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November 4, 1980
TLL 564

Office of Management and Program Analysis
Licensee Operations Evaluation Branch
Attn: M. R. Beebe
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

THIS DOCUMENT CONTAINS
POOR QUALITY PAGES

Dear Sir:

Three Mile Island Nuclear Station, Units 1 and 2 (TMI-1 and TMI-2)
Operating License Nos. DPR-50 and DPR-73
Docket Nos. 50-289 and 50-320
Radioactive Material Releases for 1978

The following is the TMI response to your letter of October 6, 1980, regarding "Radioactive Materials Released from Nuclear Power Plants in 1978."

The draft copy of data for TMI Unit 1 are correct except for the following:

1. Average Stream flow in 1st quarter = 2.15E6 liters/min
2. Average Stream flow in 2nd quarter = 1.70E6 liters/min
3. Average Stream flow in 3rd quarter = 2.13E7 liters/min
4. Average Stream flow in 4th quarter = 3.00E7 liters/min
5. Abnormal Releases, Gaseous, total activity = 4.92E0 Ci
6. Gaseous Effluents, Iodines, Average Release Rate for period, 2nd quarter = 1.84E-3 μ Ci/sec
7. Gaseous Effluents, Batch Mode, 4th quarter, Iodines I-131 = 1.65E-4 Ci
8. Liquid Effluents, Nuclides Released, Batch Mode, 2nd quarter, Sb-122 = 1.27E-4 Ci
9. Solid Waste and Irradiated Fuel Shipments, estimate of major nuclide composition, c, Cs-136 = 4.49E-1%

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ADD:
R. BEEBE

The draft copy of the data for TMI Unit 2 are correct except for the following:

1. Average Stream flow in 2nd quarter = 1.70E6 liters/min
2. Average Stream flow in 3rd quarter = 2.13E7 liters/min

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3. Average Stream flow in 4th quarter = 3.00E7 liters/min
4. Batch releases, B. Gaseous, Maximum time period for a batch release (min), 4th quarter = 1.41E4
5. Gaseous Effluents - summation of releases for entire year are missing. See attached tables 1A for all four calendar quarters.
6. Liquid Effluents - summation of all releases for entire year are missing. See attached tables 2A for all four calendar quarters.
7. Gaseous Effluents, nuclides released are missing for the entire year. See attached tables 1C for all four calendar quarters.
8. Liquid Effluents, nuclides released are missing for entire year. See attached tables 2B for all four calendar quarters.

Sincerely,

/s/ H. D. Hukill

H. D. Hukill
Director, TMI-1

HDH:LWH:hh

Attachments

cc: R. A. Hartfield

~~R. A. Hartfield~~
B. J. Snyder
J. T. Collins

TABLE 1A

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (YEAR)
GASEOUS EFFLUENTS—SUMMATION OF ALL RELEASES

TMI - Unit 2 - 1978	Unit	Quarter 1st	Quarter 2nd	Est. Total Error, %
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A. Fission & activation gases

1. Total release	Ci	< MDAE	256 E ₁	2.5 E ₁
2. Average release rate for period	μCi/sec	. E	326 E ₂	
3. Percent of Technical specification limit	%	. E	501 E ₃	

B. Iodines

1. Total iodine-131	Ci	< MDAE	801 E ₆	2.5 E ₁
2. Average release rate for period	μCi/sec	. E	102 E ₆	
3. Percent of technical specification limit	%	. E	125 E ₃	

C. Particulates

1. Particulates with half-lives >8 days	Ci	104 E ₄	258 E ₄	2.5 E ₁
2. Average release rate for period	μCi/sec	52 E ₄	328 E ₅	
3. Percent of technical specification limit	%	25 E ₃	137 E ₃	
4. Gross alpha radioactivity	Ci	< MDAE	< MDAE	

D. Tritium

1. Total release	Ci	< MDAE	413 E ₉	2.5 E ₁
2. Average release rate for period	μCi/sec	. E	525 E ₃	
3. Percent of technical specification limit	%	. E	N/A E	

A.3. Tech Spec Limit: 1.9E16 cc/qtr - based on 2 reactor units

B. & C.-3. Tech Spec Limit: 0.006 μCi/sec - based on maximum release rate under normal operating conditions (30 day notification limit)

D.3. Tech Spec Limit: Tritium is included in A.3.

TABLE 1C

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT (YEAR)

GASEOUS EFFLUENTS—GROUND-LEVEL RELEASES

TMI-Unit 2		CONTINUOUS MODE		BATCH MODE		
Nuclides Released	1978	Unit	Quarter 1st	Quarter 2nd	Quarter 1st	Quarter 2nd

1. Fission gases

krypton-85	Ci	<MDAE	<MDAE	<MDAE	<MDAE
krypton-85m	Ci	<MDAE	<MDAE	<MDAE	<MDAE
krypton-87	Ci	<MDAE	<MDAE	<MDAE	<MDAE
krypton-88	Ci	<MDAE	<MDAE	<MDAE	<MDAE
xenon-133	Ci	<MDAE	<MDAE	<MDAE	2.36 E-1
xenon-135	Ci	<MDAE	<MDAE	<MDAE	2.03 E-2
xenon-135m	Ci	<MDAE	<MDAE	<MDAE	<MDAE
xenon-138	Ci	<MDAE	<MDAE	<MDAE	<MDAE
Others (specify)	Ci	<MDAE	<MDAE	<MDAE	<MDAE
	Ci	<MDAE	<MDAE	<MDAE	<MDAE
unidentified	Ci	<MDAE	<MDAE	<MDAE	<MDAE
Total for period	Ci	<MDAE	<MDAE	<MDAE	2.56 E-1

2. Iodines

iodine-131	Ci	<MDAE	8.01 E-6	<MDAE	<MDAE
iodine-133	Ci	<MDAE	<MDAE	<MDAE	<MDAE
iodine-135	Ci	<MDAE	<MDAE	<MDAE	<MDAE
Total for period	Ci	<MDAE	8.01 E-6	<MDAE	<MDAE

3. Particulates

strontium-89	Ci	2.65 E-7	<MDAE	<MDAE	<MDAE
strontium-90	Ci	2.48 E-7	<MDAE	<MDAE	<MDAE
cesium-134	Ci	1.15 E-5	9.29 E-5	<MDAE	<MDAE
cesium-137	Ci	2.81 E-5	1.08 E-4	<MDAE	<MDAE
barium-lanthanum-140	Ci	<MDAE	<MDAE	<MDAE	<MDAE
Others (specify) Co58	Ci	<MDAE	9.08 E-5	<MDAE	<MDAE
Ru103	Ci	<MDAE	5.74 E-5	<MDAE	<MDAE
	Ci	<MDAE	<MDAE	<MDAE	<MDAE
unidentified	Ci	<MDAE	<MDAE	<MDAE	<MDAE

TABLE 2A

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (YEAR)

LIQUID EFFLUENTS—SUMMATION OF ALL RELEASES

TMI-UNIT 2 - 1978

	Unit	Quarter 1st	Quarter 2nd	Est. Total Error, %
A. Fission and activation products				
1. Total release (not including tritium, gases, alpha)	Ci	<MDE	308 E-2	2.5 E 1
2. Average diluted concentration during period	μCi/ml	0.0 E 0	132 E-9	
3. Percent of applicable limit	%	0.0 E 0	308 E-1	
B. Tritium				
1. Total release	Ci	<MDE	101 E 0	2.5 E 1
2. Average diluted concentration during period	μCi/ml	0.00 E 0	432 E-8	
3. Percent of applicable limit	%	0.00 E 0	N/A E	
C. Dissolved and entrained gases				
1. Total release	Ci	<MDE	617 E-3	2.5 E 1
2. Average diluted concentration during period	μCi/ml	0.00 E 0	264 E-10	
3. Percent of applicable limit	%	0.00 E 0	N/A E	
D. Gross alpha radioactivity				
1. Total release	Ci	<MDE	<MDE	2.5 E 1
E. Volume of waste released (prior to dilution)				
	liters	0.00 E 0	2192 E 6	1.0 E 1
F. Volume of dilution water used during period				
	liters	1.94 E 10	2341 E 10	1.0 E 1

A.3. Technical Specification Limit:

2.5 Ci - based on maximum release under normal operating conditions. (30 day notification limit.)

TABLE 28

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT (YEAR)

TMI-Unit 2 - 1978

LIQUID EFFLUENTS

(None)
CONTINUOUS MODE

BATCH MODE

A. Fission and Activation Products

Nuclides Released	Unit	Quarter 1st	Quarter 2nd	Quarter 1st	Quarter 2nd
strontium-89	Ci	< MDAE	< MDAE	< MDAE	< MDAE
strontium-90	Ci	< MDAE	< MDAE	< MDAE	< MDAE
cesium-134	Ci	< MDAE	< MDAE	< MDAE	9.167E-4
cesium-137	Ci	< MDAE	< MDAE	< MDAE	1.507E-3
iodine-131	Ci	< MDAE	< MDAE	< MDAE	< MDAE
cobalt-58	Ci	< MDAE	< MDAE	< MDAE	1.331E-2
cobalt-60	Ci	< MDAE	< MDAE	< MDAE	6.003E-4
iron-59	Ci	< MDAE	< MDAE	< MDAE	< MDAE
zinc-65	Ci	< MDAE	< MDAE	< MDAE	< MDAE
manganese-54	Ci	< MDAE	< MDAE	< MDAE	4.422E-4
chromium-51	Ci	< MDAE	< MDAE	< MDAE	4.065E-5
zirconium-niobium-95	Ci	< MDAE	< MDAE	< MDAE	7.630E-5
molybdenum-99	Ci	< MDAE	< MDAE	< MDAE	4.886E-4
technetium-99m	Ci	< MDAE	< MDAE	< MDAE	< MDAE
barium-lanthanum-140	Ci	< MDAE	< MDAE	< MDAE	< MDAE
cerium-141	Ci	< MDAE	< MDAE	< MDAE	< MDAE
Other (specify)	Na24	Ci	< MDAE	< MDAE	< MDAE
	Mn56	Ci	< MDAE	< MDAE	< MDAE
	Zr97	Ci	< MDAE	< MDAE	< MDAE
	W187	Ci	< MDAE	< MDAE	< MDAE
		Ci	< MDAE	< MDAE	< MDAE
unidentified		Ci	< MDAE	< MDAE	< MDAE
Total for period (above)	Ci	< MDAE	< MDAE	< MDAE	3.075E-2
xenon-133	Ci	< MDAE	< MDAE	< MDAE	2.210E-3
xenon-135	Ci	< MDAE	< MDAE	< MDAE	3.946E-4
Ar41	Ci	< MDAE	< MDAE	< MDAE	3.564E-3

B.