

## EXECUTIVE SUMMARY

## THREE MILE ISLAND UNITS I and II LIQUID and GASEOUS RELEASES

DISCHARGE PATHWAYS	1/1/80 to 1/31/80	2/1/80 to 2/29/80	3/1/80 to 3/31/80	Quarterly Totals 1/1/80 to 3/31/80
I. Liquid Released:				
a) Discharged less Tritium				
1) Concentration ( $\mu\text{Ci}/\text{cc}$ )	2.33E-9	4.90E-9	2.31E-9	3.12E-9
2) Total Activity (Ci)	1.84E-2	3.24E-2	1.62E-2	6.70E-2
b) Iodine-131 Released				
1) Concentration ( $\mu\text{Ci}/\text{cc}$ )	<LLD	<LLD	<LLD	<LLD
2) Total Activity (Ci)	<LLD	<LLD	<LLD	<LLD
c) Tritium Released				
1) Concentration ( $\mu\text{Ci}/\text{cc}$ )	6.41E-7	1.14E-6	6.84E-7	8.10E-7
2) Total Activity (Ci)	5.06E0	7.56E0	4.80E0	1.74E1
d) MDCT Flow for Month (cc)	7.90E12	6.61E12	7.02E12	2.15E13
II. Airborne Iodine Released				
a) Quarterly Release Rate ( $\mu\text{Ci}/\text{sec}$ )	<LLD	<LLD	<LLD	<LLD
b) Total Iodine-131 released (Ci)	<LLD	<LLD	<LLD	<LLD
III. Noble Gases Released:				
a) Quarterly Release Rate (Ci/sec)	9.41E-6	9.46E-6	8.76E-6	2.76E-5
b) Total Noble Gases released (Ci) (Kr-85 is only gas identified by $\gamma$ spectroscopy)	74.2	74.6	69.1	217.9

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## EXECUTIVE SUMMARY

## THREE MILE ISLAND UNITS I and II LIQUID and GASEOUS RELEASES

DISCHARGE PATHWAYS	4/1/80 to 4/30/80	5/1/80 to 5/31/80	6/1/80 to 6/30/80	Quarterly Totals 7/1/80 to 6/30/80
I. Liquid Released:				
a) Discharged less Tritium				
1) Concentration ( $\mu\text{Ci}/\text{cc}$ )	1.65E-9	5.70E-9	3.60E-9	3.71E-9
2) Total Activity (Ci)	1.11E-2	4.09E-2	1.96E-2	7.16E-2
b) Iodine-131 Released				
1) Concentration ( $\mu\text{Ci}/\text{cc}$ )	*4.91E-11	<LLD	1.28E-10	5.34E-11
2) Total Activity (Ci)	*3.30E-4	<LLD	6.99E-4	1.03E-3
c) Tritium Released				
1) Concentration ( $\mu\text{Ci}/\text{cc}$ )	3.33E-7	4.27E-7	2.39E-7	3.42E-7
2) Total Activity (Ci)	2.24E0	3.06E0	1.30E0	6.60E0
d) MDCT Flow for Month (cc)	6.72E12	7.17E12	5.45E12	1.93E13
II. Airborne Iodine Released				
a) Quarterly Release Rate ( $\mu\text{Ci}/\text{sec}$ )	<LLD	<LLD	<LLD	<LLD
b) Total Iodine-131 released (Ci)	<LLD	<LLD	<LLD	<LLD
III. Noble Gases Released: (1)				
a) Quarterly Release Rate (Ci/sec)	9.48E-6	1.18E-5	7.55E-4	7.76E-4
b) Total Noble Gases released (Ci) (Kr-85 is only gas identified by spectroscopy)	74.8	92.8	5949 (2)	6117

(2) Reactor Building purge accounted for 5822 Ci

\*Previous report listed <LLD in error

## EXECUTIVE SUMMARY

## THREE MILE ISLAND UNITS I and II LIQUID and GASEOUS RELEASES

DISCHARGE PATHWAYS	7/1/80 to 7/31/80	8/1/80 to 8/31/80	9/1/80 to 9/30/80	Quarterly Totals 7/1/80 to 9/30/80
<b>I. Liquid Released:</b>				
a) Discharged less Tritium				
1) Concentration ( $\mu\text{Ci}/\text{cc}$ )	2.54E-9			
2) Total Activity (Ci)	1.26E-2			
b) Iodine-131 Released				
1) Concentration ( $\mu\text{Ci}/\text{cc}$ )	<LLD			
2) Total Activity (Ci)	<LLD			
c) Tritium Released				
1) Concentration ( $\mu\text{Ci}/\text{cc}$ )	3.85E-7			
2) Total Activity (Ci)	1.91E0			
d) MDCT Flow for Month (cc)	4.96E12			
<b>II. Airborne Iodine Released</b>				
a) Quarterly Release Rate ( $\mu\text{Ci}/\text{sec}$ )	<LLD			
b) Total Iodine-131 released (Ci)	<LLD			
<b>III. Noble Gases Releases:</b>				
a) Quarterly Release Rate (Ci/sec)	5.14E-3			
b) Total Noble Gases released (Ci) (Kr-85 is only gas identified by spectroscopy)	40,524 (5)			
5) Reactor Building purges accounted for 40,472 Ci				

TABLE (1)  
LIQUID RADIONUCLIDE DISCHARGE  
By Isotope

RADIONUCLIDE	1/1/80-1/31/80 Activity (Ci)	2/1/80-2/29/80 Activity (Ci)	3/1/80-3/31/80 Activity (Ci)	First Quarter 1/1/80-3/31/80 Activity (Ci)
H-3	5.06E0 <sup>(3)</sup>	7.56E0 <sup>(3)</sup>	4.80E0 <sup>(3)</sup>	1.74E1
P-32	--	1.52E-4	--	1.52E-4
Mn-54	1.66E-4	--	9.84E-5	2.64E-4
Co-58	9.76E-5	2.77E-4	6.77E-5	4.42E-4
Co-60	7.98E-4	6.71E-4	1.42E-3	2.89E-3
Sr-89	1.43E-4	9.55E-3	3.16E-5	9.72E-3
Sr-90	4.3E-3	9.55E-3	2.88E-3	1.67E-2
Ag-110m	2.04E-5	--	7.54E-4	7.74E-4
I-131	*	--	**	***
Cs-134	2.51E-3	2.33E-3	2.19E-3	7.03E-3
Cs-137	<u>1.04E-2</u>	<u>9.86E-3</u>	<u>8.74E-3</u>	<u>2.90E-2</u>
Totals less H-3	1.84E-2	3.24E-2	1.62E-2	6.70E-2

	*	**	***
Effluent =	2.53E-3 Ci	4.00E-4 Ci	2.93E-3 Ci
Influent =	2.69E-3 Ci	4.05E-4 Ci	3.10E-3 Ci

Therefore, there is no net release of Iodine-131 from TMI

(3) Re-calculated using method described by note on bottom of Table (4)

TABLE (1)  
LIQUID RADIONUCLIDE DISCHARGE  
By Isotope

RADIONUCLIDE	4/1/80-4/30/80 Activity (Ci)	5/1/80-5/31/80 Activity (Ci)	6/1/80-6/30/80 Activity (Ci)	Second Quarter 4/1/80-6/30/80 Activity (Ci)
H-3	2.24E0	3.06E0	1.30E0	6.60E0
P-32	---	8.63E-5	---	8.63E-5
Mn-54	2.42E-5	4.88E-5	1.68E-4	2.41E-4
Co-58	1.68E-5	5.45E-5	1.40E-4	2.11E-4
Co-60	1.52E-3	3.04E-3	3.23E-3	7.79E-3
Sr-89	3.32E-5	2.07E-5	---	5.39E-5
Sr-90	5.82E-5	1.72E-4	1.98E-5	2.50E-4
Ag-110m	2.56E-3	1.91E-2	3.79E-3	2.55E-2
Sb-125	---	1.16E-4	8.64E-5	2.02E-4
I-131	3.30E-4*	<LLD	6.99E-4**	1.03E-3
Cs-134	1.32E-3	4.00E-3	2.97E-3	8.29E-3
Cs-137	5.24E-3	1.43E-2	9.23E-3	2.88E-2
Totals less H-3	1.11E-2	4.09E-2	2.03E-2	7.24E-2

	*	**
Effluent =	2.05E-3 Ci	14.97E-4 Ci
Influent =	1.72E-3 Ci	7.98E-4 Ci
Net Release =	3.30E-4 Ci	6.99E-4 Ci

TABLE (1)  
LIQUID RADIONUCLIDE DISCHARGE  
By Isotope

RADIONUCLIDE	7/1/80-7/31/80 Activity (Ci)	8/1/80-8/31/80 Activity (Ci)	9/1/80-9/30/80 Activity (Ci)	Third Quarter 7/1/80-9/30/80 Activity (Ci)
H-3	1.91E0			
P-32	----			
Mn-54	1.84E-4			
Co-58	2.46E-5			
Co-60	2.74E-3			
Sr-89	----			
Sr-90	4.90E-5			
Ag-110m	2.37E-3			
Sb-125	1.07E-4			
I-131	<LLD			
Cs-134	1.61E-3			
Cs-137	5.47E-3			
Totals less H-3	1.26E-2			

TABLE (2)  
SUMMARY OF LIQUID VOLUME DISCHARGES-1980  
 (GALLONS)

	<u>1/1/80-1/31/80</u>	<u>2/1/80-2/29/80</u>	<u>3/1/80-3/31/80</u>	1st Quarter <u>1/1/80-3/31/80</u>
IWTS	737,250	652,000	912,550	2,301,800
IWFS	237,390	222,000	305,730	765,120
WECST (A&B)	55,522	114,735	88,642	258,899
Unit I SEC. NEUT.	424,500	292,056	118,011	834,567
MDCT = TOTAL - (IWTS + IWFS + WECST (A&B) + UNIT I SEC. NEUT.)				
TOTALS	<u>2,087,600,000</u>	<u>1,744,900,000</u>	<u>1,853,400,000</u>	<u>5,685,900,000</u>

TABLE (2)  
SUMMARY OF LIQUID VOLUME DISCHARGES-1980  
 (GALLONS)

	<u>4/1/80-4/30/80</u> (4)	<u>5/1/80-5/31/80</u>	<u>6/1/80-6/30-80</u>	<u>2nd Quarter</u> <u>4/1/80-6/30/80</u>
IWTS	527,360	545,770	379,160	1,452,290
IWFS	239,890	263,460	304,760	808,110
WECST (A&B)	73,212	91,032	90,172	254,416
Unit I SEC. NEUT.	366,768	407,520	518,890	1,293,178
MDCT = TOTAL - (IWTS + IWFS + WECST (A&B) + UNIT I SEC. NEUT.)				
TOTALS	<u>1,774,800,000</u>	<u>1,895,400,000</u>	<u>1,440,500,000</u>	<u>5,110,700,000</u>

(4) Original April Report used May volumes. The error was corrected in the May Report.



TABLE (2)  
SUMMARY OF LIQUID VOLUME DISCHARGES-1980  
 (GALLONS)

	<u>7/1/80-7/31/80</u>	<u>8/1/80-8/31/80</u>	<u>9/1/80-9/31/80</u>	<u>Second Quarter</u> <u>7/1/80-9/30/80</u>
IWTS	553,620			
IWFS	255,550			
WECST (A&B)	80,910			
UNIT I SEC. NEUT.	208,005			
MDCT = TOTAL - (IWTS + IWFS + WECST (A&B) + UNIT I SEC. NEUT.)				
TOTALS	<u>1,310,100,000</u>			

TABLE (3)  
SUSQUEHANNA RIVER FLOW RATES-1980\*

<u>1st Quarter</u>			
January	2.37E4 cfs	or	1.42E6 cfm
February	1.25E4 cfs	or	7.54E5 cfm
March	6.38E4 cfs	or	3.83E6 cfm
Average	3.33E4 cfs	or	2.00E6 cfm
<u>2nd Quarter</u>			
April	3.84E4 cfs	or	2.31E6 cfm
May	9.29E4 cfs	or	5.57E6 cfm
June	1.42E4 cfs	or	8.52E5 cfm
Average	4.85E4 cfs	or	2.91E6 cfm
<u>3rd Quarter</u>			
July	1.00E4 cfs	or	6.00E5 cfm
August			
September			
Average			
<u>4th Quarter</u>			
October			
November			
December			
Average			

\*Estimate by U.S. Geological Survey

TABLE (4)  
TMI LIQUID TRITIUM DISCHARGE FOR-1980

	UNIT I			UNIT II		UNITS I and II					Net River Discharge (Effluent minus Influent)	
	WECST - TANK 11A and 11B			1WTS, 1WTS, and SEC. NEUT.	WETT-TANK 9A and 9B NEUT TEST TANK 8A and 8B	MONTHLY COMPOSITE						
	Volume Discharged	Composite Sample				Sum of Each Release	Volume	10S1 Effluent		13S2 Influent		
cc x 10 <sup>6</sup>	µCi/cc	CI	CI	CI	CI	cc	µCi/cc	CI	µCi/cc	CI	CI	
January	2.10	1.60E-2	3.36	3.91	<1.26E-2		7.9E12	6.1E-7	4.82E0	1.40E-7	1.11E0	*5.06**
February	4.34	1.23E-2	5.34	7.07	<		6.6E12	1.11E-6	7.33E0	1.65E-7	1.09E0	*7.56**
March	3.33	1.19E-2	3.96	4.46	<		7.0E12	5.8E-7	4.07E0	1.50E-7	1.05E0	*4.80**
April	2.77	5.84E-3	1.62	1.84	3.40E-3		6.7E12	3.90E-7	2.61E0	1.30E-7	8.74E-1	*2.24
May	(5) 3.45	6.12E-3	2.11	2.66	2.87E-3		7.17E12	4.4E-7	3.15E0	Sum of Daily Counts =	9.70E-1	3.06
June	3.41	3.06E-3	1.04	1.06	2.21E-3		5.45E12	3.00E-7	1.64E0	"	8.91E-1	*1.30
July	3.06	3.62E-3	1.11	1.40	1.85E-3		4.96E12	5.40E-7	2.68E0	1.50E-7	7.69E-1	1.91

\*Effluent data used in calculated using plant effluent and batch release data. The higher daily figure is used and summed for the month.  
 \*\* Re-calculated by subtracting influent tritium from effluent tritium (5) Wrong volume in May, this is correct volume, correct one used for May calculations

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TABLE (5)

THE LIQUID RADIOSTRONTIUM DISCHARGE FOR - 1980

	UNIT I						UNIT II									
	WECST - Composite			Tank IIA & IIB			WETT - Composite			Tank 9A & 9B			NEUT. TEST TANK 8A & 8B			
	Tank Volume Discharged cc x 10 <sup>6</sup>	Sr-89 μCi/cc	CI	Sr-90 μCi/cc	CI	Tank Volume Discharged cc x 10 <sup>6</sup>	Sr-89 μCi/cc	CI	Sr-90 μCi/cc	CI	Tank Volume Discharged cc x 10 <sup>6</sup>	Sr-89 μCi/cc	CI	Sr-90 μCi/cc	CI	
January	2.10	6.8E-7	1.43E-4	4.7E-7	9.87E-5	No liquid release from Unit II since the accident of March 28, 1979										
February	4.34	2.2E-5	9.55E-3	2.2E-5	9.55E-3											
March	3.33	9.5E-8	3.16E-5	1.5E-7	5.00E-5											
April	2.77	1.2E-7	3.32E-5	2.1E-7	5.82E-5											
May	3.45	6.0E-8	1.07E-5	5.0E-7	1.72E-4											
June	3.41	<4E-8	-----	5.8E-8	1.98E-5											
July	3.06	<3E-8	-----	1.6E-7	4.90E-5											
August																
September																
October																
November																
December																

(6) May report had positive exponent. Correct exponent is a negative number.

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