

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)	8.63E-6	8.68E-6	8.04E-6	2.52E-5
b) Total Noble Gases released (Ci) (Kr-85 is only gas identified by γ spectroscopy)	68*	68*	63	199

* January and February gas releases were changed (slightly lower than originally published Ci amounts) to reflect a more accurate method of computation of total flow. These numbers were obtained by adding hourly readings of AM-5 cpm and integrating with flow data which is read every four hours.

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

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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 4/1/80 to 6/30/80
I. Liquid Released:				
a) Discharged less Tritium				
1) Concentration ($\mu\text{Ci/cc}$)	1.65E-9 **	5.70E-9		
2) Total Activity (Ci)	1.1E-2	4.09E-2		
b) Iodine-131 Released				
1) Concentration ($\mu\text{Ci/cc}$)	<LLD	<LLD		
2) Total Activity (Ci)	<LLD	<LLD		
c) Tritium Released				
1) Concentration ($\mu\text{Ci/cc}$)	3.33E-7 **	4.27E-7		
2) Total Activity (Ci)	2.24E0*	3.06E0		
d) MDCT Flow for Month (cc)	6.72E12**	7.17E12		
II. Airborne Iodine Released				
a) Quarterly Release Rate ($\mu\text{Ci/sec}$)	<LLD	<LLD		
b) Total Iodine-131 released (Ci)	<LLD	<LLD		
III. Noble Gases Released:				
a) Quarterly Release Rate (Ci/sec)	8.71E-6	1.08E-5		
b) Total Noble Gases released (Ci) (Kr-85 is only gas identified by spectroscopy)	69	85		

* Calculated for the first time by subtracting influent Tritium from effluent Tritium

** Recalculated to get more accurate data

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	5.106E0 (1)	7.56E0 (1)	4.80E0 (1)	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

(1) 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		
P-32	---	---		
Mn-54	2.42E-5	4.88E-5		
Co-58	1.68E-5	5.45E-5		
Co-60	1.52E-3	3.04E-3		
Sr-89	3.32E-5	2.07E-5		
Sr-90	5.82E-5	1.72E-4		
Ag-110m	2.56E-3	1.91E-2		
Sb-125	---	1.16E-4		
I-131	3.30E-4*	<LLD		
Cs-134	1.32E-3	4.00E-3		
Cs-137	5.24E-3	1.43E-2		
Totals less H-3	1.11E-2	4.09E-2		

* Effluent = 2.05E-3 Ci

Influent = 1.72E-3 Ci

Net Release = 3.30E-4

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>	<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		
IWFS	239,890*	263,460		
WECST (A&B)	73,212	91,032		
Unit I SEC. NEUT.	366,768*	407,520		
MDCT = TOTAL - (IWTS + IWFS + WECST (A&B) + UNIT I SEC. NEUT.)				
TOTALS	<u>1,774,800,000*</u>	<u>1,895,400,000</u>		

*Recalculated for greater accuracy

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			
Average			

<u>3rd Quarter</u>			
July			
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

	WECST - TANK 11A and 11B			IWTS, IWTS, and SEC. NEUT.	WETT-TANK 9A and 9B NEUT TEST TANK 8A and 8B	MONTHLY COMPOSITE					Net River Discharge (Effluent minus Inflow) Ci	
	Volume Discharged	Composited Sample				Sum of Each Release	Volume	10S1 Effluent		13S2 Influent		
		cc x 10 ³	µCi/cc					Ci	Ci	µCi/cc		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	3.84E-3	1.62	1.84	3.40E-3	6.7E12	3.90E-7	2.61E0	1.30E-7	8.74E-1	* 2.24	
May	5.95	6.12E-3	2.11	2.66	2.87E-3	7.17E12	4.4E-7	4.03*	Sum of Daily Gener. 3.15E0	9.70E-1	3.06	

*Effluent data used is calculated using plant effluent and batch release data. The highest daily figure is used and summed for the month.
 ** Re-calculated by subtracting influent tritium from effluent tritium

