



Interoffice Communication

To W. V. Henry
From P. L. Fetzner
Date June 14, 1979
Subject Deregulation of Regulated Area I -
East end of Block I

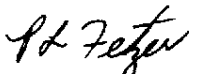
The analytical data summarizing the VCM exposure in Regulated Area No. I has been summarized and tabulated in the attached report by Jay Zimmer.

The data indicates the area should not be deregulated if the criteria used in the past is to be the basis for deregulation. Based on the old criteria i.e. the exposure level of any worker working continuously with the area should not exceed one ppm. The data generated shows the daily average value exceeding one ppm VCM 33% of the time while 22% of the 11,280 individual hourly averages exceeded one ppm VCM. The fact that the outside operators personnel dosimeter data, excluding turnarounds, averaged 0.44 ppm in Block I and 0.39 ppm in Block II indicates the values determined presently in the regulated area may be more realistic than that previously reported.

The difference between present and past data from the sampling point must be addressed. Past data represented only one data point from a series of six analysis and reported as interpolated by a boardman. Present data represents the hourly average from the six analyses as integrated and averaged by a computer system. It is logical to believe the present data to be more reliable.

However, it may be possible although unlikely that electrical interference (noise) may cause a slightly higher value now as the data is handled electronically. To check the possibility of a bias analysis, a zero grade gas containing no VCM and a VCM standard gas will be analyzed separately. Deviation from the zero and standard gas would indicate a bias, be it either positive or negative.

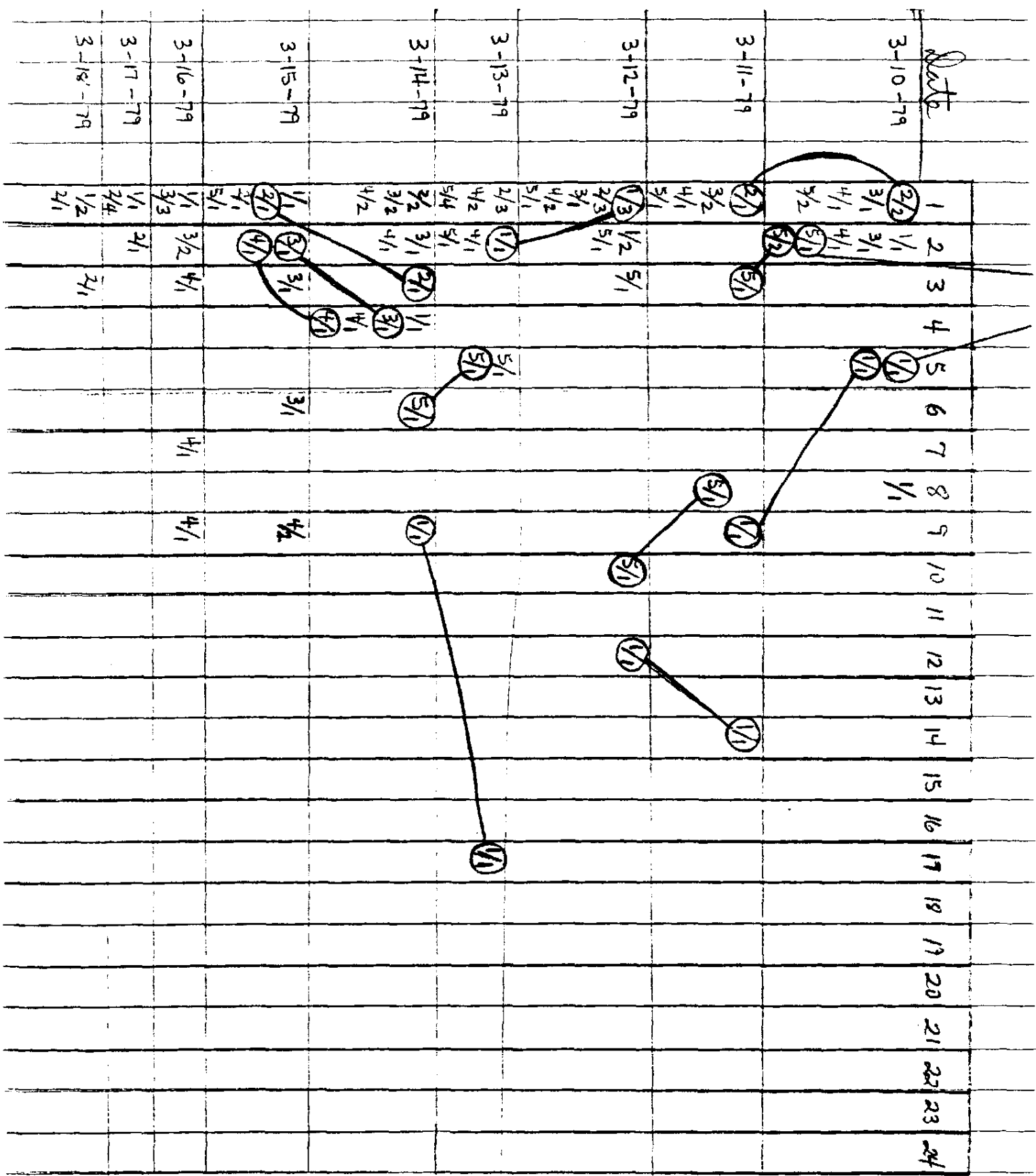
It is recommended the decision regarding deregulation of the regulated area be postponed until the afore-mentioned study is complete. However, to speed the deregulation process the data generated to date is attached so that management may study this information in view of possible deregulation and/or future engineering modifications necessary to reduce the exposure.


P. L. Fetzner

br
cc:
JAD-GLF-HDG


VVC 000007775

MONTH OF MARCH	NUMBER OF HOURLY SAMPLES IN SUCCESSION OVER 1 ppm																								VCM
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
3/1/79		1/4	1/2	2/1	3/1																				
		2/3	2/1	3/2	4/1																				
		4/2	5/1	4/1																					
		5/2																							
3/2/79		1/1	2/1																						
		2/4	4/1																						
		3/1																							
3-3-79		1/2																							
3-4-79		1/1																							
		2/1																							
3-5-79		2/2	(2/1)	3/1	2/1																				
		4/1																							
3-6-79		2/5	(3/1)	2/1																					
		3/1	3/2																						
		4/3																							
3-7-79		2/2	2/1																						
		3/2	3/1																						
		4/3																							
		5/1	5/1																						
3-8-79		2/4	3/1																						
		3/1	4/2																						
		4/3																							
		5/2																							
3-9-79		1/2	1/1																						
		5/2	(1/1)	(5/1)																					
			5/1																						



date

3-19-79

1	1/3	2/3	4/1
2	1/1	2/1	3/1
3	1/1	3/1	5/1
4	1/1		

3-20-79

1	2/1	3/1	4/1	5/1
2	1/1	3/1	5/1	
3	1/1	3/1	5/1	
4	1/2	2/1	4/1	
5	1/1	5/1		

3-21-79

1	1/3	2/4	3/3	4/2	5/1
2	3/1	4/2	2/1		
3	1/1				
4	4/1				

3-22-79

1	1/2	2/4	3/1	4/1	5/1
2	1/1	5/2			
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

3-26-79

1	2/1	3/1	4/1	5/1
2	1/2			

3-27-79

1	1/1	4/1	5/1
2	1/1		
3	1/2		
4	1/1		
5	1/1		

3-28-79

1	1/2	2/1	3/1	4/1	5/1
2	1/1	3/1	5/1		
3	1/1	3/1	5/1		
4	1/1	3/1	5/1		
5	1/1	3/1	5/1		
6	1/1	3/1	5/1		
7	1/1	3/1	5/1		
8	1/1	3/1	5/1		
9	1/1	3/1	5/1		
10	1/1	3/1	5/1		
11	1/1	3/1	5/1		
12	1/1	3/1	5/1		
13	1/1	3/1	5/1		
14	1/1	3/1	5/1		
15	1/1	3/1	5/1		
16	1/1	3/1	5/1		
17	1/1	3/1	5/1		
18	1/1	3/1	5/1		
19	1/1	3/1	5/1		
20	1/1	3/1	5/1		
21	1/1	3/1	5/1		
22	1/1	3/1	5/1		
23	1/1	3/1	5/1		
24	1/1	3/1	5/1		

3-29-79

1	1/2	2/1	3/1	4/1	5/1
2	1/1	3/1	5/1		
3	1/1	3/1	5/1		
4	1/1	3/1	5/1		
5	1/1	3/1	5/1		
6	1/1	3/1	5/1		
7	1/1	3/1	5/1		
8	1/1	3/1	5/1		
9	1/1	3/1	5/1		
10	1/1	3/1	5/1		
11	1/1	3/1	5/1		
12	1/1	3/1	5/1		
13	1/1	3/1	5/1		
14	1/1	3/1	5/1		
15	1/1	3/1	5/1		
16	1/1	3/1	5/1		
17	1/1	3/1	5/1		
18	1/1	3/1	5/1		
19	1/1	3/1	5/1		
20	1/1	3/1	5/1		
21	1/1	3/1	5/1		
22	1/1	3/1	5/1		
23	1/1	3/1	5/1		
24	1/1	3/1	5/1		

3-30-79	1	1/2	2	1/1	3	1/2	4	1/1	5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22		23		24			
		3/1		2/1																																														
				3/2																																														
				4/1																																														
				5/1																																														
3-31-79		4/2				4/1					1/1														1/1	5/1			3/1																					

MONTH OF APRIL	NUMBER OF SAMPLES IN SUCCESSION OVER / ppm																							
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
4-1-79	1/1	2/1	1/1			1/2																		
4-2-79	1/1	1/1	4/1																					
4-3-79	1/2	1/1	4/1																					
4-4-79	1/2	2/1	5/1																					
	3/1	4/2	5/3																					
4-5-79	1/4	2/4	4/2	3/1																				
4-6-79	1/2	2/1	4/1																					
4-7-79	1/2	2/1	3/1																					
4-8-79	1/1	5/1	3/1																					
4-9-79	5/1	5/1	5/1																					
4-10-79	1/2	2/1	3/2																					
4-11-79	1/1	1/1	1/2																					

DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
4-23-79	1/1	5/2									1/1													
4-24-79	3/2		1/1	1/1																				
	1/4	1/1																						
	2/1	5/1																						
	4/2																							
	5/1																							
4-25-79	5/2						4/1																	
4-26-79	1/1	4/1		5/1																				
	2/1																							
	3/1																							
4-27-79	4/1																							
	2/1																							
	3/1																							
4-28-79	5/2																							
	1/1		5/1																					
	2/1																							
	3/1																							
	4/1																							
4-29-79	3/1	1/1				5/1																		
	4/2	2/1																						
4-30-79	1/1																							
	2/1																							
	3/1																							
	4/1																							
	5/1																							

MONTH OF MAY	NUMBER OF ACTUALLY SAMPLES IN SUCCESSION OVER 1 ppm VCM																							
DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
5-1-79																								
5-2-79		4/1																						
5-3-79																								
5-4-79	2/1	1/2																						
5-5-79	1/1	1/2	1/1	1/1																				
5-6-79	1/1																							
5-7-79	1/1	3/1	1/1		2/1	1/1				5/1														
5-8-79	1/2	4/1	3/1	3/1			5/1					1/1												
5-9-79	2/3	4/1		3/1	1/1	3/1	4/1					1/1							5/1					
5-10-79	2/1	1/1	1/1	3/1								3/1							1/1					
5-11-79	2/1	2/3	3/1	1/1											3/1									
5-12-79	2/1	2/1	2/1	2/3																				

DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
5-13-79	$\frac{3}{2}$	$\frac{2}{1}$	$\frac{2}{2}$	$\frac{4}{1}$																				
	$\frac{4}{2}$	$\frac{4}{1}$	$\frac{3}{1}$																					
5-14-79	$\frac{1}{1}$	$\frac{2}{1}$	$\frac{1}{1}$	$\frac{2}{1}$																				
	$\frac{2}{1}$	$\frac{3}{3}$	$\frac{3}{1}$																					
	$\frac{3}{1}$	$\frac{4}{1}$	$\frac{4}{1}$																					
	$\frac{4}{1}$		$\frac{5}{1}$																					
5-15-79	$\frac{2}{2}$	$\frac{3}{1}$	$\frac{1}{2}$																					
	$\frac{3}{4}$	$\frac{4}{1}$	$\frac{3}{1}$																					
	$\frac{4}{4}$	$\frac{5}{1}$																						
	$\frac{5}{3}$	$\frac{4}{1}$	$\frac{4}{1}$																					
5-16-79	$\frac{2}{3}$	$\frac{5}{1}$																						
	$\frac{5}{1}$																							
	$\frac{1}{2}$	$\frac{2}{1}$	$\frac{1}{1}$																					
5-17-79	$\frac{2}{2}$	$\frac{3}{1}$	$\frac{2}{1}$																					
	$\frac{3}{1}$		$\frac{5}{2}$																					
	$\frac{4}{2}$																							
5-18-79	$\frac{5}{2}$	$\frac{1}{1}$	$\frac{1}{1}$																					
	$\frac{2}{3}$	$\frac{5}{1}$																						
	$\frac{5}{1}$																							
5-19-79	$\frac{1}{3}$	$\frac{5}{2}$	$\frac{5}{2}$																					
	$\frac{3}{1}$	$\frac{1}{1}$																						
5-20-79	$\frac{1}{4}$	$\frac{5}{1}$																						
	$\frac{3}{2}$	$\frac{5}{1}$																						
	$\frac{5}{1}$																							

DATE

5-21-79

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

5-22-79

1/1 2/1 3/1 3/2 5/3 1/3 5/2 1/1 1/1 5/1

5-23-79

1/1 2/2 3/2 3/1 5/1 3/2 3/1

5-24-79

1/1 2/2 3/2 3/1

5-25-79

1/1 2/2 3/2 3/1 4/1 5/1

5-26-79

1/1 2/1 3/1 5/1

5-27-79

1/1 2/1 3/1 5/1

5-28-79

1/1 2/1 3/1 4/1 5/1 1/1

5-29-79

1/1 2/1 3/1 4/1 5/1 1/1 2/1 3/1 4/1 5/1

51-30-79

537

1

MONTH OF JUNE

MONTH OF JUNE		NUMBER OF WORKERS EMPLOYED																							
DATE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
6-1-79		1/2 3/2 4/1 5/1	1/2 4/1 5/1	1/1 4/1 5/1			1/1																		
6-2-79		1/2 2/1 3/2 4/3 5/1	4/1 5/1	1/1 5/1			1/1 5/1																		
6-3-79		1/1 2/1 3/1 4/1 5/1 5/2	1/1 3/1 5/1				1/1 5/1																		
6-4-79		1/1 2/3 3/3 4/1 5/1	1/1 4/1 5/1																	1/1					
6-5-79		1/1 1/1 3/2 5/1 5/1	1/1 5/1	4/1		1/1				1/1			5/1												
TOTAL		590 352 267 200 130 138 70 72 108 40 44 60 52 28 90 0 34 0 38 40 0 0 46 120	590 176 89 50 26 23 10 9 12 4 4 5 4 2 6 0 2 0 2 2 0 0 2 5	89 50 26 23 10 9 12 4 4 5 4 2 6 0 2 0 2 2 0 0 2 5	50 26 23 10 9 12 4 4 5 4 2 6 0 2 0 2 2 0 0 2 5	26 23 10 9 12 4 4 5 4 2 6 0 2 0 2 2 0 0 2 5	23 10 9 12 4 4 5 4 2 6 0 2 0 2 2 0 0 2 5	10 9 12 4 4 5 4 2 6 0 2 0 2 2 0 0 2 5	9 12 4 4 5 4 2 6 0 2 0 2 2 0 0 2 5	12 4 4 5 4 2 6 0 2 0 2 2 0 0 2 5	4 4 5 4 2 6 0 2 0 2 2 0 0 2 5	4 4 5 4 2 6 0 2 0 2 2 0 0 2 5	5 4 2 6 0 2 0 2 2 0 0 2 5	4 2 6 0 2 0 2 2 0 0 2 5	6 0 2 0 2 2 0 0 2 5	0 2 0 2 2 0 0 2 5	34 0 2 2 0 0 2 5	0 2 2 0 0 2 5	38 40 0 0 2 5	40 0 0 2 5	0 0 2 5	0 0 2 5	46 120		

$$\frac{2519}{1,280} \times 100 = 22\%$$

VVC 000007787

2519

TABLE II
VCM Exposure Readings

Daily
Area Avg.

March
Date

Sample Point Average
2 # 3 # 4 # 5

3-1-79	1.11	.97	1.07	.97	.95	1.002
3-2-79	.88	.925	.88	.875	.85	4 .882
3-3-79	.91	1.11	.85	.85	.87	.918
3-4-79	1.17	.88	.97	.85	.86	.946
3-5-79	2.37	2.42	2.61	2.8	1.86	2.484
3-6-79	6.32	1.07	.93	1.09	1.64	2.198
3-7-79	5.05	.89	.91	.97	1.85	1.934
3-8-79	2.03	.85	.80	1.10	1.75	1.306
3-9-79	1.55	1.06	.76	.77	1.12	1.052
3-10-79	2.36	.78	.81	.78	.88	1.122
3-11-79	2.97	.81	.78	.76	1.30	1.324
3-12-79	2.3	.81	.76	.75	1.36	1.196
3-13-79	3.19	.93	.73	.95	1.37	1.434
3-14-79	2.1	.86	.92	.97	1.02	1.174
3-15-79	.83	.83	.99	1.17	.825	.929
3-16-79	.79	.79	.89	1.06	.78	.862
3-17-79	.82	1.13	.8	.79	.78	.864
3-18-79	.86	.86	.79	.78	.8	.818
3-19-79	1.27	.90	.85	.82	.86	.94
3-20-79	1.45	1.08	1	1.2	1.1	1.166
3-21-79	1.07	1.02	.9	1.01	.80	.96
3-22-79	2.59	.94	.82	.82	1.7	1.374
3-26-79	1.27	.93	.34	1.29	.84	.934
3-27-79	.59	.55	.55	.55	.58	.564
3-28-79	.92	.83	1.02	.85	.83	.886
3-29-79	.89	.78	.94	.86	.82	.858
3-30-79	1.53	1.44	.89	1.25	1.17	1.256

VCM 00000778

monthly ave

1.20

Date	# 1	# 2	# 3	# 4	# 5	AREA Avg
4-29-79	1.02	.83	.83	.76	.82	.852
4-30-79	.76	.77	.99	.92	.81	.85
						(.96) ^{month} Area

May						
5-1-79	no	information				
5-2-79	.025	.033	.004	.137	0	.0398
5-3-79	.004	0	0	0	0	.0008
5-4-79	.31	.158	.03	0	.0125	.1021
5-5-79	1.45	.0125	.09	.04	0	.3185
5-6-79	.08	.02	.0125	.02	.045	.0355
5-7-79	.13	.6	.59	.59	.78	.658
5-8-79	1.74	.9	1.13	1.67	1.38	1.364
5-9-79	1.97	.86	1.83	3.33	2.12	2.022
5-10-79	2.77	.85	1.77	1.45	2.56	1.88
5-11-79	6.05	1.4	4.4	2.275	5.86	3.997
5-12-79	.81	2.46	.9	.87	.80	1.168
5-13-79	.79	1.28	.92	1.225	.79	1.001
5-14-79	.98	2.56	1.4	1.03	.89	1.372
5-15-79	.96	1	1.1	.93	1.01	1.0
5-16-79	1.05	.98	.95	.99	.98	.97
5-17-79	.97	.89	.88	.86	.92	.904
5-18-79	1.04	.87	.837	.81	.94	.8994
5-19-79	1.22	.81	.85	.81	1.09	.958
5-20-79	.64	.50	.48	.43	.57	.524
5-21-79	1.06	.85	.95	.81	1.037	.9414
5-22-79	.94	1.525	.875	.80	.89	1.006
5-23-79	.521	.454	.42	.44	.44	.45

VVC 00000771

VCM Exposure Readings

<u>APRIL</u>		<u>Sample Point Average</u>					<u>AAA Avg</u>
<u>Date</u>	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>		
4-1-79	1.06	.83	.81	.81	.81		.864
4-2-79	.85	.80	.79	.87	.79		.82
4-3-79	1.03	.78	.84	.94	.77		.872
4-4-79	.87	.97	.77	.83	.92		.872
4-5-79	.88	.87	.84	.93	.92		.888
4-6-79	1.09	.82	.82	.87	.83		.89
4-7-79	.87	.86	.9	.89	.82		.868
4-8-79	.86	.82	.82	.82	1		.864
4-9-79	.28	.27	.27	.27	.34		.286
4-10-79	.59	.55	.52	.53	.52		.542
4-11-79	1.29	.83	.82	.81	.9		.93
4-12-79	1.37	.78	.74	.74	.77		.88
4-13-79	.87	.85	.84	.82	.85		.846
4-14-79	.86	.83	.86	.83	.80		.836
4-15-79	.9	1.07	.85	.82	.97		.922
4-16-79	.86	.88	.85	.9	.8		.858
4-17-79	.85	.9	.85	.87	.81		.855 .856
4-18-79	.92	.86	.92	.89	.83		.884
4-19-79	1.38	1.81	1.57	1.23	1.4		1.478
4-20-79	2.22	1.9	.98	1	.96		1.412
4-21-79	11.16	1.1	1	.9	2.2		3.272
4-22-79	8.27	1.16	1.01	.97	3.28		1.449
4-23-79	4.23	0	0	.04	1.68		1.19
4-24-79	3	.2	.04	.2	1		.888
4-25-79	.35	.34	.38	.42	.37		.372
4-26-79	1.02	.84	.81	.88	.99		.908
4-27-79	.69	.70	.71	.69	.70		.698
4-28-79	.70	.71	.71	.70	.70		.70

VVC 000007790

	#1	#2	#3	#4	#5	Area Avg
5-24-79	.72	.73	.77	.74	.7	.732
5-25-79	.955	1.91	.2	2.92	1.36	1.829
5-26-79	1.075	.76	.79	.76	.9	.857
5-27-79	1.19	.78	.76	.77	1.4	.98
5-28-79	1.01	.79	.87	1	1.045	.943
5-29-79	.98	.87	.83	.84	.95	.913 .934
5-30-79	.95	.86	.86	.85	.89	.882
5-31-79	1.34	1.89	1.52	1.01	1.13	1.378

monthly
avg. (1.047)

June

6-1-79	1.01	.9	.9	.95	.93	.938
6-2-79	1.06	.879	.89	.89	.99	.9418
6-3-79	1.1	.91	.89	.9	1.01	.962
6-4-79	1.1	.9	.91	.91	1.1	.984
6-5-79	1.1	.88	.89	.89	1.03	.954

monthly
avg. (.95)

31 - 22 %
74

TABLE III

MONTHLY AVERAGE OF INDIVIDUAL SAMPLING POINTS

MONTH	SAMPLING POINT					AVERAGE OF DAILY
	#1	#2	#3	#4	#5	
March	1.84	.97	1.03	.99	1.14	1.20
April	1.7	2.83	.77	.77	.95	0.9
May	1.3	.92	.96	.94	1.1	1.05
June	1.67	.89	.89	.9	1.01	0.95

Total No. of Daily Samples - 94

No. of Daily Samples Over 1 ppm VCM - 31

$$\% \text{ over 1 ppm VCM} = \frac{31}{94} \times 100 = 33 \%$$

TABLE IV

VCM Dosimeter Readings - 1979

Block I		Block II	
	.55		.08
	.18		.03
	.08		.49
	.12		.18
	.27		.13
(11)	.224		.05
	.92		.81 (14)
	1.11		.201
	1.03		.51
	0.16		.081
	<u>0.22</u>		.066
Total	4.864		.626
			.55
			<u>1.65</u>
Avg.	.442	Total	5.454
		Avg.	.389