
OCT	1993	0.001	0.008	0.001	0.002	0.001	0.001	
NOV	1993	0.001	0.003	0.001	0.001	0.001	0.001	
DEC	1993	0.001	0.001	0.001	0.001	0.001	0.001	

Site Average:
 Average Of
 Site Data For:

6 Months	0.001	0.004	0.001	0.001	0.001	0.001
Last 3 Months Only	0.001	0.004	0.001	0.001	0.001	0.001

** Printed data values are monthly calculated values.

Running Average Report
 Summary By Group
 Units = pCi/m3

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Group I.D. 14

Site Code	Begin Mo	Begin Yr	End Mo	End Yr	# Mo	Average Highest Value			Average Weighted Average			Average Lowest Value		
						Alpha	**	Beta	Alpha	**	Beta	Alpha	**	Beta
WPC	07	93	12	93	6	0.008		0.016	0.003		0.008	0.002		0.003
WPF1	07	93	12	93	6	0.003		0.003	0.002		0.002	0.001		0.001
WPF2	07	93	12	93	6	0.001		0.004	0.001		0.001	0.001		0.001

Group Average:
 Average Of Site
 Averages For:

6 Months	0.004		0.007	0.002		0.004	0.001		0.002
Last 3 Months Only	0.003		0.007	0.002		0.003	0.001		0.002

** Printed data values are averages of data processed.