

EFFLUENT AND WASTE DISPOSAL SEMI ANNUAL REPORT
 July 1, 1980 - December 31, 1980
 SUPPLEMENTAL INFORMATION

FACILITY TMI-UNIT-1

LICENSEE DPR-50/50-289

1. Regulatory Limits

- a. Fission and activation gases:
- b. Iodines:
- c. Particulates, half-lives > 8 days: Environmental Tech Specs,
Article 2.3
- d. Liquid effluents:

2. Maximum Permissible Concentrations

Provide the MPCs used in determining allowable release rates or concentrations.

- a. Fission and activation gases:
- b. Iodines:
- c. Particulates, half-lives 8 days: 10 CFR, Part 20, Appendix B
- d. Liquid effluents:

3. Average Energy

Provide the average energy (\bar{E}) of the radionuclide mixture in releases of fission and activation gases, if applicable N/A

4. Measurements and Approximations of Total Radioactivity

Provide the methods used to measure or approximate the total radioactivity in effluents and the methods used to determine radionuclide composition.

- a. Fission and activation gases: Ge(Li) Spectrometry , Liquid Scintillation
- b. Iodines: Ge(Li) Spectrometry
- c. Particulates: Ge(Li) Spectrometry, Gas Flow Proportional
- d. Liquid effluents: Ge(Li) Spectrometry, Liquid Scintillation

5. Batch Releases

Provide the following information relating to batch releases of radioactive materials in liquid and gaseous effluents.

A. Liquid	3rd Quarter	4th Quarter
1. Number of batch releases:	32	18
2. Total time period for batch release:	18,704 min.	11,555
3. Maximum time period for a batch release:	1,905min.	1205
4. Average time period for batch releases:	585min.	642
5. Minimum time period for a batch release:	158min.	185
6. Average stream flow during periods of release of effluent into flowing stream:	4.23E5 cfm	5.77E5

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July 1, 1980 - December 31, 1980

5. Batch Releases (cont.)	<u>3rd Quarter</u>	<u>4th Quarter</u>
B. Gaseous		
1. Number of batch releases:	4	6
2. Total time period for batch releases:	3820min.	3180 min
3. Maximum time period for a batch release:	2060min.	640 min
4. Average time period for batch release:	955min.	530 min
5. Minimum time period for a batch release:	550min.	240 min
6. Abnormal Releases		
A. Liquid		
1. Number of releases:	None	
2. Total activity released:	N/A	
B. Gaseous		
1. Number of releases:	None	
2. Total activity released:	N/A	

TABLE 1A
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

	UNIT I	3rd QUARTER 1980	4th QUARTER 1980	EST. TOTAL ERROR, %
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A. Fission & activation gases

1. Total release	Ci	<LLD	< LLD	2.5E1
2. Average release rate for period	μCi/sec.	N/A	N/A	Tech. Spec. Limit =1.9E4 m ³ /sec =5.7E3μCi/sec for 85 Kr
3. Percent of Tech Spec limit	%	N/A	N/A	

B. Iodines

1. Total Iodine-131	Ci	<LLD	<LLD	2.5E1
2. Average release rate for period	μCi/sec.	N/A	N/A	Tech. Spec. Limit =0.05μCi/sec
3. Percent of Tech Spec limit	%	N/A	N/A	

C. Particulates

1. Particulates with half-lives > 8 Days	Ci	7.06E-6	3.13E-5	2.5E1
2. Average release rate for period	μCi/sec.	8.88E-7	3.93E-6	Tech. Spec. Limit =0.05μCi/sec
3. Percent of Tech Spec limit	%	1.78E-3	7.87E-3	
4. Gross alpha radioactivity	Ci	5.98E-6	2.73E-7	

D. Tritium

1. Total release	Ci	9.45E-5	4.07E-5	2.5E1
2. Average release rate for period	μCi/sec.	1.19E-5	5.17E-6	Tech. Spec. Limit =1.9E4 m ³ /sec =3.8E3μCi/sec for ³ H.
3. Percent of Tech Spec limit	%	3.13E-7	1.35E-7	

NOTE: See Table 4 for typical LLD values.

TABLE 1C
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
GASEOUS EFFLUENTS-GROUND LEVEL RELEASE

Nuclides Released	UNIT I	Continuous Mode		Batch Mode	
		3rd 1980 QUARTER	4th 1980 QUARTER	3rd 1980 QUARTER	4th 1980 QUARTER

1. Fission gases

krypton-85	Ci	<LLD	<LLD	<LLD	<LLD
krypton-85m	Ci	<LLD	<LLD	<LLD	<LLD
krypton-87	Ci	<LLD	<LLD	<LLD	<LLD
krypton-88	Ci	<LLD	<LLD	<LLD	<LLD
xenon-133	Ci	<LLD	<LLD	<LLD	<LLD
xenon-135	Ci	<LLD	<LLD	<LLD	<LLD
xenon-135m	Ci	<LLD	<LLD	<LLD	<LLD
xenon-138	Ci	<LLD	<LLD	<LLD	<LLD
Others (specify)	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
Unidentified	Ci				
Total for period	Ci	N/A	N/A	N/A	N/A

2. Iodines

iodine-131	Ci	<LLD	<LLD	<LLD	<LLD
iodine-133	Ci	<LLD	<LLD	<LLD	<LLD
iodine-135	Ci	<LLD	<LLD	<LLD	<LLD
Total for period	Ci	N/A	N/A	N/A	N/A

NOTE: See Table 4 for typical LLD values.

TABLE 1 C (cont.)
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
GASEOUS EFFLUENTS-GROUND LEVEL RELEASES

Nuclides Released	UNIT I	Continuous Mode		Batch Mode	
		3rd 1980 QUARTER	4th 1980 QUARTER	3rd 1980 QUARTER	4th 1980 QUARTER

3. Particulates

strontium-89	Ci	<LLD	<LLD	<LLD	<LLD
strontium-90	Ci	1.08E-6	1.81E-7	<LLD	<LLD
cesium-134	Ci	<LLD	<LLD	<LLD	<LLD
cesium-137	Ci	<LLD	2.58E-5	<LLD	4.14E-7
barium-lanthanum-140	Ci	<LLD	<LLD	<LLD	<LLD
Others (specify)					
Cerium-144		<LLD	4.88E-6	<LLD	<LLD
Unidentified Gross β, γ		5.98E-6	<LLD	<LLD	<LLD

NOTE: See Table 4 for typical LLD values.

TABLE 2A
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

Tech Spec Limits = 10CFR20, Appendix B, Table II, Column 2

	UNIT	3rd 1980 QUARTER	4th 1980 QUARTER	EST. TOTAL ERROR %
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A. Fission and activation products

1. Total releases (not including tritium, gases, alpha)	Ci	2.42E-2	2.19E-2	2.5E1
2. Average diluted concentration during period	μCi/ml	1.68E-9	1.59E-9	
3. Percent of applicable limit	%	1.35E-2	2.89E-2	

B. Tritium

1. Total release	Ci	2.91E0	2.34E0	2.5E1
2. Average diluted concentration during period	μCi/ml	2.02E-7	1.70E-7	
3. Percent of applicable limit	%	6.74E-3	5.66E-3	

C. Dissolved and entrained gases

1. Total release	Ci	<LLD	<LLD	2.5E1
2. Average diluted concentration during period	μCi/ml	N/A	N/A	
3. Percent of applicable limit	%	N/A	N/A	

D. Gross alpha radioactivity

1. Total release	Ci	1.89E-2	<LLD	2.5E1
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E. Volume of waste released (prior to dilution)	liters	7.33E5	4.28E5	1.0E1
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F. Volume of dilution water used during period	liters	1.44E10	1.38E10	1.0E1
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NOTE: See Table 5 for typical LLD values.

TABLE 2B
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
LIQUID EFFLUENTS

Nuclides Released	UNIT I	Continuous Mode		Batch Mode	
		3rd 1980 QUARTER	4th 1980 QUARTER	3rd 1980 QUARTER	4th 1980 QUARTER
strontium-89	Ci	<LLD	<LLD	<LLD	<LLD
strontium-90	Ci	<LLD	<LLD	1.76E-4	3.91E-4
cesium-134	Ci	<LLD	<LLD	5.00E-3	3.22E-3
cesium-137	Ci	<LLD	<LLD	1.17E-2	1.41E-2
iodine-131	Ci	<LLD	<LLD	<LLD	<LLD
cobalt-58	Ci	<LLD	<LLD	2.91E-5	7.25E-6
cobalt-60	Ci	<LLD	<LLD	3.39E-3	1.78E-3
iron-59	Ci	<LLD	<LLD	<LLD	<LLD
zinc-65	Ci	<LLD	<LLD	<LLD	<LLD
managanese-54	Ci	<LLD	<LLD	2.57E-4	6.37E-5
chromium-51	Ci	<LLD	<LLD	<LLD	<LLD
zirconium-niobium-95	Ci	<LLD	<LLD	<LLD	<LLD
molybdenum-99	Ci	<LLD	<LLD	<LLD	<LLD
technetium-99m	Ci	<LLD	<LLD	<LLD	<LLD
barium-lanthanum-140	Ci	<LLD	<LLD	<LLD	<LLD
cerium-141	Ci	<LLD	<LLD	<LLD	<LLD
Other (specify)	Ci				
silver-110m	Ci	<LLD	<LLD	2.92E-3	1.08E-3
Antimony-125	Ci	<LLD	<LLD	8.96E-4	7.85E-4
Unidentified					
Total for period	Ci	<LLD	<LLD	2.42E-2	2.14E-2
xenon-133	Ci	<LLD	<LLD	<LLD	<LLD
xenon-135	Ci	<LLD	<LLD	<LLD	<LLD

NOTE: See Table 5 for typical LLD values.

TABLE 3A
 EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
 SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
 July 1, 1980 thru December 31, 1980 for Unit I

A. Solid waste shipped off-site for burial or disposal (not irradiated fuel)

1. Type of waste	UNIT I	6 month period	EST. TOTAL ERROR %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m ³ Ci	None	
b. Dry compressible waste, contaminated equipment, etc.	m ³ Ci	265.45 1,192	2.5E1
c. Irradiated components, control rods, etc.	m ³ Ci	None	
d. Other (describe)	m ³ Ci	None	

2. Estimate of major nuclide composition (by type of waste)			
a.		%	
		%	
		%	
		%	
b.	Cs-137	%	33
	Ba-137m	%	31
	Cs-134	%	19
	Co-60	%	7
		%	
c.		%	
		%	
		%	
		%	
		%	
		%	
d.		%	
		%	
		%	
		%	
		%	

3. Solid Waste Disposition	Mode of Transportation	Destination
Number of Shipments		
7	Truck	Barnwell, S.C.
1	Truck	Richland, Washington

B. Irradiated Fuel Shipments (Disposition)

Number of Shipments	Mode of Transportation	Destination
NONE		

TABLE 4

TYPICAL GASEOUS EFFLUENT LLD (Lower Limit of Detection) VALUES

ASSUMPTIONS:	Sample Volume (Marinelli)	1640 cc
	Sample Volume (Particulate and Charcoal Filters)	5.7E8 cc
	Sampling Rate	2 cfm or 5.66E4 cc/min
	Sampling Time	1 week or 1E4 min
	Sample Volume (Tritium bubbled thru water)	7.56E5 cc
	Sampling Rate	75 cc/min
	Sampling Time	1E4 min
	Sample Counting Time: α & ^3H = 20min; β = 10min; γ = 1000 min	
	Sample Counters: γ emitters	25% Ce(Li)
	α or β	Proportional Counter
	^3H	Liquid Scintillation Counter

<u>ISOTOPE</u>		<u>$\mu\text{Ci/cc LLD}$</u>	<u>TYPE SAMPLE</u>
Gross Alpha	α	1E-15	Particulate Filter Paper
Gross Beta	β	1E-14	"
Tritium	^3H	1E-6	Air bubbled thru water by a fritted disc or Fisher Milligan gas washer
Krypton-85	^{85}Kr	2E-5	Marinelli
Krypton-85m	$^{85\text{m}}\text{Kr}$	4E-8	"
Krypton-87	^{87}Kr	4E-8	"
Krypton-88	^{88}Kr	2E-7	"
Xenon-133	^{133}Xe	1E-7	"
Xenon-133m	$^{133\text{m}}\text{Xe}$	6E-8	"
Xenon-135	^{135}Xe	3E-8	"
Xenon-135m	$^{135\text{m}}\text{Xe}$	4E-7	"
Xenon-138	^{138}Xe	4E-7	"
Iodine-131	^{131}I	3E-8	"
Iodine-133	^{133}I	3E-8	"
Iodine-135	^{135}I	2E-7	"
Iodine-131	^{131}I	2E-14	Charcoal Filter
Iodine-133	^{133}I	1E-13	"
Iodine-135	^{135}I	1E-12	"
Manganese-54	^{54}Mn	2E-14	Particulate Filter Paper
Iron-59	^{59}Fe	2E-14	"
Cobalt-58	^{58}Co	2E-14	"
Cobalt-60	^{60}Co	2E-14	"
Zinc-65	^{65}Zn	5E-14	"
Strontium-89	^{89}Sr	2E-14	"
Strontium-90	^{90}Sr	2E-14	"
Molybdenum-99	^{99}Mo	7E-15	"
Ruthenium-103	^{103}Ru	1E-13	"
Silver-110m	$^{110\text{m}}\text{Ag}$	1E-13	"
Cesium-134	^{134}Cs	2E-14	"
Cesium-137	^{137}Cs	2E-14	"
Cerium-141	^{141}Ce	1E-14	"
Cerium-144	^{144}Ce	6E-14	"

TABLE 5

TYPICAL LIQUID EFFLUENT LLD (Lower Limit of Detection) VALUES

ASSUMPTIONS:(Except for Gross Alpha Gross Beta Tritium and analysis by Teledyne)		Sample volume = 1 liter = 1000 cc Sample counting time = 1000 sec Sample counted with a 25% Ge(Li) for Gamma Emitters	
ISOTOPE		$\mu\text{Ci/cc LLD}$	NOTES
Gross Alpha	α	1E-7	Counted with proportional counter
Gross Beta	β	6E-8	Counted with proportional counter
Tritium	^3H	1E-5	Counted with Liquid Scintillation counter
Krypton-85	^{85}Kr	6E-5	
Xenon-131m	$^{131\text{m}}\text{Xe}$	4E-6	
Xenon-133	^{133}Xe	4E-7	
Xenon-135	^{135}Xe	2E-7	
Chromium-51	^{51}Cr	1E-6	The LLD is also <3 times ^{58}Co LLD
Manganese-54	^{54}Mn	2E-7	
Cobalt-58	^{58}Co	2E-7	
Iron-59	^{59}Fe	4E-7	
Cobalt-60	^{60}Co	3E-7	
Zinc-65	^{65}Zn	4E-7	
Zirconium-95	^{95}Zr	3E-7	
Niobium-95	^{95}Nb	2E-7	
Molybdenum-99	^{99}Mo	8E-8	
Technetium-99m	$^{99\text{m}}\text{Tc}$	1E-7	
Silver-110m	$^{110\text{m}}\text{Ag}$	2E-7	
Antimony-125	^{125}Sb	4E-7	
Cesium-134	^{134}Cs	2E-7	
Cesium-136	^{136}Cs	2E-7	
Cesium-137	^{137}Cs	2E-7	
Barium-140	^{140}Ba	4E-7	
Lanthanum-140	^{140}La	4E-7	
Cerium-141	^{141}Ce	3E-7	
Cerium-144	^{144}Ce	7E-7	
Iodine-131	^{131}I	2E-7	
Iodine-133	^{133}I	2E-7	
Phosphorus-32	^{32}P	1E-6	Liquid samples are not currently analyzed for ^{32}P , ^{55}Fe , ^{89}Sr , and ^{90}Sr at Three Mile Island. They are sent to Teledyne for analysis, therefore these are Teledyne LLD values.
Iron-55	^{55}Fe	5E-8	
Strontium-89	^{89}Sr	5E-8	
Strontium-90	^{90}Sr	5E-9	

Attachment 1
 Three Mile Island Joint Frequency Tables
 Third Quarter 1980

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD* 80 7 1 1-80 93024
 STABILITY CLASS: A
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A

WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	12	10	3	2	0	0	27
NNE	8	1	0	0	0	0	9
NE	3	1	0	0	0	0	4
ENE	2	4	0	0	0	0	6
E	5	7	3	0	0	0	15
ESE	9	17	1	0	0	0	27
SE	10	8	6	0	0	0	24
SSE	4	13	4	0	0	0	21
S	9	9	4	0	0	0	22
SSW	13	42	10	0	0	0	65
SW	16	43	5	0	0	0	64
WSW	24	23	3	0	0	0	50
W	18	27	8	1	0	0	54
WNW	22	51	16	0	0	0	89
NW	26	46	24	7	0	0	103
NNW	22	36	17	20	0	0	95
VARIABLE	51	0	0	0	0	0	51

TOTAL 675
 PERIODS OF CALM(HOURS): 0
 HOURS OF MISSING DATA: 242

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD* 80 7 1 1-80 93024
 STABILITY CLASS: B
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A

WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	0	1	0	0	0	0	1
NNE	0	1	0	0	0	0	1
NE	1	0	0	0	0	0	1
ENE	1	1	0	0	0	0	2
E	0	2	0	0	0	0	2
ESE	0	2	0	0	0	0	2
SE	0	2	3	0	0	0	5
SSE	1	1	0	0	0	0	2
S	3	2	2	0	0	0	7
SSW	4	2	1	0	0	0	7
SW	0	0	0	0	0	0	0
WSW	1	2	0	0	0	0	3
W	1	2	0	0	0	0	3
WNW	0	0	0	0	0	0	0
NW	1	0	1	0	0	0	2
NNW	0	1	1	1	0	0	3
VARIABLE	2	0	0	0	0	0	2

TOTAL 41
 PERIODS OF CALM(HOURS): 0
 HOURS OF MISSING DATA: 242

Attachment 1 (continued)

PERIOD OF RECORD*		80 7 1 1-80 93024		HOURS AT EACH WIND SPEED AND DIRECTION			
STABILITY CLASS:		C		D			
ELEVATION:	SPEED:	DIR:	LAPSE:	DIR:	LAPSE:		
100A		100A		100A			
WIND SPEED(MPH)		WIND SPEED(MPH)		WIND SPEED(MPH)			
WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	1	0	0	0	0	0	1
NE	0	0	0	0	0	0	0
ENE	0	3	0	0	0	0	3
E	0	0	0	0	0	0	0
ESE	0	4	0	0	0	0	4
SE	1	1	0	0	0	0	2
SSE	0	1	0	0	0	0	1
S	1	3	0	0	0	0	4
SSU	3	2	0	0	0	0	5
SU	0	1	0	0	0	0	1
USU	1	2	1	0	0	0	4
U	0	0	1	0	0	0	1
UNU	0	1	0	0	0	0	1
NU	0	0	1	0	0	0	1
NNU	1	0	0	0	0	0	1
VARIABLE	2	0	0	0	0	0	2
TOTAL	29	274	0	0	0	0	29
PERIODS OF CALM(HOURS):							0
HOURS OF MISSING DATA:							242

Attachment 1 (continued)

HOURS AT EACH WIND SPEED AND DIRECTION		HOURS AT EACH WIND SPEED AND DIRECTION					
PERIOD OF RECORD*	80 7 1 1-80 93024	PERIOD OF RECORD*	80 7 1 1-80 93024				
STABILITY CLASS:	E	STABILITY CLASS:	F				
ELEVATION: SPEED:SP1000 DIRECTION:DI1000 LAPSE:DT1500	WIND SPEED(MPH)	ELEVATION: SPEED:SP1000 DIRECTION:DI1000 LAPSE:DT1500	WIND SPEED(MPH)				
WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	13	18	0	0	1	0	41
NNE	13	2	0	0	0	0	15
NE	8	4	0	0	0	0	12
ENE	16	9	0	0	0	0	25
E	21	8	0	0	0	0	29
ESE	19	12	0	0	0	0	31
SE	18	13	1	0	0	0	32
SSE	22	8	0	0	0	0	30
S	16	16	2	0	0	0	34
SSW	27	14	3	0	0	0	44
SU	23	16	2	0	0	0	41
USW	22	15	1	0	0	0	38
U	21	18	1	1	0	0	41
UNW	13	20	7	1	0	0	41
NU	9	18	11	1	1	0	40
NNW	14	6	3	3	0	0	26
VARIABLE	42	0	0	0	0	0	-
TOTAL	529						348
PERIODS OF CALM(HOURS):	9						3
HOURS OF MISSING DATA:	242						242

Attachment I (continued)

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD* 80 7 1 1-80 93024

STABILITY CLASS: C

ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
WIND SPEED(MPH)

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD* 80 7 1 1-80 93024

STABILITY CLASS: ALL

ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	3	1	0	0	0	0	4
NNE	2	0	0	0	0	0	2
NE	1	0	0	0	0	0	1
ENE	3	0	0	0	0	0	3
E	2	2	0	0	0	0	4
ESE	7	1	0	0	0	0	8
SE	2	1	0	0	0	0	3
SSE	8	0	0	0	0	0	8
S	12	1	0	0	0	0	13
SSW	3	0	0	0	0	0	3
SU	4	0	0	0	0	0	4
USU	5	0	0	0	0	0	5
U	1	1	0	0	0	0	3
UNU	7	1	0	0	0	0	8
NU	5	0	6	0	0	0	5
NNU	4	1	0	0	0	0	5
VARIABLE	11	0	0	0	0	0	11
TOTAL	79	13	6	0	0	0	98
PERIODS OF CALM(HOURS):	1	1	0	0	0	0	2
HOURS OF MISSING DATA:	242	242	0	0	0	0	484

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	46	37	3	2	1	0	98
NNE	38	7	1	0	0	0	46
NE	21	10	0	0	0	0	31
ENE	43	24	0	0	0	0	67
E	59	27	5	0	0	0	91
ESE	63	54	3	0	0	0	120
SE	57	35	26	0	0	0	118
SSE	60	41	12	0	0	0	114
S	80	52	12	0	0	0	144
SSW	79	79	17	0	0	0	177
SU	67	70	10	0	0	0	147
USU	80	49	6	0	0	0	135
U	74	68	13	2	0	0	158
UNU	61	89	31	1	0	0	182
NU	50	79	39	8	1	0	177
NNU	53	60	24	24	0	0	161
VARIABLE	176	0	0	0	0	0	176
TOTAL	1066	13	6	0	0	0	1085
PERIODS OF CALM(HOURS):	1	1	0	0	0	0	2
HOURS OF MISSING DATA:	242	242	0	0	0	0	484

Attachment 2
 Three Mile Island Unit 1 Joint Frequency Tables
 For Specific Dates During the Third Quarter 1980

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD- 0 0 0 0- 0 0 0 0

STABILITY CLASS: A

ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	7	6	3	2	0	0	18
NNE	4	0	0	0	0	0	4
NE	2	1	0	0	0	0	3
ENE	2	4	0	0	0	0	6
E	4	7	3	0	0	0	14
ESE	7	16	1	0	0	0	24
SE	8	7	6	0	0	0	21
SSE	4	10	4	0	0	0	18
S	6	8	2	0	0	0	16
SSW	12	28	5	0	0	0	45
SU	11	29	3	0	0	0	43
USU	29	16	3	0	0	0	39
W	14	19	6	1	0	0	40
WNW	17	37	14	0	0	0	68
NW	22	30	16	7	0	0	75
NNW	16	24	13	10	0	0	63
VARIABLE	33	0	0	0	0	0	33
TOTAL	497						
PERIODS OF CALM(HOURS):							0
HOURS OF MISSING DATA:							227

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD- 0 0 0 0- 0 0 0 0

STABILITY CLASS: B

ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	0	1	0	0	0	0	1
NNE	0	0	0	0	0	0	0
NE	1	0	0	0	0	0	1
ENE	1	1	0	0	0	0	2
E	0	2	0	0	0	0	2
ESE	0	2	0	0	0	0	2
SE	0	2	3	0	0	0	5
SSE	1	1	0	0	0	0	2
S	3	2	2	0	0	0	7
SSW	4	1	1	0	0	0	6
SU	0	0	0	0	0	0	0
USU	0	2	0	0	0	0	2
W	1	2	0	0	0	0	3
WNW	0	0	0	0	0	0	0
NW	1	0	1	0	0	0	2
NNW	0	1	0	0	0	0	1
VARIABLE	2	0	0	0	0	0	2
TOTAL	36						
PERIODS OF CALM(HOURS):							0
HOURS OF MISSING DATA:							227

Attachment 2 (continued)

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD* 0 0 0 0- 0 0 0 0

STABILITY CLASS: C

ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
WIND SPEED(MPH)

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD* 0 0 0 0- 0 0 0 0

STABILITY CLASS: D

ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	0	3	0	0	0	0	3
E	0	0	0	0	0	0	0
ESE	0	3	0	0	0	0	3
SE	1	1	0	0	0	0	2
SSE	0	1	0	0	0	0	1
S	1	3	0	0	0	0	4
SSW	2	2	0	0	0	0	4
SU	0	1	0	0	0	0	1
WSU	1	1	0	0	0	0	2
U	0	0	1	0	0	0	1
UNW	0	0	0	0	0	0	0
NU	0	0	1	0	0	0	1
NW	0	0	0	0	0	0	0
VARIABLE	0	0	0	0	0	0	0
TOTAL	22	22	22	22	22	22	22
PERIODS OF CALM(HOURS):	0	0	0	0	0	0	0
HOURS OF MISSING DATA:	227	227	227	227	227	227	227

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	4	0	0	0	0	0	4
NNE	5	2	1	0	0	0	8
NE	3	4	0	0	0	0	7
ENE	8	5	0	0	0	0	13
E	14	7	2	0	0	0	23
ESE	8	12	2	0	0	0	22
SE	8	7	15	0	0	0	30
SSE	3	14	8	0	0	0	25
S	4	9	4	0	0	0	17
SSW	8	10	3	0	0	0	21
SU	10	8	0	0	0	0	18
WSU	7	3	1	0	0	0	11
U	4	2	0	0	0	0	6
UNW	3	4	2	0	0	0	9
NU	1	4	1	0	0	0	6
NW	0	3	2	0	0	0	5
VARIABLE	23	0	0	0	0	0	23
TOTAL	225	225	225	225	225	225	225
PERIODS OF CALM(HOURS):	0	0	0	0	0	0	0
HOURS OF MISSING DATA:	227	227	227	227	227	227	227

Attachment 2 (continued)

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 0 0 0 0- 0 0 0 0

STABILITY CLASS: E

ELEVATION: SPEED:SPI00A DIRECTION:DI100A LAPSE:DT150A
WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	10	11	0	0	0	0	21
NNE	10	6	0	0	0	0	16
NE	5	2	0	0	0	0	7
ENE	14	8	0	0	0	0	22
E	17	7	0	0	0	0	24
ESE	17	10	0	0	0	0	27
SE	16	10	1	0	0	0	27
SSE	15	3	0	0	0	0	18
S	14	6	2	0	0	0	22
SSW	20	9	2	0	0	0	31
SW	18	10	2	0	0	0	30
WSW	17	11	1	0	0	0	29
W	16	7	1	0	0	0	24
WNW	13	13	1	0	0	0	27
W	9	8	2	1	1	0	27
WNW	13	6	3	1	0	0	23
VARIABLE	32	0	0	0	0	0	32
TOTAL	369						
PERIODS OF CALM(HOURS):							0
HOURS OF MISSING DATA:							227

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 0 0 0 0- 0 0 0 0

STABILITY CLASS: F

ELEVATION: SPEED:SPI00A DIRECTION:DI100A LAPSE:DT150A
WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	10	2	0	0	0	0	12
NNE	3	0	0	0	0	0	3
NE	3	0	0	0	0	0	3
ENE	9	1	0	0	0	0	10
E	12	0	0	0	0	0	12
ESE	16	5	0	0	0	0	21
SE	13	1	0	0	0	0	14
SSE	20	1	0	0	0	0	21
S	30	8	0	0	0	0	38
SSW	16	1	0	0	0	0	17
SW	12	2	1	0	0	0	15
WSW	13	2	0	0	0	0	15
W	25	12	0	0	0	0	37
WNW	14	5	2	0	0	0	21
W	5	6	1	0	0	0	12
WNW	7	8	1	0	0	0	16
VARIABLE	28	0	0	0	0	0	28
TOTAL	279						
PERIODS OF CALM(HOURS):							3
HOURS OF MISSING DATA:							227

Attachment 2 (continued)

PERIOD OF RECORD*		HOURS AT EACH WIND SPEED AND DIRECTION					HOURS AT EACH WIND SPEED AND DIRECTION									
0 0 0 0- 0 0 0 0		1-3	3-4	8-12	13-18	19-24	>24	TOTAL	1-3	3-4	8-12	13-18	19-24	>24	TOTAL	
WIND DIRECTION	WIND SPEED(NPH)															
N		3	0	0	0	0	0	3	34	20	3	2	0	0	59	
NNE		1	0	0	0	0	0	1	23	2	1	0	0	0	26	
NE		1	0	0	0	0	0	1	15	7	0	0	0	0	22	
ENE		1	0	0	0	0	0	1	35	22	0	0	0	0	57	
E		2	1	0	0	0	0	3	49	24	5	0	0	0	78	
ESE		5	1	0	0	0	0	6	53	49	0	0	0	0	105	
SE		1	1	0	0	0	0	2	47	29	25	0	0	0	101	
SSE		7	0	0	0	0	0	7	50	30	12	0	0	0	93	
S		12	0	0	0	0	0	12	70	36	10	0	0	0	116	
SSW		2	0	0	0	0	0	2	64	51	11	0	0	0	128	
SW		4	0	0	0	0	0	4	55	50	6	0	0	0	111	
WSW		2	0	0	0	0	0	2	60	35	5	0	0	0	100	
W		1	1	0	0	0	0	3	61	43	8	1	0	0	114	
WNW		4	0	0	0	0	0	4	51	59	19	0	0	0	129	
W		2	0	0	0	0	0	2	40	48	28	8	1	0	125	
WNW		2	1	0	0	0	0	3	38	43	19	11	0	0	111	
VARIABLE		7	0	0	0	0	0	7	125	0	0	0	0	0	125	
TOTAL		56						1475						4		
PERIODS OF CALM(HOURS):		1						1475						4		
HOURS OF MISSING DATA:		227						227						227		

PERIOD OF RECORD* 0 0 0 0- 0 0 0 0

PERIOD OF RECORD* 0 0 0 0- 0 0 0 0

STABILITY CLASS: ALL

STABILITY CLASS: G

ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A WIND SPEED(MPH)

ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A WIND SPEED(NPH)

Attachment 2
 Three Mile Island Unit 2 Joint Frequency Tables
 For Specific Dates During the Third Quarter 1980

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD* 0 0 0 0- 0 0 0 0

STABILITY CLASS: A

ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A

WIND SPEED(MPH)

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD* 0 0 0 0- 0 0 0 0

STABILITY CLASS: A

ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A

WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	10	8	3	2	0	0	23
NNE	5	0	0	0	0	0	5
NE	2	1	0	0	0	0	3
ENE	2	4	0	0	0	0	6
E	5	7	3	0	0	0	15
ESE	7	16	1	0	0	0	24
SE	10	7	6	0	0	0	23
SSE	4	10	4	0	0	0	18
S	8	9	3	0	0	0	20
SSW	13	33	6	0	0	0	52
SU	15	31	3	0	0	1	49
USU	20	20	3	0	0	0	43
U	17	23	7	1	0	0	48
UNU	19	43	14	0	0	0	76
NU	24	35	16	7	0	0	82
NNU	19	32	15	20	0	0	86
VARIABLE	43	0	0	0	0	0	43
TOTAL	573						
PERIODS OF CALM(HOURS):							0
HOURS OF MISSING DATA:							230

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	0	1	0	0	0	0	1
NNE	0	1	0	0	0	0	1
NE	1	0	0	0	0	0	1
ENE	1	1	0	0	0	0	2
E	0	2	0	0	0	0	2
ESE	0	2	0	0	0	0	2
SE	0	2	3	0	0	0	5
SSE	1	1	0	0	0	0	2
S	0	2	2	0	0	0	4
SSW	4	1	1	0	0	0	6
SU	0	0	0	0	0	0	0
USU	1	1	0	0	0	0	2
U	1	2	0	0	0	0	3
UNU	0	0	0	0	0	0	0
NU	1	0	1	0	0	0	2
NNU	0	1	0	1	0	0	2
VARIABLE	2	0	0	0	0	0	2
TOTAL	38						
PERIODS OF CALM(HOURS):							0
HOURS OF MISSING DATA:							230

Attachment 3 (continued)

HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD: 0 0 0 0-0 0 0 0
 STABILITY CLASS: F
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED(MPH)

HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD: 0 0 0 0-0 0 0 0
 STABILITY CLASS: E
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	12	5	0	0	0	0	17
NNE	4	0	0	0	0	0	4
NE	3	0	0	0	0	0	3
ENE	9	1	0	0	0	0	10
E	14	0	0	0	0	0	14
ESE	16	6	0	0	0	0	22
SE	15	1	0	0	0	0	16
SSE	20	2	0	0	0	0	22
S	30	8	0	0	0	0	38
SSW	16	2	0	0	0	0	19
SW	12	2	1	0	0	0	15
WSW	15	3	0	0	0	0	18
W	27	13	0	0	0	0	40
WNW	15	8	3	0	0	0	26
NW	6	8	1	0	0	0	15
NNW	7	10	1	0	0	0	18
VARIABLE	33	0	0	0	0	0	33
TOTAL	298						2
PERIODS OF CALM(HOURS):							230
HOURS OF MISSING DATA:							

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	13	13	0	0	0	0	35
NNE	0	1	0	0	0	0	1
NE	5	3	0	0	0	0	8
ENE	14	8	0	0	0	0	22
E	18	7	0	0	0	0	25
ESE	17	11	0	0	0	0	28
SE	16	11	1	0	0	0	28
SSE	19	7	0	0	0	0	26
S	15	10	2	0	0	0	27
SSW	25	11	2	0	0	0	38
SW	20	15	2	0	0	0	37
WSW	20	12	1	0	0	0	33
W	20	15	1	1	0	0	37
WNW	13	18	5	1	0	0	37
NW	8	17	8	1	1	0	35
NNW	13	6	3	2	0	0	24
VARIABLE	35	0	0	0	0	0	35
TOTAL	450						9
PERIODS OF CALM(HOURS):							230
HOURS OF MISSING DATA:							

Attachment 3 (continued)

HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD* 0 0 0 0- 0 0 0 0
 STABILITY CLASS: ALL
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED(MPH)

HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD* 0 0 0 0- 0 0 0 0
 STABILITY CLASS: G
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	3	1	0	0	0	0	4
NNE	2	0	0	0	0	0	2
NE	1	0	0	0	0	0	1
ENE	1	0	0	0	0	0	1
E	2	1	0	0	0	0	3
ESE	5	1	0	0	0	0	6
SE	1	1	0	0	0	0	2
SSE	7	0	0	0	0	0	7
S	12	1	0	0	0	0	13
SSU	2	0	0	0	0	0	2
SU	4	0	0	0	0	0	4
USU	3	0	0	0	0	0	3
U	1	1	0	0	0	0	2
UNU	5	0	0	0	0	0	5
NU	3	0	0	0	0	0	3
MNU	3	1	0	0	0	0	4
VARIABLE	8	0	0	0	0	0	8
TOTAL	63						
PERIODS OF CALM(HOURS):	1						
HOURS OF MISSING DATA:	230						

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	43	28	3	2	0	0	85
NNE	26	5	1	0	0	0	32
NE	15	8	6	0	0	0	23
ENE	36	18	0	0	0	0	54
E	53	24	5	0	0	0	82
ESE	53	52	3	0	0	0	108
SE	53	30	25	0	0	0	108
SSE	54	36	12	0	0	0	103
S	74	42	11	0	0	0	127
SSU	70	64	12	0	0	0	147
SU	62	56	7	0	0	0	125
USU	67	41	5	0	0	0	113
U	70	58	9	2	0	0	140
UNU	55	75	24	1	0	0	155
NU	43	65	28	8	1	0	145
MNU	42	55	21	23	0	0	141
VARIABLE	144	0	0	0	0	0	144
TOTAL	1688						
PERIODS OF CALM(HOURS):	12						
HOURS OF MISSING DATA:	230						

Three Mile Island Joint Frequency Tables
Fourth Quarter 1980

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 8010 1 1-80123124

STABILITY CLASS: A

ELEVATION: SPEED:SPI00A DIRECTION:DI100A LAPSE:DT150A

WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	1	9	0	0	0	0	10
NNE	0	2	0	0	0	0	2
NE	0	0	0	0	0	0	0
ENE	0	2	0	0	0	0	2
E	1	2	0	0	0	0	3
ESE	2	1	4	0	0	0	7
SE	1	1	0	0	0	0	2
SSE	2	1	0	0	0	0	3
S	3	5	7	0	0	0	15
SSW	6	9	7	0	0	0	22
SW	0	4	9	1	0	0	14
WSW	3	7	6	1	0	0	17
W	1	4	14	4	2	1	26
WNW	2	7	21	18	3	0	51
W	4	17	28	13	14	0	76
WNW	2	18	13	6	1	0	40
VARIABLE	9	0	0	0	0	0	9
TOTAL	29	29	29	29	29	29	29
PERIODS OF CALM(HOURS):	0						
HOURS OF MISSING DATA:	118						

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: 8010 1 1-80123124

STABILITY CLASS: B

ELEVATION: SPEED:SPI00A DIRECTION:DI100A LAPSE:DT150A

WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	1	2	0	0	0	0	3
NNE	1	1	0	0	0	0	2
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	2	0	0	0	0	2
ESE	1	1	1	0	0	0	3
SE	0	1	1	0	0	0	2
SSE	0	2	0	0	0	0	2
S	0	1	1	0	0	0	2
SSW	0	1	0	0	0	0	1
SW	0	0	0	0	0	0	0
WSW	1	1	2	2	0	0	6
W	0	0	4	2	0	0	6
WNW	1	1	3	3	2	1	11
W	0	1	4	6	3	2	16
WNW	2	0	1	2	1	0	6
VARIABLE	3	0	0	0	0	0	3
TOTAL	62	62	62	62	62	62	62
PERIODS OF CALM(HOURS):	0						
HOURS OF MISSING DATA:	118						

Attachment 4 (continued)

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD- 8010 1 1-80123124

STABILITY CLASS: C

ELEVATION: S<EDISP100A DIRECTION:DI100A LAPSE:DT159A
WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	0	1	0	1	0	0	2
NNE	2	0	0	0	0	0	2
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	1	0	1	0	0	0	2
ESE	2	2	1	0	0	0	5
SE	1	2	1	0	0	0	4
SSE	1	0	2	0	0	0	3
S	0	1	2	0	0	0	3
SSW	1	3	0	0	0	0	4
SW	0	0	0	2	0	0	2
WSW	1	1	1	1	0	0	4
W	1	0	2	2	0	0	5
WNW	1	1	1	2	0	1	6
W	0	1	5	3	2	1	12
WNW	1	2	2	5	0	0	10
VARIABLE	4	0	0	0	0	0	4
TOTAL	64						
PERIODS OF CALM(HOURS):							0
HOURS OF MISSING DATA:							118

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD- 8010 1 1-80123124

STABILITY CLASS: D

ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT159A
WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	10	10	3	0	0	0	40
NNE	4	11	1	0	0	0	16
NE	12	13	0	1	0	0	26
ENE	8	16	4	3	0	0	31
E	11	17	8	1	0	0	37
ESE	12	13	4	0	0	0	29
SE	6	8	2	0	0	0	16
SSE	7	11	5	0	0	0	23
S	5	20	8	0	0	0	33
SSW	4	19	9	1	0	0	33
SW	2	13	15	2	0	0	32
WSW	2	6	8	7	3	0	26
W	6	20	40	22	6	1	95
WNW	2	16	51	28	12	6	115
W	3	17	56	52	44	8	180
WNW	5	23	11	12	1	0	52
VARIABLE	39	0	0	0	0	0	39
TOTAL	784						
PERIODS OF CALM(HOURS):							0
HOURS OF MISSING DATA:							118

Attachment 4 (continued)

HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD* 8010 1 1-80123124
 STABILITY CLASS: F
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED(MPH)

HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD* 8010 1 1-80123124
 STABILITY CLASS: E
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	4	0	0	0	0	0	4
NNE	2	1	0	0	0	0	3
NE	6	0	0	0	0	0	6
ENE	5	0	0	0	0	0	5
E	13	1	0	0	0	0	14
ESE	13	5	0	0	0	0	18
SE	10	2	0	0	0	0	12
SSE	18	0	0	0	0	0	18
S	17	6	0	0	0	0	23
SSW	21	4	1	0	0	0	26
SW	16	8	1	0	0	0	25
WSW	11	6	3	0	0	0	20
W	10	6	4	0	0	0	20
WNW	3	3	1	0	0	0	7
NW	5	6	3	0	0	0	14
NNW	10	4	1	0	0	0	15
VARIABLE	33	0	0	0	0	0	33
TOTAL	230						
PERIODS OF CALM(HOURS):							0
HOURS OF MISSING DATA:							118

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	6	16	5	0	0	19	46
NNE	10	6	0	0	0	0	16
NE	3	6	0	0	0	0	9
ENE	7	3	0	0	0	0	10
E	21	3	0	0	0	0	24
ESE	16	7	0	0	0	0	23
SE	11	11	1	0	0	0	23
SSE	6	3	0	0	0	0	9
S	7	13	7	1	0	0	28
SSW	16	18	13	2	0	0	49
SW	6	26	6	0	0	0	38
WSW	14	25	5	1	0	0	45
W	11	23	18	4	0	0	56
WNW	10	16	17	5	0	0	48
NW	5	10	27	8	1	1	52
NNW	11	13	6	1	0	0	31
VARIABLE	42	0	0	0	0	3	45
TOTAL	507						
PERIODS OF CALM(HOURS):							0
HOURS OF MISSING DATA:							118

Attachment 4 (continued)

HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD= 8010 1 1-80123124
 STABILITY CLASS: ALL
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED(MPH)

HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD= 8010 1 1-80123124
 STABILITY CLASS: G
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	28	48	8	1	0	0	134
NNE	20	21	1	0	0	0	42
NE	25	20	0	1	0	0	46
ENE	26	22	4	3	0	0	55
E	40	27	0	1	0	0	68
ESE	51	30	10	0	0	0	91
SE	38	25	5	0	0	0	68
SSE	40	18	7	0	0	0	65
S	45	48	25	1	0	0	119
SSW	62	55	30	3	0	0	150
SW	35	54	31	5	0	0	125
WSW	37	48	25	12	3	0	125
W	35	54	83	34	8	2	216
WNW	21	47	94	56	17	8	243
W	18	52	123	82	64	12	351
NNW	37	63	36	26	3	0	165
VARIABLE	153	0	0	0	0	3	156
TOTAL	2090						
PERIODS OF CALM(HOURS):							0
HOURS OF MISSING DATA:							118

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	6	1	0	0	0	0	29
NNE	1	0	0	0	0	0	1
NE	4	1	0	0	0	0	5
ENE	6	1	0	0	0	0	7
E	2	2	0	0	0	0	4
ESE	5	1	0	0	0	0	6
SE	9	0	0	0	0	0	9
SSE	15	1	0	0	0	0	16
S	13	2	0	0	0	0	15
SSW	14	1	0	0	0	0	15
SW	11	3	0	0	0	0	14
WSW	5	2	0	0	0	0	7
W	6	1	1	0	0	0	8
WNW	2	3	0	0	0	0	5
W	1	0	0	0	0	0	1
NNW	6	3	2	0	0	0	11
VARIABLE	23	0	0	0	0	0	23
TOTAL	153						
PERIODS OF CALM(HOURS):							0
HOURS OF MISSING DATA:							118

Attachment 5
 Three Mile Island Unit 1 Joint Frequency Tables
 For Specific Dates During the Fourth Quarter 1980

PERIOD OF RECORD-		HOURS AT EACH WIND SPEED AND DIRECTION					HOURS AT EACH WIND SPEED AND DIRECTION								
STABILITY CLASS:		0 0 0 0- 0 0 0 0					0 0 0 0- 0 0 0 0								
ELEVATION:		SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A					SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A								
WIND DIRECTION		WIND SPEED(MPH)					WIND SPEED(MPH)								
WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL	WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	1	5	0	0	0	0	6	N	1	1	0	0	0	0	2
NNE	0	2	0	0	0	0	2	NNE	1	0	0	0	0	0	1
NE	0	0	0	0	0	0	0	NE	0	0	0	0	0	0	0
ENE	0	2	0	0	0	0	2	ENE	0	0	0	0	0	0	0
E	0	2	0	0	0	0	2	E	0	1	0	0	0	0	1
ESE	1	1	4	0	0	0	6	ESE	1	0	0	0	0	0	1
SE	1	1	0	0	0	0	2	SE	0	1	0	0	0	0	1
SSE	1	0	0	0	0	0	1	SSE	0	0	0	0	0	0	0
S	3	4	6	0	0	0	13	S	0	1	0	0	0	0	1
SSW	5	7	4	0	0	0	16	SSW	0	1	0	0	0	0	1
SU	0	0	6	0	0	0	6	SU	0	0	0	0	0	0	0
USW	1	7	4	0	0	0	12	USW	1	1	1	1	0	0	4
U	0	4	12	4	1	0	21	U	0	0	4	1	0	0	5
UNW	2	7	19	15	2	0	45	UNW	1	0	2	3	2	0	8
MU	3	16	25	11	11	0	66	MU	0	1	3	5	2	2	13
MNW	2	8	12	6	1	0	29	MNW	2	0	0	2	1	0	5
VARIABLE	0	0	0	0	0	0	0	VARIABLE	3	0	0	0	0	0	3
TOTAL	27	43	66	33	24	0	193	TOTAL	43	0	0	0	0	0	43
PERIODS OF CALM(HOURS):						PERIODS OF CALM(HOURS):					0				
HOURS OF MISSING DATA:						HOURS OF MISSING DATA:					33				

Attachment 5 (continued)

HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD* 0 0 0 0-0 0 0 0
 STABILITY CLASS: D
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED(MPH)

HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD* 0 0 0 0-0 0 0 0
 STABILITY CLASS: C
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	8	13	3	0	0	0	32
NNE	3	4	1	0	0	0	8
NE	7	9	0	1	0	0	17
ENE	6	14	4	3	0	0	27
E	4	10	5	1	0	0	20
ESE	11	9	1	0	0	0	21
SE	5	2	2	0	0	0	9
SSE	3	8	4	0	0	0	15
S	4	13	6	0	0	0	23
SSU	3	11	5	1	0	0	20
SU	2	9	12	2	0	0	25
USU	1	5	3	7	3	0	19
U	3	16	34	16	6	1	76
UNU	2	13	41	19	7	6	88
NU	2	12	33	33	36	7	123
NNU	3	15	10	10	1	0	39
VARIABLE	30	8	0	0	0	0	38

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	1	0	0	1
NNE	2	0	0	0	0	0	2
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	1	0	1	0	0	0	2
ESE	1	2	0	0	0	0	3
SE	0	1	0	0	0	0	1
SSE	1	0	0	0	0	0	1
S	0	0	1	0	0	0	1
SSU	1	2	0	0	0	0	3
SU	0	0	0	1	0	0	1
USU	1	0	1	0	0	0	2
U	1	0	2	1	0	0	4
UNU	1	1	1	2	0	0	5
NU	0	1	4	2	2	0	9
NNU	0	1	2	5	0	0	8
VARIABLE	3	0	0	0	0	0	3

TOTAL 562
 PERIODS OF CALM(HOURS): 0
 HOURS OF MISSING DATA: 33

TOTAL 43
 PERIODS OF CALM(HOURS): 0
 HOURS OF MISSING DATA: 33

Attachment 5 (continued)

PERIOD OF RECORD*		HOURS AT EACH WIND SPEED AND DIRECTION							HOURS AT EACH WIND SPEED AND DIRECTION						
0 0 0 0- 0 0 0 0		0 0 0 0- 0 0 0 0							0 0 0 0- 0 0 0 0						
STABILITY CLASS: E		STABILITY CLASS: F							STABILITY CLASS: F						
ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A		ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A							ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A						
WIND SPEED(MPH)		WIND SPEED(MPH)							WIND SPEED(MPH)						
WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL	WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	3	15	4	0	0	0	19	N	2	0	0	0	0	0	2
NNE	7	4	0	0	0	0	11	NNE	2	1	0	0	0	0	3
NE	2	4	0	0	0	0	6	NE	6	0	0	0	0	0	6
ENE	4	3	0	0	0	0	7	ENE	4	0	0	0	0	0	4
E	13	3	0	0	0	0	16	E	12	0	0	0	0	0	12
ESE	12	5	0	0	0	0	17	ESE	11	3	0	0	0	0	14
SE	6	8	0	0	0	0	14	SE	8	1	0	0	0	0	9
SSE	5	1	0	0	0	0	6	SSE	10	0	0	0	0	0	10
S	4	8	5	0	0	0	17	S	15	4	0	0	0	0	19
SSW	10	6	0	0	0	0	25	SSW	18	2	1	0	0	0	21
SU	4	8	2	0	0	0	14	SU	14	6	1	0	0	0	21
USW	8	15	5	1	0	0	29	USW	7	4	3	0	0	0	14
U	7	16	17	3	0	0	43	U	5	3	3	0	0	0	11
UNW	7	10	16	4	0	0	37	UNW	3	3	1	0	0	0	7
NW	4	8	22	7	1	1	43	NW	2	5	2	0	0	0	9
NNW	8	11	4	0	0	0	23	NNW	6	1	1	0	0	0	8
VARIABLE	20	0	0	0	0	0	3	VARIABLE	26	0	0	0	0	0	26
TOTAL	349						170	TOTAL	170						0
PERIODS OF CALM(HOURS):	0						0	PERIODS OF CALM(HOURS):	0						0
HOURS OF MISSING DATA:	33						33	HOURS OF MISSING DATA:	33						33

Attachment 5 (continued)

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD* 0 0 0 0-0 0 0 0

STABILITY CLASS: C

ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	1	0	0	0	0	0	23
NNE	0	0	0	0	0	0	0
NE	1	1	0	0	0	0	2
ENE	1	1	0	0	0	0	2
E	1	2	0	0	0	0	3
ESE	3	0	0	0	0	0	3
SE	8	0	0	0	0	0	8
SSE	10	1	0	0	0	0	11
S	12	1	0	0	0	0	13
SSW	9	1	0	0	0	0	10
SW	6	1	0	0	0	0	7
WSW	4	0	0	0	0	0	4
W	4	0	0	0	0	0	4
WNW	1	0	0	0	0	0	1
NW	1	0	0	0	0	0	1
NNW	2	0	0	0	0	0	2
VARIABLE	0	0	0	0	0	0	0
TOTAL	96	0	0	0	0	0	96
PERIODS OF CALM(HOURS):							0
HOURS OF MISSING DATA:							33

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD* 0 0 0 0-0 0 0 0

STABILITY CLASS: ALL

ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	16	34	7	1	0	0	49
NNE	15	11	1	0	0	0	27
NE	16	14	0	1	0	0	31
ENE	15	20	4	3	0	0	42
E	31	18	6	1	0	0	56
ESE	40	20	5	0	0	0	65
SE	28	14	2	0	0	0	44
SSE	30	10	4	0	0	0	44
S	38	31	18	0	0	0	87
SSW	46	30	19	1	0	0	96
SW	26	24	21	3	0	0	74
WSW	23	32	17	9	3	0	84
W	20	39	72	25	7	1	164
WNW	17	34	80	43	11	6	191
NW	12	43	89	58	52	10	264
NNW	23	36	31	23	3	0	116
VARIABLE	105	0	0	0	0	0	105
TOTAL	1492	0	0	0	0	0	1492
PERIODS OF CALM(HOURS):							0
HOURS OF MISSING DATA:							33

Attachment 6
 Three Mile Island Unit II Joint Frequency Tables
 For Specific Dates During the Fourth Quarter 1980

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD* 0 0 0 0-0 0 0 0

STABILITY CLASS: B

ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED:(MPH)

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD* 0 0 0 0-0 0 0 0

STABILITY CLASS: A

ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED:(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	1	4	0	0	0	0	5
NNE	0	1	0	0	0	0	1
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	2	1	0	0	0	0	3
SE	1	1	0	0	0	0	2
SSE	1	0	0	0	0	0	1
S	3	4	6	0	0	0	13
SSW	5	5	4	0	0	0	14
SU	0	0	6	0	0	0	6
WSW	1	4	4	0	0	0	9
W	0	3	11	4	1	0	19
WNW	2	7	18	14	2	0	43
NW	3	14	22	10	11	0	60
NNW	2	8	10	6	1	0	27
VARIABLE	8	0	0	0	0	0	8
TOTAL	293	42	42	42	42	42	42
PERIODS OF CALM(HOURS):	0	0	0	0	0	0	0
HOURS OF MISSING DATA:	31	31	31	31	31	31	31

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD* 0 0 0 0-0 0 0 0

STABILITY CLASS: B

ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED:(MPH)

Attachment 6 (continued)

PERIOD OF RECORD* 0 0 0 0-0 0 0 0
 STABILITY CLASS: C
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED(MPH)

PERIOD OF RECORD* 0 0 0 0-0 0 0 0
 STABILITY CLASS: D
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	1	0	0	1
NNE	2	0	0	0	0	0	2
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	1	0	1	0	0	0	2
ESE	1	2	0	0	0	0	3
SE	0	1	0	0	0	0	1
SSE	1	0	0	0	0	0	1
S	0	0	0	0	0	0	0
SSW	1	2	0	0	0	0	3
SW	0	0	0	1	0	0	1
WSW	1	0	0	0	0	0	1
W	1	0	2	1	0	0	4
WNW	1	1	1	2	0	0	5
NW	0	1	4	2	2	0	9
NNW	0	1	2	5	0	0	8
VARIABLE	3	0	0	0	0	0	3
TOTAL	41	41	41	41	41	41	41
PERIODS OF CALM(HOURS):	0	0	0	0	0	0	0
HOURS OF MISSING DATA:	31	31	31	31	31	31	31

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	8	13	3	0	0	0	32
NNE	3	4	1	0	0	0	8
NE	6	11	0	0	0	0	17
ENE	6	14	2	0	0	0	22
E	4	8	6	0	0	0	18
ESE	10	8	0	0	0	0	18
SE	5	2	2	0	0	0	9
SSE	2	8	4	0	0	0	14
S	4	13	6	0	0	0	23
SSW	2	9	6	1	0	0	18
SW	2	9	12	2	0	0	25
WSW	1	3	3	3	3	0	13
W	3	11	28	15	4	1	62
WNW	1	13	36	18	7	6	81
NW	2	12	35	34	36	7	126
NNW	2	16	9	10	1	9	38
VARIABLE	28	0	0	0	0	0	28
TOTAL	524	524	524	524	524	524	524
PERIODS OF CALM(HOURS):	0	0	0	0	0	0	0
HOURS OF MISSING DATA:	31	31	31	31	31	31	31

Attachment 6 (continued)

HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD* 0 0 0 0-0 0 0 0
 STABILITY CLASS: F
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED(MPH)

HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD* 0 0 0 0-0 0 0 0
 STABILITY CLASS: E
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	2	0	0	0	0	0	2
NNE	2	1	0	0	0	0	3
NE	5	0	0	0	0	0	5
ENE	4	0	0	0	0	0	4
E	11	0	0	0	0	0	11
ESE	9	3	0	0	0	0	12
SE	6	1	0	0	0	0	7
SSE	10	0	0	0	0	0	10
S	14	4	0	0	0	0	18
SSW	18	2	1	0	0	0	21
SW	13	6	1	0	0	0	20
WSW	6	4	3	0	0	0	13
W	5	3	3	0	0	0	11
WNW	3	3	1	0	0	0	7
NW	2	5	2	0	0	0	9
NNW	4	1	1	0	0	0	6
VARIABLE	21	0	0	0	0	0	21
TOTAL	159						
PERIODS OF CALM(HOURS):							0
HOURS OF MISSING DATA:							31

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	2	16	3	0	0	0	19
NNE	5	3	0	0	0	0	8
NE	2	3	0	0	0	0	5
ENE	4	1	0	0	0	0	5
E	11	2	0	0	0	0	13
ESE	9	5	0	0	0	0	14
SE	5	6	0	0	0	0	11
SSE	4	1	0	0	0	0	5
S	4	8	5	0	0	0	17
SSW	10	6	9	0	0	0	25
SW	4	8	2	0	0	0	14
WSW	9	15	5	1	0	0	30
W	8	16	17	3	0	0	44
WNW	6	10	16	4	0	0	36
NW	5	8	22	7	1	1	44
NNW	8	11	3	0	0	0	22
VARIABLE	22	0	0	0	0	0	22
TOTAL	333						
PERIODS OF CALM(HOURS):							0
HOURS OF MISSING DATA:							31

Attachment 6 (continued)

PERIOD OF RECORD: 0 0 0 0-0 0 0 0
 HOURS AT EACH WIND SPEED AND DIRECTION
 STABILITY CLASS: ALL
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED(MPH)

PERIOD OF RECORD: 0 0 0 0-0 0 0 0
 HOURS AT EACH WIND SPEED AND DIRECTION
 STABILITY CLASS: G
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A
 WIND SPEED(MPH)

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	15	33	6	1	0	49	104
NNE	13	9	1	0	0	0	23
NE	14	15	0	0	0	0	29
ENE	15	16	2	0	0	0	33
E	27	13	7	0	0	0	47
ESE	35	19	0	0	0	0	54
SE	25	12	2	0	0	0	39
SSE	28	10	4	0	0	0	42
S	37	31	17	0	0	0	85
SSW	44	26	20	1	0	0	91
SW	25	24	21	3	0	0	73
WSW	23	26	16	5	3	0	73
W	20	33	65	24	5	1	148
WNW	15	35	74	41	11	6	182
NW	13	41	88	58	52	10	262
NNW	19	37	28	23	3	0	110
VARIABLE	90	0	0	0	0	0	90
TOTAL	1395						
PERIODS OF CALM(HOURS):							0
HOURS OF MISSING DATA:							31

WIND DIRECTION	1-3	3-4	8-12	13-18	19-24	>24	TOTAL
N	1	0	0	0	0	22	23
NNE	0	0	0	0	0	0	0
NE	1	1	0	0	0	0	2
ENE	1	1	0	0	0	0	2
E	0	2	0	0	0	0	2
ESE	3	0	0	0	0	0	3
SE	8	0	0	0	0	0	8
SSE	10	1	0	0	0	0	11
S	12	1	0	0	0	0	13
SSW	8	1	0	0	0	0	9
SW	6	1	0	0	0	0	7
WSW	4	0	0	0	0	0	4
W	3	0	0	0	0	0	3
WNW	1	0	0	0	0	0	1
NW	1	0	0	0	0	0	1
NNW	2	0	2	0	0	0	4
VARIABLE	5	0	0	0	0	0	5
TOTAL	93						
PERIODS OF CALM(HOURS):							0
HOURS OF MISSING DATA:							31