ATTACHMENT 5

(4410-85-L-0175)
12 Pages

EFFLUENT AND WASTE DISPOSAL SEMI ANNUAL REPORT
January 1, 1985 - June 30, 1985
SUPPLEMENTAL INFORMATION

FACILITY TMI-Unit 2 (including EPICOR-II) LICENSEE DPR-73-320

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 ($\overline{E}$) of the radionuclide mixture in releases of fission and activation gases, if applicable 0.253 MeV (Kr-85)

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 Countir
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	1985 1st Quarter	1985 2nd Quarter
1. Number of batch releases:	51	39
2. Total time period for batch release:	N/A	N/A
3. Maximum time period for a batch release:	N/A	N/A
4. Average time period for batch releases:	N/A	N/A
5. Minimum time period for a batch release:	N/A	N/A
6. Average stream flow during periods of release of effluent into flowing stream:	N/A	N/A

See Note (1) and * on Page 6 of this report
N/A= Not Applicable

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5. Batch Releases (cont.)

B. Gaseous	1985 1st Quarter	1985 2nd Quarter
1. Number of batch releases:	None	None
2. Total time period for batch releases:	N/A	N/A
3. Maximum time period for a batch release:	N/A	N/A
4. Average time period for batch release:	N/A	N/A
5. Minimum time period for a batch release:	N/A	N/A

6. Abnormal Releases

A. Liquid

1. Number of releases:	None	None
2. Total activity released:	N/A	N/A

B. Gaseous

1. Number of releases:	None	None
2. Total activity released:	N/A	N/A

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

	UNIT II	1st QUARTER 1985	2nd QUARTER 1985	EST. TOTAL ERROR, %
A. Fission & activation gases				
1. Total release	Ci	<LLD	<LLD	±60%
2. Average release rate for period	µCi/sec.	N/A	N/A	Tech Spec Limit= 7.20E3 µCi/sec for Kr-85
3. Percent of Tech Spec limit	%	N/A	N/A	
B. Iodines				
1. Total Iodine-131	Ci	N/A	N/A	N/A
2. Average release rate for period	µCi/sec.	N/A	N/A	
3. Percent of Tech Spec limit	%	N/A	N/A	
C. Particulates				
1. Particulates with half-lives > 8 Days	Ci	6.80E-6	6.48E-6	±60%
2. Average release rate for period	µCi/sec.	8.74E-7	8.24E-7	Tech Spec Limit= 2.40E-2 µCi/sec
3. Percent of Tech Spec limit	%	3.64E-3	3.43E-3	
4. Gross alpha radioactivity	Ci	7.84E-8	2.43E-7	
D. Tritium				
1. Total release	Ci	1.79E0	2.81E0	±60%
2. Average release rate for period	µCi/sec.	2.30E-1	3.58E-1	Tech Spec Limit= 4.80E3 µCi/sec for H-3
3. Percent of Tech Spec limit	%	4.79E-3	7.46E-3	

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

Nuclides Released	UNIT II	Continuous Mode 1985 1st QUARTER	Continuous Mode 1985 2nd QUARTER	Batch Mode 1985 1st QUARTER	Batch Mode 1985 2nd QUARTER
1. Fission gases					
krypton-85	Ci	< LLD	< LLD	N/A	N/A
krypton-85m	Ci	< LLD	< LLD	N/A	N/A
krypton-87	Ci	< LLD	< LLD	N/A	N/A
krypton-88	Ci	< LLD	< LLD	N/A	N/A
xenon-133	Ci	< LLD	< LLD	N/A	N/A
xenon-135	Ci	< LLD	< LLD	N/A	N/A
xenon-135m	Ci	< LLD	< LLD	N/A	N/A
xenon-138	Ci	< LLD	< LLD	N/A	N/A
Others (specify)	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
Unidentified	Ci	< LLD	< LLD	N/A	N/A
Total for period	Ci	< LLD	< LLD	N/A	N/A
2. Iodines					
iodine-131	Ci	< LLD	< LLD	N/A	N/A
iodine-133	Ci	< LLD	< LLD	N/A	N/A
iodine-135	Ci	< LLD	< LLD	N/A	N/A
Total for period	Ci	< LLD	< LLD	N/A	N/A

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

Nuclides Released	UNIT II	Continuous Mode 1985 1st QUARTER	Continuous Mode 1985 2nd QUARTER	Batch Mode 1985 1st QUARTER	Batch Mode 1985 2nd QUARTER
3. Particulates					
strontium-89	Ci	< LLD	< LLD	N/A	N/A
strontium-90	Ci	< LLD	< LLD	N/A	N/A
cesium-134	Ci	< LLD	< LLD	N/A	N/A
cesium-137	Ci	7.67E-8	< LLD	N/A	N/A
barium-lanthanum-140	Ci	< LLD	< LLD	N/A	N/A
Others (specify)					
Unidentified		6.73E-6	6.48E-6	N/A	N/A

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

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

	UNIT II	1985 1st QUARTER	1985 2nd QUARTER	EST. TOTAL ERROR %
A. Fission and activation products				
1. Total releases (not including tritium, gases, alpha)	Ci	3.99E-5	4.96E-5	±60%
2. Average diluted concentration during period	µCi/ml	5.36E-12	4.15E-12	Based on 2E-5
3. Percent of applicable limit	%	2.68E-5	2.08E-5	µCi/ml(Cs-137)
B. Tritium				
1. Total release	Ci	3.56E-5	7.25E-5	±60%
2. Average diluted concentration during period	µCi/ml	4.78E-12	7.69E-12	Based on 3E-3
3. Percent of applicable limit	%	1.59E-7	2.56E-7	µCi/ml (H-3)
C. Dissolved and entrained gases				
1. Total release	Ci	< LLD	< LLD	±60%
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	Note 3	Note 3	±60%
E. Volume of waste released * (prior to dilution)	liters	5.67E4	1.44E5	25%
F. Volume of dilution water used during period	liters	7.45E9	9.43E9	10%

*Includes only those releases mentioned in Note (1) which were found to contain radioisotope concentrations >LLD.

Note:(1):There were no liquid releases from the radwaste system during the first half of 1985 since this system is flanged off from the discharge lines. However, low concentrations of radionuclides have been occasionally found in the industrial waste stream and sanitary waste and are appropriately included in Item A2.

Note:(2):Refer to Table 5 for typical LLD values.

Note:(3):The alpha values will be determined by offsite vendor analysis of a composite sample.

TABLE 2B
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
LIQUID EFFLUENTS (Note 1)

Nuclides Released	UNIT II	Continuous Mode 1985 1st QUARTER	Continuous Mode 1985 2nd QUARTER	Batch Mode 1985 1st QUARTER	Batch Mode 1985 2nd QUARTER
strontium-89	Ci	SEE NOTE 2	SEE NOTE 2	< LLD	< LLD
strontium-90	Ci			Note 3	Note 3
cesium-134	Ci			< LLD	< LLD
cesium-137	Ci			3.76E-6	1.43E-5
iodine-131	Ci			< LLD	< LLD
cobalt-58	Ci			< LLD	< LLD
cobalt-60	Ci			< LLD	< LLD
iron-59	Ci			< LLD	< LLD
zinc-65	Ci			< LLD	< LLD
managanese-54	Ci			< LLD	< LLD
chromium-51	Ci			< LLD	< LLD
zirconium-niobium-95	Ci			< LLD	< LLD
molybdenum-99	Ci			< LLD	< LLD
technetium-99m	Ci			< LLD	< LLD
barium-lanthanum-140	Ci			< LLD	< LLD
cerium-141	Ci			< LLD	< LLD
Other (specify)	Ci			< LLD	< LLD
	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
Unidentified	Ci			3.61E-5	3.52E-5
Total for period	Ci			3.99E-5	4.96E-5
xenon-133	Ci			< LLD	< LLD
xenon-135	Ci			< LLD	< LLD

Note (1) Includes only those releases mentioned in Note (1) page 6.
Note (2) There was no continuous release of effluent from Unit II during the second half of 1985.
Note (3) The Sr-90 values will be determined by offsite vendor analysis of a composite sample.

TABLE 3A
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

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

1. Type of waste	UNIT	6 month period	EST. TOTAL ERROR %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m^3 Ci	.793 m^3 5944.01 Ci	5%
b. Dry compressible waste, contaminated equipment, etc.	m^3 Ci	208.97 m^3 2.133 Ci	5%
c. Irradiated components, control rods, etc.	m^3 Ci	--	--
d. Other (describe)	m^3 Ci	--	--

2. Estimate of major nuclide composition (by type of waste)		
a. Cs 137	77.73%	
Sr 90	17.5 %	
Cs 137	3.13 %	
Ru 106	.69 %	
b. Cs-137	91.23 %	
Tc 99	5.4E-2 %	
Cs-134	4.118 %	
Sr-90	4.314 %	
Sb 125	5.5E-2 %	
c. N/A	%	
	%	
	%	
	%	
	%	
d. N/A	%	
	%	
	%	
	%	
	%	

3. Solid Waste Disposition Number of Shipments	Mode of Transportation	Destination
(A) 2 shipments	Tractor-Cask-(14/TPOM)	Richland, Washington
* (B) 6 shipments	Tractor-Flatbed	Hanford, Washington
* (B) 4 shipments	Tractor-Closed Van	Hanford, Washington

B. Irradiated Fuel Shipments (Disposition)

Number of Shipments	Mode of Transportation	Destination
N/A		
N/A		

*(B) LSA shipped in {396 steel drums at 7.5 ft^3 each; 45 steel boxes at 98 ft^3 each}

TABLE 3A
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

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

1. Type of waste	UNIT	6 month period	EST. TOTAL ERROR %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m^3 Ci	15.85 m^3 14.473 Ci	5%
b. Dry compressible waste, contaminated equipment, etc.	m^3 Ci	--	--
c. Irradiated components, control rods, etc.	m^3 Ci	--	--
d. Other (describe)	m^3 Ci	--	--

2. Estimate of major nuclide composition (by type of waste)		
a. Sb 125	72.2 %	
Te 125m	16.58 %	
Cs 137	6.62 %	
Sr 90	1.75 %	
b. Cs-137	%	
Ba-137m	%	
Cs-134	%	
Sr-90	%	
Y-90	%	
c. N/A	%	
	%	
	%	
	%	
	%	
d. N/A	%	
	%	
	%	
	%	
	%	

3. Solid Waste Disposition Number of Shipments	Mode of Transportation	Destination
* (a) 2 shipments	Tractor-Flatbed	Hanford, Washington
(a) 2 shipments	Tractor - Cask (14/190m)	Hanford, Washington

B. Irradiated Fuel Shipments (Disposition)

Number of Shipments	Mode of Transportation	Destination

*Shipped in 3-170ft^3 steel liners
1-50ft^3 steel liners

TABLE 3A
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

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

1. Type of waste	UNIT	6 month period	EST. TOTAL ERROR %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m^3 Ci	28.88m^3 2.17Ci	5%
b. Dry compressible waste, contaminated equipment, etc.	m^3 Ci	--	--
c. Irradiated components, control rods, etc.	m^3 Ci	--	--
d. Other (describe)	m^3 Ci	--	--

2. Estimate of major nuclide composition (by type of waste)		
a. Cs 137	44.29%	
Co 60	22.28%	
Ni 63	21.61%	
H3	5.13%	
b. Cs-137	%	
Ba-137m	%	
Cs-134	%	
Sr-90	%	
Y-90	%	
c. N/A	%	
	%	
	%	
	%	
	%	
	%	
d. N/A	%	
	%	
	%	
	%	
	%	

3. Solid Waste Disposition Number of Shipments	Mode of Transportation	Destination
* (a) 2 shipments	Tractor-Flatbed	Hanford, Washington

B. Irradiated Fuel Shipments (Disposition)

Number of Shipments	Mode of Transportation	Destination
--		
--		

* Shipped in 6 - 170 ft^3 steel liners

TABLE IV

TYPICAL GASEOUS EFFLUENT LLD (Lower Limit of Dectection) VALUES

ASSUMPTIONS:

Sample Volume (Marinelli)	1640 cc
Sample Volume (Particulate Filters)	5.0E8 cc
Sample Volume (Gas bubbled through water)	1.0E6 cc
Sample Volume	100 ml
Sample Aliquot	3 ml
Sample Counting Time: α=20min; ^3H=10min; β=10min; γ=1000sec	
Sample Counters: γ emitters	25% Ge(li)
α or β	Proportional Counter
^3H	Liquid Scintillation Counter

ISOTOPE		µCi/ccLLD	TYPE SAMPLE
Gross Alpha	α	7E-16	Particulate Filter Paper
Gross Beta	β	2E-14	Particulate Filter Paper
Tritium	^3H	4E-10	Air bubbled thru water by Fisher Milligan gas washer
Krypton-85	^{85}Kr	5E-6	Marinelli
Krypton-85m	^{85m}Kr	2E-8	Marinelli
Krypton-87	^{87}Kr	4E-8	Marinelli
Krypton-88	^{88}Kr	4E-8	Marinelli
Xenon-133	^{133}Xe	3E-8	Marinelli
Xenon-133m	^{133m}Xe	1E-7	Marinelli
Xenon-135	^{135}Xe	2E-8	Marinelli
Xenon-135m	^{135m}Xe	2E-7	Marinelli
Xenon-138	^{138}Xe	2E-7	Marinelli
Iodine-131	^{131}I	2E-8	Marinelli
Iodine-133	^{133}I	2E-8	Marinelli
Iodine-135	^{135}I	2E-7	Marinelli
Manganese-54	^{54}Mn	5E-14	Particulate Filter Paper
Iron-59	^{59}Fe	1E-13	Particulate Filter Paper
Cobalt-58	^{58}Co	5E-14	Particulate Filter Paper
Cobalt-60	^{60}Co	8E-14	Particulate Filter Paper
Zinc-65	^{65}Zn	1E-13	Particulate Filter Paper
Strontium-90	^{90}Sr	6E-14	Particulate Filter Paper*
Molybdenum-99	^{99}Mo	2E-14	Particulate Filter Paper
Ruthenium-103	^{103}Ru	3E-14	Particulate Filter Paper
Silver-110	^{110m}Ag	7E-14	Particulate Filter Paper
Cesium-134	^{134}Cs	6E-14	Particulate Filter Paper
Cesium-137	^{137}Cs	5E-14	Particulate Filter Paper
Cerium-141	^{141}Ce	3E-14	Particulate Filter Paper
Cerium-144	^{144}Ce	2E-13	Particulate Filter Paper

*Determined by beta spectrometer

TABLE V

TYPICAL LIQUID EFFLUENT LLD (Lower Limit of Detection) VALUES

ASSUMPTIONS: Sample volume = 1 liter = 1000 cc
Sample counting time - 1000 sec
Sample counted with a 25% Ge(Li)
for Gamma Emitters

ISOTOPE		Ci/cc LLD	NOTES
Gross Alpha	α	4E-9	Counted with proportional counter
Gross Beta	β	7E-8	Counted with proportional counter
Tritium	^{3}H	4E-6	Counted with Liquid Scintillation counter
Krypton-85	^{85}Kr	1E-4	
Xenon-131m	^{131m}Xe	2E-5	
Xenon-133	^{133}Xe	1E-6	
Xenon-135	^{135}Xe	3E-7	
Chromium-51	^{51}Cr	3E-6	
Manganese-54	^{54}Mn	4E-7	
Cobalt-58	^{58}Co	4E-7	
Iron-59	^{59}Fe	9E-7	
Cobalt-60	^{60}Co	6E-7	
Zinc-65	^{65}Zn	1E-6	
Zirconium-95	^{95}Zr	7E-7	
Niobium-95	^{95}Nb	4E-7	
Molybdenum-99	^{99}Mo	3E-7	
Technetium-99m	^{99m}Tc	3E-7	
Silver-110m	^{110m}Ag	6E-7	
Antimony-125	^{125}Sb	9E-7	
Cesium-134	^{134}Cs	5E-7	
Cesium-136	^{136}Cs	4E-7	
Cesium-137	^{137}Cs	5E-7	
Barium-140	^{140}Ba	1E-6	
Lanthanum-140	^{140}La	7E-7	
Cerium-141	^{141}Ce	6E-7	
Cerium-144	^{144}Ce	3E-6	
Iodine-131	^{131}I	3E-7	
Iodine-133	^{133}I	4E-7	
Phosphorus-32	^{32}P	1E-6	These LLD values for liquid sample analyses of gross alpha, ^{32}P, ^{55}Fe, ^{89}Sr, and ^{90}Sr are the same as Unit-1 which are offsite vendor LLD values
Iron-55	^{55}Fe	5E-8	
Strontium-89	^{89}Sr	5E-8	
Strontium-90	^{90}Sr	5E-8	
Gross Alpha	α	1E-7	

SITE: THREE MILE ISLD. UNIT: 08/09/85 09.00

HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 8501010100-8503312400
STABILITY CLASS A DT/DZ
ELEVATION SPEED SP100A DIRECTION DI100A LAPSE DT150A

WIND SPEED(MPH)

WIND DIRECTION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	5	5	1	3	0	0	15
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	2	1	0	0	0	0	3
ESE	2	4	2	0	0	0	8
SE	3	4	3	1	0	0	11
SSE	4	2	2	0	0	0	8
S	4	3	7	0	0	0	14
SSW	1	4	13	2	0	0	20
SW	0	9	9	5	0	0	23
WSW	0	3	5	3	0	0	11
W	4	4	12	6	1	0	27
WNW	1	4	16	5	2	2	30
NW	1	11	18	10	1	0	33
NNW	0	11	14	12	8	1	46
TOTAL	28	66	94	47	12	3	250

PERIODS OF CALM(HOURS) 2
VARIABLE DIRECTION 12
HOURS OF MISSING DATA 56

SITE: THREE MILE ISLD. UNIT: 08/09/85 09.00

HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 8501010100-8503312400
STABILITY CLASS B DT/DZ
ELEVATION SPEED SP100A DIRECTION DI100A LAPSE DT150A

WIND SPEED(MPH)

WIND DIRECTION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	1	1	1	0	0	0	3
NNE	0	0	0	0	0	0	0
NE	0	1	0	0	0	0	1
ENE	0	1	0	0	0	0	1
E	1	1	1	0	0	0	3
ESE	3	3	0	0	0	0	6
SE	0	1	0	0	0	0	1
SSE	0	1	0	0	0	0	1
S	3	0	4	0	0	0	7
SSW	1	1	0	0	0	0	2
SW	1	5	4	0	0	0	10
WSW	0	2	2	2	0	0	6
W	1	1	7	9	4	1	23
WNW	2	1	8	9	0	0	20
NW	1	0	9	12	5	2	29
NNW	1	4	2	5	1	0	13
TOTAL	15	23	38	37	10	3	134

PERIODS OF CALM(HOURS) 2
VARIABLE DIRECTION 3
HOURS OF MISSING DATA 56

SITE: THREE MILE ISLD. UNIT: 08/09/85 09.00

HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 8501010100-8503312400
STABILITY CLASS C DT/DZ
ELEVATION SPEED SP100A DIRECTION DI100A LAPSE DT150A

WIND SPEED(MPH)

WIND DIRECTION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	0	2	0	0	0	0	2
NE	1	0	0	0	0	0	1
ENE	1	1	0	0	0	0	2
E	2	0	0	0	0	0	2
ESE	1	0	1	1	0	0	3
SE	0	1	1	0	0	0	2
SSE	0	2	0	0	0	0	2
S	0	1	2	0	0	0	3
SSW	1	1	2	0	0	0	4
SW	1	1	2	1	0	0	5
WSW	1	1	1	0	0	0	3
W	1	1	3	7	1	1	14
WNW	1	1	3	6	3	0	14
NW	0	1	2	11	8	0	22
NNW	0	2	2	2	0	0	6
TOTAL	10	15	19	28	12	1	85

PERIODS OF CALM(HOURS) 2
VARIABLE DIRECTION 5
HOURS OF MISSING DATA 56

SITE: THREE MILE ISLD. UNIT: 08/09/85 09.00

HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 8501010100-8503312400
STABILITY CLASS D DT/DZ
ELEVATION SPEED SP100A DIRECTION DI100A LAPSE DT150A

WIND SPEED(MPH)

WIND DIRECTION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	10	17	6	3	0	0	36
NNE	12	15	0	0	0	0	27
NE	11	9	0	0	0	0	20
ENE	11	9	1	0	1	0	22
E	14	12	14	2	1	1	44
ESE	8	21	14	2	0	0	45
SE	7	21	7	1	0	0	36
SSE	4	15	12	0	0	0	31
S	3	21	10	3	0	0	37
SSW	2	17	6	2	0	0	27
SW	5	3	15	1	0	0	24
WSW	3	11	14	2	2	0	32
W	3	10	55	53	7	0	145
WNW	4	9	54	69	30	12	187
NW	4	23	34	35	25	6	127
NNW	2	24	26	9	1	0	62
TOTAL	103	246	268	182	76	27	982

PERIODS OF CALM(HOURS) 2
VARIABLE DIRECTION 47
HOURS OF MISSING DATA 56

Unit 2 1st Quarter
Frequency Tables

SITE: THREE MILE ISLD UNIT: 00/00/85 00:10

HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 8501010:-85033124
STABILITY CLASS E DT/DZ
ELEVATION SPEED SP100A DIRECTION DI100A LAPSE DT150A

WIND SPEED(MPH)

WIND DIRECTION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	7	8	11	0	0	0	26
NNE	5	7	1	0	0	0	13
NE	6	5	0	0	0	0	11
ENE	3	5	3	0	0	0	11
E	0	6	1	1	2	0	10
ESE	8	12	1	2	0	0	23
SE	4	17	0	0	0	0	21
SSE	0	0	2	0	0	0	11
S	1	14	7	1	0	0	25
SSW	12	10	6	1	0	0	38
SW	7	18	12	0	0	0	37
WSW	4	21	14	1	0	0	40
W	1	21	33	11	1	0	67
WNW	2	12	16	10	2	0	42
NW	4	15	20	9	7	0	53
NNW	2	6	2	2	1	0	13
TOTAL	77	103	129	38	13	0	450

PERIODS OF CALM(HOURS) 2
VARIABLE DIRECTION 22
HOURS OF MISSING DATA 56

SITE: THREE MILE ISLD UNIT: 00/00/85 00:10

HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 8501010:-85033124
STABILITY CLASS F DT/DZ
ELEVATION SPEED SP100A DIRECTION DI100A LAPSE DT150A

WIND SPEED(MPH)

WIND DIRECTION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	4	3	0	0	0	0	7
NNE	2	0	0	0	0	0	2
NE	1	0	0	0	0	0	1
ENE	7	0	0	0	0	0	7
E	0	1	0	0	0	0	10
ESE	0	1	0	0	0	0	10
SE	12	1	1	0	0	0	14
SSE	5	0	0	0	0	0	5
S	0	2	0	0	0	0	11
SSW	4	5	0	0	0	0	0
SW	7	4	1	0	0	0	12
WSW	2	0	2	0	0	0	12
W	2	3	1	0	0	0	6
WNW	5	0	0	0	0	0	5
NW	4	0	2	0	0	0	15
NNW	4	6	2	0	0	0	12
TOTAL	86	43	9	0	0	0	138

PERIODS OF CALM(HOURS) 2
VARIABLE DIRECTION 12
HOURS OF MISSING DATA 56

SITE: THREE MILE ISLD UNIT: 00/00/85 00:11

HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 8501010:-85033124
STABILITY CLASS G DT/DZ
ELEVATION SPEED SP100A DIRECTION DI100A LAPSE DT150A

WIND SPEED(MPH)

WIND DIRECTION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	2	2	0	0	0	0	4
NNE	2	0	0	0	0	0	2
NE	0	2	0	0	0	0	2
ENE	4	2	0	0	0	0	6
E	6	1	0	0	0	0	7
ESE	9	2	0	0	0	0	11
SE	8	1	0	0	0	0	9
SSE	16	0	0	0	0	0	16
S	15	7	0	0	0	0	22
SSW	7	6	0	0	0	0	13
SW	5	3	0	0	0	0	8
WSW	7	2	1	0	0	0	10
W	6	5	1	0	0	0	12
WNW	5	1	0	0	0	0	6
NW	6	3	0	0	0	0	9
NNW	4	4	0	0	0	0	8
TOTAL	102	41	2	0	0	0	145

PERIODS OF CALM(HOURS) 2
VARIABLE DIRECTION 18
HOURS OF MISSING DATA 56

SITE: THREE MILE ISLD UNIT: 00/00/85 00:11

HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 8501010:-85033124
STABILITY CLASS ALL DT/DZ
ELEVATION SPEED SP100A DIRECTION DI100A LAPSE DT150A

WIND SPEED(MPH)

WIND DIRECTION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	50	36	19	6	0	0	91
NNE	21	25	1	0	0	0	47
NE	19	17	0	0	0	0	36
ENE	26	18	4	0	1	0	49
E	43	22	16	3	3	1	98
ESE	48	43	18	5	0	0	106
SE	54	46	12	2	0	0	94
SSE	29	29	16	0	0	0	74
S	37	48	50	4	0	0	119
SSW	28	53	27	5	0	0	113
SW	26	43	43	7	0	0	119
WSW	17	48	50	0	2	0	117
W	18	54	112	86	14	10	294
WNW	20	28	97	99	54	14	312
NW	28	60	77	77	46	0	288
NNW	13	57	48	30	11	1	160
TOTAL	421	627	559	332	131	34	2104

PERIODS OF CALM(HOURS) 2
VARIABLE DIRECTION 116
HOURS OF MISSING DATA 55

SITE THREE MILE ISLD. UNIT 08/09/85 09.14

HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 85040101-85063024
STABILITY CLASS A DT/DZ
ELEVATION SPEED SP100A DIRECTION DI100A LAPSE DT150A

WIND SPEED(MPH)

WIND DIRECTION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	8	12	11	2	0	0	31
NNE	1	3	1	0	0	0	5
NE	2	2	0	0	0	0	4
ENE	2	0	2	0	0	0	12
E	4	8	4	0	0	0	16
ESE	6	10	12	0	0	0	28
SE	5	4	3	0	0	0	12
SSE	7	5	1	0	0	0	13
S	4	9	17	2	0	0	32
SSW	5	11	17	1	0	0	34
SW	7	14	20	5	0	0	46
WSW	8	12	6	5	2	0	33
W	8	5	40	12	1	0	66
WNW	9	14	19	9	0	0	51
NW	7	21	35	17	2	0	82
NNW	12	23	34	6	0	0	75
TOTAL	93	161	222	59	5	0	542

PERIODS OF CALM(HOURS) 2
VARIABLE DIRECTION 33
HOURS OF MISSING DATA 7

SITE THREE MILE ISLD. UNIT 08/09/85 09.14

HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 85040101-85063024
STABILITY CLASS B DT/DZ
ELEVATION SPEED SP100A DIRECTION DI100A LAPSE DT150A

WIND SPEED(MPH)

WIND DIRECTION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	1	1	0	0	0	0	2
NNE	0	4	0	0	0	0	4
NE	2	0	0	0	0	0	2
ENE	0	4	1	0	0	0	5
E	1	5	3	0	0	0	9
ESE	1	2	5	1	0	0	9
SE	0	2	1	0	0	0	3
SSE	1	4	2	0	0	0	7
S	3	3	3	2	0	0	11
SSW	3	4	5	3	0	0	15
SW	2	6	2	0	0	0	10
WSW	3	4	1	2	0	0	10
W	2	2	2	8	1	0	15
WNW	1	3	1	3	0	0	8
NW	2	2	3	3	0	0	10
NNW	3	2	0	0	0	0	5
TOTAL	25	48	29	22	1	0	125

PERIODS OF CALM(HOURS) 2
VARIABLE DIRECTION 10
HOURS OF MISSING DATA 7

SITE THREE MILE ISLD. UNIT 08/09/85 09.15

HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 85040101-85063024
STABILITY CLASS C DT/DZ
ELEVATION SPEED SP100A DIRECTION DI100A LAPSE DT150A

WIND SPEED(MPH)

WIND DIRECTION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	1	0	1	0	0	0	2
NNE	0	0	0	0	0	0	0
NE	2	0	0	0	0	0	2
ENE	0	3	0	0	0	0	3
E	2	1	2	0	0	0	5
ESE	1	0	3	0	0	0	4
SE	4	1	1	0	0	0	6
SSE	0	2	1	0	0	0	3
S	0	1	4	1	0	0	6
SSW	2	2	2	0	0	0	6
SW	0	2	1	1	0	0	4
WSW	0	0	0	0	0	0	0
W	1	2	2	4	0	0	9
WNW	2	1	2	1	0	0	6
NW	0	1	1	0	0	0	2
NNW	0	0	1	0	0	0	1
TOTAL	15	16	21	7	0	0	59

PERIODS OF CALM(HOURS) 2
VARIABLE DIRECTION 5
HOURS OF MISSING DATA 7

SITE THREE MILE ISLD. UNIT 08/09/85 09.15

HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 85040101-85063024
STABILITY CLASS D DT/DZ
ELEVATION SPEED SP100A DIRECTION DI100A LAPSE DT150A

WIND SPEED(MPH)

WIND DIRECTION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	9	11	4	2	0	0	26
NNE	15	12	0	0	0	0	27
NE	7	16	2	0	0	0	25
ENE	7	19	5	0	0	0	31
E	8	35	12	0	0	0	55
ESE	7	20	8	6	0	0	41
SE	8	14	9	1	0	0	32
SSE	8	20	5	0	0	0	33
S	11	21	9	1	0	0	42
SSW	7	16	13	2	0	0	41
SW	6	12	4	1	0	0	23
WSW	6	18	6	7	2	0	31
W	6	19	27	17	5	0	74
WNW	2	7	20	13	1	0	43
NW	2	3	11	5	0	0	21
NNW	7	6	5	3	2	0	23
TOTAL	116	244	148	58	10	0	568

PERIODS OF CALM(HOURS) 2
VARIABLE DIRECTION 32
HOURS OF MISSING DATA 7

SITE THREE MILE ISLD UNIT. 00/00/85 00:18

HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 8504181-8506 3824
STABILITY CLASS E DT/DZ
ELEVATION SPEED SP100A DIRECTION DI100A LAPSE DT150A

WIND DIRECTION	WIND SPEED(MPH) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	14	21	6	1	1	0	43
NNE	12	18	1	0	0	0	31
NE	9	5	0	0	0	0	14
ENE	12	6	0	0	0	0	20
E	16	11	0	0	0	0	27
ESE	16	4	2	0	0	0	22
SE	10	5	1	0	0	0	16
SSE	9	7	5	0	0	0	21
S	8	17	10	3	0	0	38
SSW	14	33	11	3	0	0	61
SW	18	16	6	2	0	0	34
WSW	21	24	8	0	0	0	53
W	8	15	11	1	0	0	35
WNW	6	6	8	1	0	0	21
NW	5	6	10	5	0	0	26
NNW	10	25	4	0	0	0	39
TOTAL	180	221	83	16	1	0	581

PERIODS OF CALM(HOURS) 2
VARIABLE DIRECTION 53
HOURS OF MISSING DATA 7

SITE THREE MILE ISLD UNIT. 00/00/85 00:16

HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 8504181-8506 3824
STABILITY CLASS F DT/DZ
ELEVATION SPEED SP100A DIRECTION DI100A LAPSE DT150A

WIND DIRECTION	WIND SPEED(MPH) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	7	0	0	0	0	15
NNE	4	5	0	0	0	0	9
NE	5	2	0	0	0	0	7
ENE	0	4	0	0	0	0	13
E	0	6	0	0	0	0	15
ESE	10	2	0	0	0	0	12
SE	7	2	1	0	0	0	10
SSE	8	4	0	0	0	0	12
S	20	5	0	0	0	0	25
SSW	13	12	3	0	0	0	28
SW	7	5	2	0	0	0	14
WSW	18	12	2	0	0	0	32
W	11	6	0	0	0	0	17
WNW	4	4	0	0	0	0	8
NW	2	4	1	0	0	0	7
NNW	6	2	3	0	0	0	11
TOTAL	141	82	12	0	0	0	235

PERIODS OF CALM(HOURS) 2
VARIABLE DIRECTION 34
HOURS OF MISSING DATA 7

SITE THREE MILE ISLD UNIT. 00/00/85 00:17

HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 8504181-8506 3824
STABILITY CLASS G DT/DZ
ELEVATION SPEED SP100A DIRECTION DI100A LAPSE DT150A

WIND DIRECTION	WIND SPEED(MPH) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	5	0	1	0	0	0	6
NNE	5	1	0	0	0	0	6
NE	2	1	0	0	0	0	3
ENE	6	2	0	0	0	0	8
E	6	2	0	0	0	0	8
ESE	7	3	0	0	0	0	10
SE	11	0	0	0	0	0	11
SSE	10	0	0	0	0	0	10
S	10	3	0	0	0	0	21
SSW	10	5	1	0	0	0	16
SW	7	3	0	0	0	0	10
WSW	3	3	0	0	0	0	6
W	9	4	0	0	0	0	13
WNW	4	3	0	1	0	0	8
NW	1	5	1	0	0	0	7
NNW	1	4	1	0	0	0	6
TOTAL	105	39	4	1	0	0	149

PERIODS OF CALM(HOURS) 2
VARIABLE DIRECTION 16
HOURS OF MISSING DATA 7

SITE THREE MILE ISLD UNIT. 00/00/85 00:17

HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 8504181-8506 3824
STABILITY CLASS ALL DT/DZ
ELEVATION SPEED SP100A DIRECTION DI100A LAPSE DT150A

WIND DIRECTION	WIND SPEED(MPH) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	44	52	23	5	1	0	125
NNE	37	43	2	0	0	0	82
NE	20	26	2	0	0	0	57
ENE	36	48	8	0	0	0	92
E	46	68	21	0	0	0	135
ESE	48	41	38	7	0	0	126
SE	45	28	16	1	0	0	90
SSE	43	42	14	0	0	0	99
S	64	50	43	0	0	0	175
SSW	54	86	52	0	0	0	201
SW	39	58	35	0	0	0	141
WSW	50	65	23	14	4	0	165
W	45	53	82	42	7	0	229
WNW	28	38	58	28	1	0	145
NW	19	42	62	30	2	0	155
NNW	39	62	48	0	2	0	160
TOTAL	675	811	511	163	17	0	2177

PERIODS OF CALM(HOURS) 2
VARIABLE DIRECTION 106
HOURS OF MISSING DATA 7