

ENVIRON

Docket File

OCT 25 1972

Docket Nos. 50-289 & 50-320

Daniel Muller, Assistant Director for Environmental Projects, L

REVISION TO SOURCE TERM AND SYSTEM DIAGRAMS - THREE MILE ISLAND, UNITS 1 & 2

Plant Name: Three Mile Island, Units 1 & 2
Licensing Stage: OL & Post CP
Docket Numbers: 50-289/320
Responsible Branch: Environmental Projects Branch No. 3
Project Leader: W. Regan
Description of Response: Not applicable
Review Status: Complete

Enclosed are revised glossy prints for figures 10 and 12 in the Draft Environmental Statement (DES) which are based on comments 3 & 4 contained in the applicant's letter to you dated August 28, 1972. The source terms have been revised to account for changes in treatment of liquid and gaseous waste and are enclosed. Also, the first paragraph of the "Liquid Wastes" section on page III-17 should be revised to read as follows":

"All equipment relevant to the liquid waste processing system is duplicated in the two units except the miscellaneous waste evaporator which is located in Unit 1 and shared by Unit 2. A notable difference between the two units is the method of condensate demineralization. Unit 1 uses Powdex; whereas, Unit 2 uses deep-bed demineralizers. Due to the constraints on waste processing in the miscellaneous waste subsystem, we assumed in our evaluation that 10% of the deep-bed regenerant solution and 100% of the Powdex sludge water will be released to the environment without treatment."

Original signed by:

R. L. Tedesco

R. L. Tedesco, Assistant Director for Containment Safety Directorate of Licensing

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Enclosures: As stated

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cc: see next page

OFFICE ▶
SURNAME ▶
DATE ▶

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Daniel R. Muller

- 2 -

cc: w/o enclosures
A. Cisbusse
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S. Hanauer
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R. Smith

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Table 4
 ANTICIPATED ANNUAL RELEASE OF RADIOACTIVE NUCLIDES IN
 GASEOUS EFFLUENT FROM THREE MILE ISLAND UNIT 1

Discharge Rate (Ci/yr)

<u>Isotope</u>	<u>Containment Purge</u>	<u>Gas Processing System</u>	<u>Steam Generator Leak</u>	<u>Auxiliary Building Leak</u>	<u>Total</u>
Kr-83m	-	-	1	1	2
Kr-85m	-	-	5	5	10
Kr-85	20	665	10	10	705
Kr-87	-	-	2	3	5
Kr-88	-	-	9	9	18
Xe-131m	2	53	6	5	66
Xe-133m	-	-	10	10	20
Xe-133	140	890	860	850	2740
Xe-135	-	-	15	15	30
Xe-138	-	-	20	20	40
I-131	.04	-	.01	.08	.13
I-133	-	-	.01	.08	.09

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Table 5
 ANTICIPATED ANNUAL RELEASE OF RADIOACTIVE NUCLIDES IN
 GASEOUS EFFLUENT FROM THREE MILE ISLAND UNIT 2

Discharge Rate (Ci/yr)

<u>Isotope</u>	<u>Containment Purge</u>	<u>Gas Processing System</u>	<u>Steam Generator Leak</u>	<u>Auxiliary Building Leak</u>	<u>Total</u>
Kr-83m	-	-	1	1	2
Kr-85m	-	-	5	5	10
Kr-85	20	725	10	10	770
Kr-87	-	-	3	3	6
Kr-88	-	-	9	10	19
Xe-131m	2	60	6	6	74
Xe-133m	-	-	1	1	2
Xe-133	160	970	940	930	3000
Xe-135	-	-	16	16	32
Xe-138	-	-	2	2	4
I-131	.04	-	-	.08	.12
I-133	-	-	-	.09	.09

Table 6
 ANTICIPATED ANNUAL RELEASE OF RADIOACTIVE MATERIAL
 IN THE LIQUID EFFLUENT FROM THREE MILE ISLAND UNIT 1

<u>Nuclide</u>	<u>Curies/yr</u>
Rb-86	0.00055
Sr-89	0.00044
Y-90	0.00005
Y-91	0.0099
Zr-95	0.00007
Nb-95	0.00007
Mo-99	0.037
Tc-99m	0.037
Ru-103	0.00005
Rh-103m	0.00005
Sb-124	0.00005
Te-125m	0.00003
Te-127m	0.00032
Te-127	0.00035
Te-129m	0.0016
Te-129	0.0010
Te-131m	0.00074
Te-131	0.00014
Te-132	0.019
I-130	0.0013
I-131	1.8
I-132	0.020
I-133	0.21
I-135	0.025
Cs-134	0.21
Cs-136	0.083
Cs-137	0.17
Ba-137m	0.16
Ba-140	0.00048
La-140	0.00042
Ce-141	0.00007
Ce-144	0.00005
Pr-143	0.00007
Pr-144	0.00005
Nd-147	0.00002
Na-24	0.00007
P-32	0.00007
Cr-51	0.0011
Fe-55	0.0010
Fe-59	0.0006
Cc-58	0.0097
Co-60	0.0012
Ni-63	0.00009
W-185	0.00005
W-187	0.00058
Np-239	0.00035

TOTAL ~3.0

Tritium-1,000 Ci/yr

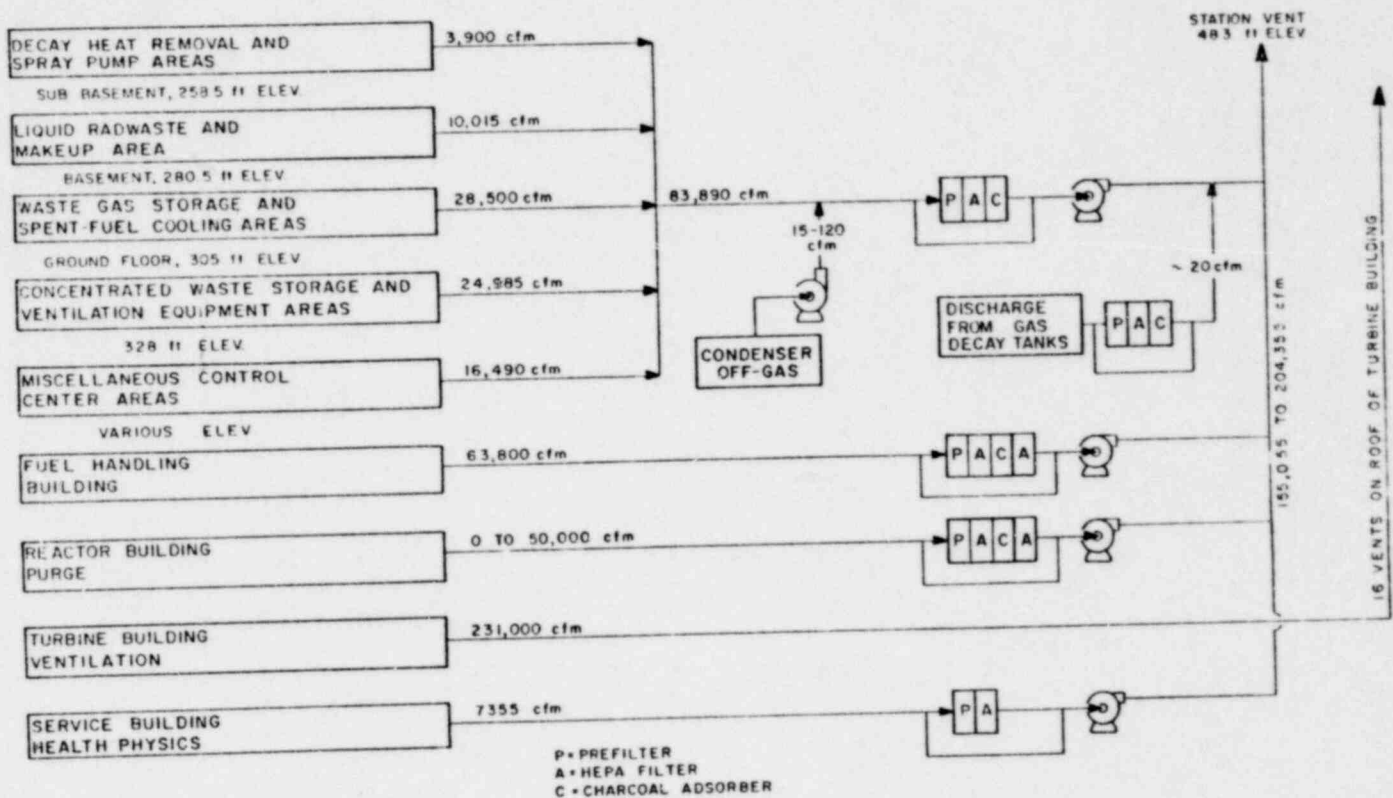
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Table 7
 ANTICIPATED ANNUAL RELEASE OF RADIOACTIVE MATERIAL
 IN LIQUID EFFLUENTS FROM THREE MILE ISLAND UNIT 2

<u>Nuclide</u>	<u>Ci/yr</u>	<u>Nuclide</u>	<u>Ci/yr</u>
Rb-86	.0012	Pm-147	.000054
Sr-89	.0041	Na-24	.000089
Sr-90	.00012	P-32	.00048
Sr-91	.000018	Cr-51	.0088
Y-90	.000072	Mn-54	.000036
Y-91	.0082	Fe-55	.011
Zr-95	.00072	Fe-59	.0054
Nb-95	.00080	Co-58	.095
Mo-99	.032	Co-60	.013
Tc-99m	.030	Ni-63	.011
Ru-103	.00048	Zn-65	.000054
Ru-106	.00014	W-185	.00045
Rh-103m	.00048	W-187	.00082
Rh-106	.00014	Np-239	.00075
Sb-124	.00036		
Sb-125	.000036	TOTAL ~ 5.0	
Te-125m	.00034		
Te-127m	.0036	Tritium 1,000 Ci/yr	
Te-127	.0034		
Te-129m	.014		
Te-129	.0088		
Te-131m	.0012		
Te-131	.00021		
Te-132	.050		
I-130	.0013		
I-131	2.7		
I-132	.052		
I-133	.20		
I-135	.021		
Cs-134	.54		
Cs-136	.15		
Cs-137	.41		
Ba-137m	.39		
Ba-140	.0030		
La-140	.0032		
Ce-141	.00066		
Ce-143	.00002		
Ce-144	.00045		
Pr-143	.00039		
Pr-144	.00045		
Nd-147	.00014		

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VENTILATION SYSTEM, THREE MILE ISLAND NUCLEAR STATION - UNIT 2

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