



Docket No. 070-00734
License No. SNM-696

February 1, 2008
696/CAL-4165

Mr. Leonard Wert, Jr., Director
Division of Nuclear Material Safety
U.S. Nuclear Regulatory Commission - Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011

Subject: **Transmittal of Semiannual Effluent Report (2 copies)**
Docket Nos. 50-89, 50-163 and 70-734; License Nos. R-38, R-67 and
SNM-696, Respectively

and

Dr. Ron Rogus
State of California
Department of Health Services
Radiological Health Branch, M/S 7610
1500 Capital Avenue
Sacramento, CA 95814-5006

Subject: **Transmittal of Semiannual Effluent Report (2 copies);** License 0145-37

Dear Mr. Wert and Dr. Rogus:

In accordance with 10 CFR 70.59, General Atomics (GA) herewith transmits the required semiannual effluent report for the period July 1, 2007 through December 31, 2007. By copy of this letter, one copy of this report is being forwarded to the Director, Office of Nuclear Material Safety and Safeguards, U. S. Nuclear Regulatory Commission. Additional copies are being sent to the State of California, Department of Health Services.

Table 1 of the report 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 in the report, a plan view of GA's Main Site and Sorrento Valley sites. Attachment A provides detailed information concerning airborne effluent stack sample results over this reporting period. All airborne releases were well within the allowable State of California and NRC (10CFR20) limits. Table 2 provides the liquid effluent released into the sanitary sewerage system during this report period.

We trust the information provided is satisfactory to meet the requirements for this submission. If you should have any questions regarding this information, please contact Ms. Laura Q. Gonzales at (858) 455-2758, or me at (858) 455-2823.

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FEB 05 2008

DNMS

Very truly yours,

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

**Mr. Leonard Wert and Dr. Ron Rogus
696/CAL-4165**

**February 1, 2008
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Enclosure: Semiannual Effluent Report for the period July 1, 2007 through December 31, 2007

cc:

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General Atomics' Semiannual Effluent Report

For the Period

July 1, 2007 through December 31, 2007

**Prepared By Edward Rudgers
Reviewed by Laura Gonzales**

February 1, 2008

Semiannual Effluent Report Summary

In accordance with 10 CFR 70.59, GA has prepared the semiannual effluent report for the period July 1, 2007 through December 31, 2007.

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 Figure 1, a plan view of GA's main site and GA's Sorrento Valley site. Attachment A of the report provides detailed information concerning airborne effluent stack sample results over this reporting period. All airborne releases were well within the allowable State of California and NRC 10CFR20 limits.

Table 2 provides the radiological liquid effluent which was released into a 100 million gallon/day regional sewerage treatment plant. Note: There were no releases into the GA Main Site Sewerage System during this reporting period.

Table 1
Gas and Particulate Effluents – July 1, 2007 through December 31, 2007

Release Point (ID)	Effluent	Flow Rate (ft/min)	Stack Area (ft ²)	m ³ /min ⁽³⁾	Average pCi/m ³	Total Ci Released ⁽²⁾
TRIGA Reactor Facility (Building 21)						
TMF	MFP	489	1.5	20.8	0.004 ⁽¹⁾	2.20e-08
TM1	MFP	1294	1.46	53.5	0.013 ⁽¹⁾	1.84e-07
					Total	2.06e-7
TMF	Iodines	489	1.5	20.8	0.033 ⁽¹⁾	1.82e-07
Other Facilities						
Bldg 10 HP lab	Radionuclides Z 3-83	2030	1.1	63.2	0.005 ⁽¹⁾	8.37e-08
<i>Fusion (Bldg 34)</i>	H-3					0.045 ⁽⁴⁾
<i>General Atomic's Electronic systems Inc. (GA-ESI)</i>	Kr-85 Xe-133	2300	1.5	97.6	---	2.475e-03 2.310e-03
Building 21	H-3					0.25 estimated

⁽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 Attachment A

⁽²⁾ Ci Released = (184 operating days) (24 hr/day)(60 min/hr) (1e-6 μCi/pCi) (1e-6 Ci/μCi) (# m³/min)(average pCi/m³) Note: Operating days may be different based on dates the ventilation system was shut down.

⁽³⁾ Flow rate x stack area (Note: 0.0283 m³ = 1 ft³).

⁽⁴⁾ Calculated based on operating time of the fusion device.

Table 2

**Liquid Effluents
July 1, 2007 through December 31, 2007**

No releases into GA's Main Site Sewerage System during this report period.

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

Attachment A

Page 1 of 7

Site Code: TMF Group I.D. 12

Month	Year	Highest Value		Weighted Average		Lowest Value	
		Alpha	Beta	Alpha	Beta	Alpha	Beta
JUL	2007	0.001	0.006	0.001	0.003	0.000	0.001
AUG	2007	0.001	0.020	0.001	0.007	0.000	0.002
SEP	2007	0.001	0.003	0.001	0.003	0.000	0.002
OCT	2007	0.002	0.007	0.001	0.003	0.000	0.000
NOV	2007	0.001	0.004	0.001	0.003	0.000	0.002
DEC	2007	0.002	0.003	0.001	0.001	0.000	0.000

Site Average:
 Average Of
 Site Data For:

6 Months	0.001	0.007	0.001	0.003	0.000	0.001
Last 3 Months Only	0.002	0.005	0.001	0.002	0.000	0.001

** Printed data values are monthly calculated values.

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

Attachment A

Page 2 of 7

Site Code: TM1 Group I.D. 12

Month Year	Highest Value		Weighted Average			Lowest Value	
	Alpha	Beta	Alpha	Beta	Alpha	Beta	
JUL 2007	0.001	0.009	0.001	0.004	0.000	0.002	
AUG 2007	0.001	0.009	0.001	0.005	0.000	0.002	
SEP 2007	0.017	0.137	0.005	0.039	0.001	0.004	
OCT 2007	0.003	0.011	0.002	0.006	0.001	0.003	
NOV 2007	0.002	0.010	0.001	0.006	0.000	0.003	
DEC 2007	0.000	0.014	0.000	0.007	0.000	0.002	

Site Average:
 Average Of
 Site Data For:

6 Months	0.004	0.032	0.002	0.011	0.000	0.003
Last 3 Months Only	0.002	0.012	0.001	0.006	0.000	0.003

** Printed data values are monthly calculated values.

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	# Mo	Average Highest Value			Average Weighted Average			Average Lowest Value		
						Alpha	**	Beta	Alpha	**	Beta	Alpha	**	Beta
TM1	07	**	12	**	6	0.004		0.032	0.002		0.011	0.000		0.003
TMF	07	**	12	**	6	0.001		0.007	0.001		0.003	0.000		0.001

Group Average:
 Average Of Site
 Averages For:

6 Months	0.003		0.019	0.001		0.007	0.000		0.002
Last 3 Months Only	0.002		0.008	0.001		0.004	0.000		0.002

** Printed data values are averages of data processed.

Running Average Report
 Summary By Group
 Units = pCi/m3

Attachment A

Group I.D. 23

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Site Code	Begin Mo	End Yr	#	Average Highest Value			Average Weighted Average			Average Lowest Value		
				Alpha	**	Beta	Alpha	**	Beta	Alpha	**	Beta
HLAB	07	**	12	**	6	0.001	0.007	0.001	0.004	0.000	0.002	
Group Average: Average Of Site Averages For:												
6 Months				0.001	0.007	0.001	0.004	0.000	0.002			
Last 3 Months Only				0.002	0.006	0.001	0.004	0.000	0.002			

** Printed data values are averages of data processed.

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

Attachment A

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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
JUL	2007	0.001	0.008	0.001	0.004	0.000	0.002
AUG	2007	0.001	0.008	0.001	0.005	0.000	0.001
SEP	2007	0.001	0.005	0.001	0.003	0.000	0.001
OCT	2007	0.003	0.005	0.002	0.003	0.000	0.002
NOV	2007	0.002	0.005	0.001	0.004	0.000	0.003
DEC	2007	0.000	0.008	0.000	0.004	0.000	0.002

Site Average:
 Average Of
 Site Data For:

6 Months	0.001	0.007	0.001	0.004	0.000	0.002
Last 3 Months Only	0.002	0.006	0.001	0.004	0.000	0.002

** 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: TMFI Group I.D. 22

Month Year	Highest Value		Weighted Average		Lowest Value	
	**	Gamma	**	Gamma	**	Gamma
JUL 2007		0.038		0.028		0.019
AUG 2007		0.038		0.037		0.034
SEP 2007		0.055		0.042		0.034
OCT 2007		0.045		0.029		0.019
NOV 2007		0.044		0.039		0.036
DEC 2007		0.040		0.025		0.013

Site Average:
 Average Of
 Site Data For:

6 Months	0.043	0.033	0.026
Last 3 Months Only	0.043	0.031	0.023

** Printed data values are monthly calculated values.

Running Average Report
 Summary By Group
 Units = pCi/m3

Attachment A

Group I.D. 22

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Site Begin End #	Average	Average	Average
Code Mo Yr Mo Yr Mo	Highest Value	Weighted Average	Lowest Value
TMFI 07 ** 12 ** 6	** Gamma	** Gamma	** Gamma
(Iodine)	0.043	0.033	0.026
Group Average:	-----	-----	-----
Average Of Site			
Averages For:			
6 Months	0.043	0.033	0.026
Last 3 Months			
Only	0.043	0.031	0.023

** Printed data values are averages of data processed.