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THREE MILE ISLAND UNIT II LIQUID AND GASEOUS EFFLUENTS

See Tables (2) and (3) for typical LLD values

TYPE EFFLUENT	October		November		December		4th Quarter
	Unit II	EPICOR II	Unit II	EPICOR II	Unit II	EPICOR II	4th Quarter
I. Liquid Effluent: *							
A) Fission and activation products (not including ^3H , gases & α)	No Liquid Releases		No Liquid Releases		7.66E-6 6.33E-13		7.66E-6 2.13E-13
1) Total Release (Ci) **							
2) Concentration ($\mu\text{Ci/cc}$)							
B) Tritium	No Liquid Releases		No Liquid Releases		3.24E-5 < LLD		3.24E-5 < LLD
1) Total Release (Ci)							
2) Concentration ($\mu\text{Ci/cc}$)							
C) Dissolved and entrained gases	No Liquid Releases		No Liquid Releases		< LLD < LLD		< LLD < LLD
1) Total Release							
2) Concentration ($\mu\text{Ci/cc}$)							
D) Gross radioactivity					< LLD		< LLD
1) Total Release (Ci)							
E) Volume of waste released** prior to dilution (cc)	No Liquid Releases		No Liquid Releases		1.762E7		1.762E7
F) Volume of dilution water (Flow to river) (cc)	4.29E12		4.29E12		4.377E12		1.30E13
II. Gaseous Effluent:							
A) Fission & activation gases							
1) Total Release (Ci)	3.22E1	1.52E1	8.18E0	2.25E0	5.89E0	2.48E0	6.62E1
2) Release Rate ($\mu\text{Ci/sec}$)	1.20E1	5.67E0	3.16E0	8.68E-1	2.19E0	9.26E-1	8.33E0
B) Iodine-131 Released (Ci)	As of 1/1/81 there was less than 1E-15 Ci of I-131 left in Unit II, therefore, no release of I-131 can be detected from Unit II.						
C) Particulates with half lives > 8 days							
1) Total Release including alpha (Ci)	1.13E-7	1.22E-7	9.87E-8	5.82E-8	2.95E-6	1.69E-6	5.03E-6
2) Release Rate ($\mu\text{Ci/sec}$)	4.22E-8	4.55E-8	3.81E-8	2.25E-8	1.10E-6	6.31E-7	6.33E-7
3) Gross Alpha Radioactivity (Ci)	9.73E-9	LLD	1.61E-9	1.20E-9	3.00E-9	< LLD	1.55E-8
D) Tritium							
1) Total Release	1.17E1	1.33E-1	1.88E0	6.5E-3	1.02E1	2.0E-2	2.39E1
2) Release Rate ($\mu\text{Ci/sec}$)	4.37E0	4.97E-2	7.25E-1	2.51E-3	3.79E0	7.47E-3	3.01E0
E) Seconds in Period Reported	2.6784E6		2.592E6		2.6784E6		7.9488E6

*Includes only those releases which were found to contain radioisotopic concentrations > LLD

*Includes Industrial Waste and Sanitary Waste

Interpretation of Dose Summary Table

The Dose Summary Table (Table 1) presents the maximum hypothetical doses to an individual and general population resulting from the release of gaseous and liquid effluents from TMI-2 and EPICOR 2 during the fourth quarter reporting period of 1982.

1. Liquid (Individual)

The first two lines of Table 1 present the maximum hypothetical dose to an individual. Presented are the whole body and critical organ doses. Calculations are performed on the four age groups and eight organs recommended in Regulatory Guide 1.109. The pathways considered for TMI are drinking water, consumption of fish, and standing on the shoreline influenced by TMI effluents. The latter two pathways are considered to be the primary recreational activities associated with the Susquehanna River in the vicinity of TMI. The "receptor" would be that individual who consumes water from the Susquehanna River, fish residing in the plant discharge, while occupying an area of shoreline influenced by the plant discharge.

After calculating the doses to all age groups for all eight organs resulting from the three pathways described above, the Dose Summary Table presents the maximum whole body dose and affected age group along with the organ and associated age group that received the largest dose.

For the fourth quarter of 1982, the calculated maximum whole body dose received by anyone would have been $8.89\text{E-}05$ mrem to an adult. Similarly, the maximum exposed organ would have been $1.42\text{E-}04$ mrem to the liver of a teenager.

2. Gaseous (Individual)

There are seven major pathways considered in the dose calculations for gaseous effluents. These are: (1) plume, (2) inhalation, consumption of (3) cow milk, (4) goat milk, (5) vegetables, (6) meat, and (?) standing on contaminated ground.

Lines 3 and 4 present the maximum plume exposure at the site boundary. The notation of "air dose" is interpreted to mean that these doses are not to an individual, but are considered to be the maximum dose that would have occurred at the site boundary. The Dose Summary Table presents the distance in meters to the site boundary in the affected sector (compass point). It should be noted that real-time meteorology was used in all dose calculations for gaseous effluents.

With respect to the gaseous release for the fourth quarter of 1982, the plume exposure at the site boundary would have been $6.54\text{E-}05$ mrad and $7.42\text{E-}03$ mrad, gamma and beta dose respectively.

Lines 5 and 6 present the calculated dose to the closest receptor (individual) in the affected sector(s). The location of the receptor is described by both distance (meters) and direction from the site.

Plume exposure to an individual, regardless of age, from gaseous effluents during the fourth quarter were $2.74E-05$ mrem and $3.30E-03$ mrem, whole body and skin exposure, respectively.

The Iodines and Particulates section described in line 7 represents the maximum exposed organ due to iodine and particulates. This does not include the whole body plume exposure which was separated out by line 5. The doses presented in this section again reflect the maximum exposed organ for the appropriate age group.

The fourth quarter dose due to the iodines and particulates would have resulted in a maximum dose of $4.44E-03$ mrem to the liver of a child residing 3200 meters from the site in the north sector. No other organ of any age group would have received a dose greater than this.

3. Liquid and Gaseous (Population)

Lines 8-11 present the person-rem doses resulting from the liquid and gaseous effluents. These doses are summed over all pathways and the affected populations. Liquid person-rem is based upon the population encompassed within the region from the TMI outfall extending down to the Chesapeake Bay. The person-rem for gaseous effluents are based upon the 1980 population projections of the FSAR and consider the population out to a distance of 50 miles around TMI. Population doses are summed over all distances and sectors to give an aggregate dose.

Based upon the calculations performed for the fourth quarter, liquid effluents resulted in whole body population dose of $1.7E-05$ person-rem with a maximum critical organ population dose to the liver of $3.6E-05$ person-rem. Gaseous effluents resulted in whole body and maximum critical organ (GI, liver, kidney, thyroid, and skin) with doses of $1.4E-01$ person-rem for each case.

TABLE 1

SUMMARY OF
MAXIMUM INDIVIDUAL DOSES
FOR UNIT 2

Accumulations for Periods:

Liquid - October 1, 1982 through December 31, 1982
Gaseous - October 1, 1982 through December 31, 1982
Air - October 1, 1982 through December 31, 1982

<u>Effluent</u>	<u>Applicable Organ</u>	<u>Estimated Dose (MREM)</u>	<u>Age Group</u>	<u>Location Dist Dir (M) (Toward)</u>	<u>% Applicable Limit</u>	<u>Limit (MR)</u>
Liquid	Total Body	8.89E-05	Adult	Receptor 1	3.0E-03	3.0
Liquid	Liver	1.42E-04	Teen	Receptor 1	1.4E-03	10.0

Noble Gas	Air Dose (Gamma-MRAD)	6.54E-05		2413 N	6.5E-04	10.0
Noble Gas	Air Dose (Beta-MRAD)	7.42E-03		2413 N	3.7E-02	20.0
Noble Gas	Total Body	2.74E-05	All	3200 N	5.5E-04	5.0
Noble Gas	Skin	3.30E-03	All	3200 N	2.2E-02	15.0

Iodine & Particulates	Liver	4.44E-03	Child	3200 N	3.0E-02	15.0

SUMMARY OF
POPULATION DOSES

Accumulations for Periods:

Liquid - October 1, 1982 through December 31, 1982
Gaseous - October 1, 1982 through December 31, 1982

<u>Effluent</u>	<u>Applicable Organ</u>	<u>Estimated Population Dose (Person-REM)</u>
Liquid	Total Body	1.7E-05
Liquid	Liver	3.6E-05
Gaseous	Total Body	1.4E-01
Gaseous	TB, GI, Liver, Kidney, Thy, Skin	1.4E-01

EFFLUENT AND WASTE DISPOSAL SEMI ANNUAL REPORT

July 1, 1982 - December 31, 1982

SUPPLEMENTAL INFORMATION

FACILITY IMI-Unit-IILICENSEE DPR-73-320

1. Regulatory Limits

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

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 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 Counting
- 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	<u>3rd Quarter</u>	<u>4th Quarter</u>
1. Number of batch releases:	10	5
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

5. Batch Releases (cont.)

	<u>1982</u> <u>3rd Quarter</u>	<u>1982</u> <u>4th Quarter</u>
B. Gaseous		
1. Number of batch releases:	4	0
2. Total time period for batch releases:	2.84E4min	N/A
3. Maximum time period for a batch release:	2.02E4min	N/A
4. Average time period for batch release:	7.10E3min	N/A
5. Minimum time period for a batch release:	9.60E2min	N/A

6. Abnormal Releases

A. Liquid

1. Number of releases:	0	0
2. Total activity released:	N/A	N/A

B. Gaseous

1. Number of releases:	0	0
2. Total activity released:		

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

	UNIT	QUARTER	QUARTER	EST. TOTAL
	II	3rd	4th	ERROR, %

A. Fission & activation gases

1. Total release	Ci	6.64E1	4.63E1	+ 60%
2. Average release rate for period	µCi/sec.	8.35E0	5.82E0	80% of Tech. Spec. Limit=5.76E3 µCi/sec for Kr-85
3. Percent of Tech Spec limit	%	1.45E-1	1.01E-1	

B. Iodines

1. Total Iodine-131	Ci	< LLD	< LLD	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	1.75E-6	3.16E-6	+ 60%
2. Average release rate for period	µCi/sec.	2.20E-7	3.98E-7	80% of Tech. Spec. Limit=1.92E-2 µCi/sec
3. Percent of Tech Spec limit	%	1.15E-3	2.07E-3	
4. Gross alpha radioactivity	Ci	5.17E-8	1.43E-8	

D. Tritium

1. Total release	Ci	3.02E1	2.38E1	+ 60%
2. Average release rate for period	µCi/sec.	3.80E0	2.99E0	80% of Tech. Spec. Limit=3.84E3 µCi/sec for H-3
3. Percent of Tech Spec limit	%	9.90E-2	7.80E-2	

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

Nuclides Released	UNIT II	Continuous Mode		Batch Mode	
		1982 3rd QUARTER	1982 4th QUARTER	1982 3rd QUARTER	1982 4th QUARTER

1. Fission gases

krypton-85	Ci	1.63E1	2.04E0	5.01E1	4.42E1
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	< LLD	< LLD	< LLD	< LLD
Total for period	Ci	1.63E1	2.04E0	5.01E1	4.42E1

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

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

Nuclides Released	UNIT II	Continuous Mode		Batch Mode	
		1982 3rd QUARTER	1982 4th QUARTER	1982 3rd QUARTER	1982 4th QUARTER

3. Particulates

strontium-89	Ci	< LLD	< LLD	< LLD	< LLD
strontium-90	Ci	< LLD	< LLD	< LLD	< LLD
cesium-134	Ci	< LLD	< LLD	< LLD	< LLD
cesium-137	Ci	1.35E-6	3.54E-8	< LLD	< LLD
barium-lanthanum-140	Ci	< LLD	< LLD	< LLD	< LLD
Others (specify)					
Unidentified	Ci	3.47E-7	3.11E-6	< LLD	< LLD

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

Tech. Spec. Limits= 10 CFR 20, Appendix B, Table II, Column 2

	UNIT	1982 3rd QUARTER	1982 4th QUARTER	EST. TOTAL ERROR %
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A. Fission and activation products

1. Total releases (not including tritium, gases, alpha)	Ci	1.27E-6	7.66E-6	± 60%
2. Average diluted concentration during period	µCi/ml	9.18E-14	2.13E-13	Based on 2E-5 µCi/ml (Cs-137)
3. Percent of applicable limit	%	4.59E-7	1.07E-6	

B. Tritium

1. Total release	Ci	1.15E-4	3.24E-5	± 60%
2. Average diluted concentration during period	µCi/ml	8.32E-12	< LLD	Based on 3E-3 µCi/ml (H-3)
3. Percent of applicable limit	%	2.77E-7	N/A	

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	< LLD	< LLD	± 60%
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E. Volume of waste released* (prior to dilution)	liters	4.07E4	1.76E4	25%
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F. Volume of dilution water used during period	liters	1.38E10	1.30E10	10%
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*Includes only those releases mentioned in Note (1) which were found to contain radioisotopic concentrations > LLD.

NOTE: (1) There were no liquid releases from the radwaste system during the second half of 1982, 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 both included in item A.2. No credit is taken for any loss during processing.

NOTE: (2) Refer to Table 5 for typical LLD Values.

TABLE 2B
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
LIQUID EFFLUENTS *

Nuclides Released	UNIT II	Continuous Mode		Batch Mode	
		1982 3rd QUARTER	1982 4th QUARTER	1982 3rd QUARTER	1982 4th QUARTER
strontium-89	C1	See Note(2)	See Note (2)	< LLD	< LLD
strontium-90	C1			< LLD	< LLD
cesium-134	C1			< LLD	< LLD
cesium-137	C1			1.27E-6	5.26E-6
iodine-131	C1			< LLD	< LLD
cobalt-58	C1			< LLD	< LLD
cobalt-60	C1			< LLD	< LLD
iron-59	C1			< LLD	< LLD
zinc-65	C1			< LLD	< LLD
managanese-54	C1			< LLD	< LLD
chromium-51	C1			< LLD	< LLD
zirconium-niobium-95	C1			< LLD	< LLD
molybdenum-99	C1			< LLD	< LLD
technetium-99m	C1			< LLD	< LLD
barium-lanthanum-140	C1			< LLD	< LLD
cerium-141	C1			< LLD	< LLD
Other (specify)	C1				
	C1				
	C1				
	C1				
	C1				
	C1				
Unidentified	C1			< LLD	2.40E-6
Total for period	C1			1.27E-6	7.66E-6
xenon-133	C1			< LLD	< LLD
xenon-135	C1			< LLD	< LLD

NOTE: Refer to Table 5 for Typical LLD Values.

NOTE: (2) There was no continuous release of effluent from Unit II during the second half of 1982.

*Includes only those releases mentioned in Notes (1) which were found to contain radio-isotopic concentrations > LLD.

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

July to December 1982

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

1. Type of waste	UNIT	II	6 month period	EST. TOTAL ERROR %
a. Spent resins, filter sludges, evaporator bottoms, etc.	N/A	m ³ C1		
b. Dry compressible waste, contaminated equipment, etc.	114 3.588	m ³ C1	114.31 3.588	5%
c. Irradiated components, control rods, etc.	N/A	m ³ C1		
d. Other (describe)	N/A	m ³ C1		

2. Estimate of major nuclide composition (by type of waste)		
a. N/A	%	
	%	
	%	
	%	
b. Cs-137	47.10 %	
Ba-137m	44.50 %	
Cs-134	3.77 %	
Sr-90	2.34 %	
Y-90	2.34 %	
c. N/A	%	
	%	
	%	
	%	
	%	
d. N/A	%	
	%	
	%	
	%	

3. Solid Waste Disposition	Mode of Transportation	Destination
Number of Shipments		
5	Tractor Trailer (Van)	Hanford, Washington

B. Irradiated Fuel Shipments (Disposition)

Number of Shipments	Mode of Transportation	Destination

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 sec	
	Sample Counters: γ emitters	25% Ge(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-10	Air bubbled thru water by a fritted disc or Fisher Milligan gas washer
Krypton-85	^{85}Kr	5E-6	Marinelli
Krypton-85m	^{85m}Kr	2E-8	"
Krypton-87	^{87}Kr	6E-8	"
Krypton-88	^{88}Kr	5E-8	"
Xenon-133	^{133}Xe	4E-8	"
Xenon-133m	^{133m}Xe	1E-7	"
Xenon-135	^{135}Xe	2E-8	"
Xenon-135m	^{135m}Xe	3E-7	"
Xenon-138	^{138}Xe	3E-7	"
Iodine-131	^{131}I	2E-8	"
Iodine-133	^{133}I	3E-8	"
Iodine-135	^{135}I	2E-7	"
Iodine-131	^{131}I	3E-14	Charcoal Filter
Iodine-133	^{133}I	4E-14	"
Iodine-135	^{135}I	3E-13	"
Manganese-54	^{54}Mn	3E-14	Particulate Filter Paper
Iron-59	^{59}Fe	8E-14	"
Cobalt-58	^{58}Co	3E-14	"
Cobalt-60	^{60}Co	5E-14	"
Zinc-65	^{65}Zn	9E-14	"
Strontium-89	^{89}Sr	2E-14	"
Strontium-90	^{90}Sr	2E-14	"
Molybdenum-99	^{99}Mo	2E-14	"
Ruthenium-103	^{103}Ru	2E-14	"
Silver-110m	^{110m}Ag	3E-14	"
Cesium-134	^{134}Cs	4E-14	"
Cesium-137	^{137}Cs	3E-14	"
Cerium-141	^{141}Ce	3E-14	"
Cerium-144	^{144}Ce	9E-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% Ce(Li)
for Gamma Emitters

<u>ISOTOPE</u>		<u>µCi/cc LLD</u>	<u>NOTES</u>
Gross Alpha	α	1E-7	Counted with proportional counter
Gross Beta	β	6E-8	Counted with proportional counter
Tritium	³ H	3E-6	Counted with Liquid Scintillation counter
Krypton-85	⁸⁵ Kr	4E-5	
Xenon-131m	^{131m} Xe	5E-6	
Xenon-133	¹³³ Xe	3E-7	
Xenon-135	¹³⁵ Xe	1E-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	1E-7	
Technetium-99m	^{99m} Tc	1E-7	
Silver-110m	^{110m} 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	3E-7	
Cerium-141	¹⁴¹ Ce	3E-7	
Cerium-144	¹⁴⁴ Ce	9E-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 Radiation Management Corporation for analysis. therefore these are Radiation Management Corporation LLD values.
Iron-55	⁵⁵ Fe	5E-8	
Strontium-89	⁸⁹ Sr	5E-8	
Strontium-90	⁹⁰ Sr	5E-8	

EFFLUENT AND WASTE DISPOSAL SEMI ANNUAL REPORT

July 1, 1982 - December 31, 1982

SUPPLEMENTAL INFORMATION

FACILITY 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,
- d. Liquid effluents: Article 2.3

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 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 Counting
- d. Liquid effluents: N/A - See 5A below

5. Batch Releases

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

A. Liquid NO LIQUID RELEASES FOR EPICOR II FOR THE SECOND HALF OF 1982

- 1. Number of batch releases: 0
- 2. Total time period for batch release: N/A
- 3. Maximum time period for a batch release: N/A
- 4. Average time period for batch releases: N/A
- 5. Minimum time period for a batch release:
- 6. Average stream flow during periods of release of effluent into flowing stream: N/A

N/A=Not Applicable

5. Batch Releases (cont.) No batch releases for EPICOR II for the second half of 1982

B. Gaseous

- 1. Number of batch releases: 0
- 2. Total time period for batch releases: N/A
- 3. Maximum time period for a batch release: N/A
- 4. Average time period for batch release: N/A
- 5. Minimum time period for a batch release: N/A

6. Abnormal Releases

A. Liquid None for EPICOR II for the second-half of 1982

- 1. Number of releases: 0
- 2. Total activity released: N/A

B. Gaseous

- 1. Number of releases: 0
- 2. Total activity released: N/A

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

	UNIT	1982	1982	EST. TOTAL
	EPICOR II	3rd	4th	ERROR, %
		QUARTER	QUARTER	

A. Fission & activation gases

1. Total release	Ci	2.21E2	1.99E1	± 60%
2. Average release rate for period	µCi/sec.	2.78E1	2.51E0	Tech. Spec. Limit= 2.4E4 M ³ /sec= 7.3E3 µCi/sec
3. Percent of Tech Spec limit	%	3.81E-1	3.44E-2	

B. Iodines

1. Total Iodine-131	Ci	< LLD	< LLD	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	2.00E-7	1.87E-6	± 60%
2. Average release rate for period	µCi/sec.	2.52E-8	2.35E-7	Tech. Spec. Limit= 0.024 µCi/sec
3. Percent of Tech Spec limit	%	1.05E-4	9.80E-4	
4. Gross alpha radioactivity	Ci	2.17E-9	1.20E-9	

D. Tritium

1. Total release	Ci	3.07E-2	1.60E-1	± 60%
2. Average release rate for period	µCi/sec.	3.86E-3	2.01E-2	Tech. Spec. Limit= 2.4E4 M ³ /sec= 4.8E3 µCi/sec
3. Percent of Tech Spec limit	%	8.04E-5	4.18E-4	

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

Nuclides Released	UNIT II	Continuous Mode		Batch Mode	
		1982 3rd QUARTER	1982 4th QUARTER	1982 3rd QUARTER	1982 4th QUARTER
1. Fission gases		No batch releases for EPICO II in the second half of 19			
krypton-85	Ci	2.21E2	1.99E1		
krypton-85m	Ci	< LLD	< LLD		
krypton-87	Ci	< LLD	< LLD		
krypton-88	Ci	< LLD	< LLD		
xenon-133	Ci	< LLD	< LLD		
xenon-135	Ci	< LLD	< LLD		
xenon-135m	Ci	< LLD	< LLD		
xenon-138	Ci	< LLD	< LLD		
Others (specify)	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
Unidentified	Ci	< LLD	< LLD		
Total for period	Ci	2.21E2	1.99E1		

2. Iodines

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

N/A= Not Applicable

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

Nuclides Released	UNIT EPICOR II	Continuous Mode		Batch Mode	
		3rd QUARTER 1982	4th QUARTER 1982	3rd QUARTER 1982	4th QUARTER 1982

3. Particulates

No batch releases for EPICOR II for the second half of 1982

strontium-89	Ci	< LLD	< LLD		
strontium-90	Ci	< LLD	< LLD		
cesium-134	Ci	< LLD	< LLD		
cesium-137	Ci	2.70E-8	< LLD		
barium-lanthanum-140	Ci	< LLD	< LLD		
Others (specify)					
Unidentified		1.71E-7	1.87E-6		

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

No liquid releases for EPICOR II for the second half of 1982	UNIT EPICOR II	QUARTER	QUARTER	EST. TOTAL ERROR %
--	-------------------	---------	---------	-----------------------

A. Fission and activation products

1. Total releases (not including tritium, gases, alpha)	Ci			
2. Average diluted concentration during period	μCi/ml			
3. Percent of applicable limit	%			

B. Tritium

1. Total release	Ci			
2. Average diluted concentration during period	μCi/ml			
3. Percent of applicable limit	%			

C. Dissolved and entrained gases

1. Total release	Ci			
2. Average diluted concentration during period	μCi/ml			
3. Percent of applicable limit	%			

D. Gross alpha radioactivity

1. Total release	Ci			
------------------	----	--	--	--

E. Volume of waste released (prior to dilution)	liters			
---	--------	--	--	--

F. Volume of dilution water used during period	liters			
--	--------	--	--	--

TABLE 2B
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT
LIQUID EFFLUENTS

No liquid releases for EPICOR II for the second half of 1982

Nuclides Released	UNIT	Continuous Mode		Batch Mode	
		QUARTER	QUARTER	QUARTER	QUARTER
strontium-89	Ci				
strontium-90	Ci				
cesium-134	Ci				
cesium-137	Ci				
iodine-131	Ci				
cobalt-58	Ci				
cobalt-60	Ci				
iron-59	Ci				
zinc-65	Ci				
managanese-54	Ci				
chromium-51	Ci				
zirconium-niobium-95	Ci				
molybdenum-99	Ci				
technetium-99m	Ci				
barium-lanthanum-140	Ci				
cerium-141	Ci				
Other (specify)	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
	Ci				
Unidentified	Ci				
Total for period	Ci				
xenon-133	Ci				
xenon-135	Ci				

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

EPICOR
 July 1, 1982 to December 31, 1982

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

1. Type of waste	UNIT	II	6 month period	EST. TOTAL ERROR %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m ³			
	Ci			
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. N/A	%	
	%	
	%	
	%	
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
NONE		

B. Irradiated Fuel Shipments (Disposition)

Number of Shipments	Mode of Transportation	Destination

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 sec	
	Sample Counters: γ emitters	25% Ge(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-10	Air bubbled thru water by a fritted disc or Fisher Milligan gas washer
Krypton-85	^{85}Kr	5E-6	Marinelli
Krypton-85m	$^{85\text{m}}\text{Kr}$	2E-8	"
Krypton-87	^{87}Kr	6E-8	"
Krypton-88	^{88}Kr	5E-8	"
Xenon-133	^{133}Xe	4E-8	"
Xenon-133m	$^{133\text{m}}\text{Xe}$	1E-7	"
Xenon-135	^{135}Xe	2E-8	"
Xenon-135m	$^{135\text{m}}\text{Xe}$	3E-7	"
Xenon-138	^{138}Xe	3E-7	"
Iodine-131	^{131}I	2E-8	"
Iodine-133	^{133}I	3E-8	"
Iodine-135	^{135}I	2E-7	"
Iodine-131	^{131}I	3E-14	Charcoal Filter
Iodine-133	^{133}I	4E-14	"
Iodine-135	^{135}I	3E-13	"
Manganese-54	^{54}Mn	3E-14	Particulate Filter Paper
Iron-59	^{59}Fe	8E-14	"
Cobalt-58	^{58}Co	3E-14	"
Cobalt-60	^{60}Co	5E-14	"
Zinc-65	^{65}Zn	9E-14	"
Strontium-89	^{89}Sr	2E-14	"
Strontium-90	^{90}Sr	2E-14	"
Molybdenum-99	^{99}Mo	2E-14	"
Ruthenium-103	^{103}Ru	2E-14	"
Silver-110m	$^{110\text{m}}\text{Ag}$	3E-14	"
Cesium-134	^{134}Cs	4E-14	"
Cesium-137	^{137}Cs	3E-14	"
Cerium-141	^{141}Ce	3E-14	"
Cerium-144	^{144}Ce	9E-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	3E-6	Counted with Liquid Scintillation counter
Krypton-85	^{85}Kr	4E-5	
Xenon-131m	$^{131\text{m}}\text{Xe}$	5E-6	
Xenon-133	^{133}Xe	3E-7	
Xenon-135	^{135}Xe	1E-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	1E-7	
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	3E-7	
Cerium-141	^{141}Ce	3E-7	
Cerium-144	^{144}Ce	9E-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 Radiation Management Corporation for analysis. therefore these are Radiation Management Corporation LLD values.
Iron-55	^{55}Fe	5E-8	
Strontium-89	^{89}Sr	5E-8	
Strontium-90	^{90}Sr	5E-8	

- Attachment 1 - Joint frequency table of wind speed and direction from 100 ft. versus ΔT 150-33 ft. for the third quarter of 1982 (7/1/82 - 9/30/82).
- Attachment 2 - Joint frequency table of wind speed and direction from 100 ft. versus ΔT 150-33 ft. for Unit 1 specific release dates during the third quarter of 1982.
- Attachment 3 - Joint frequency table of wind speed and direction from 100 ft. versus ΔT 150-33 ft. for the fourth quarter of 1981 (10/1/82 - 12/31/82).
- Attachment 4 - Joint frequency table of wind speed and direction from 100 ft. versus ΔT 150-33 ft. for Unit 1 specific release dates during the fourth quarter of 1982.

SITE, THREE MILE ISLD. HOURS AT EACH WIND SPEED AND DIRECTION 01/28/83 11.27
 PERIOD OF RECORD = 82878181-82893824
 STABILITY CLASS, A DT/DZ
 ELEVATION, SPEED, SPI800A DIRECTION, DI180A LAPSE, DT158A

WIND DIRECTION	WIND SPEED (MPH)							>24 TOTAL
	1-3	4-7	8-12	13-18	19-24			
N	0	26	4	0	0	0	0	38
NNE	3	5	2	0	0	0	0	10
NE	1	6	0	0	0	0	0	7
ENE	0	2	0	0	0	0	0	2
E	3	4	0	0	0	0	0	7
ESE	1	4	0	0	0	0	0	5
SE	0	10	0	0	0	0	0	10
SSE	1	1	0	0	0	0	0	2
S	3	2	2	0	0	0	0	7
SSW	3	18	2	0	0	0	0	23
SW	7	17	1	0	0	0	0	25
WSW	0	0	1	0	0	0	0	10
W	10	11	3	2	0	0	0	26
WNW	11	1	16	0	0	0	0	38
NW	10	31	0	0	0	0	0	81
NNW	23	45	12	0	0	0	0	80
TOTAL	102	282	74	2	0	0	0	388

PERIODS OF CALM (HOURS), 2
 VARIABLE DIRECTION, 21
 HOURS OF MISSING DATA, 58

SITE, THREE MILE ISLD. HOURS AT EACH WIND SPEED AND DIRECTION 01/28/83 11.28
 PERIOD OF RECORD = 82878181-82893824
 STABILITY CLASS, C DT/DZ
 ELEVATION, SPEED, SPI800A DIRECTION, DI180A LAPSE, DT158A

WIND DIRECTION	WIND SPEED (MPH)							>24 TOTAL
	1-3	4-7	8-12	13-18	19-24			
N	0	2	0	0	0	0	0	2
NNE	0	0	0	0	0	0	0	0
NE	3	3	0	0	0	0	0	6
ENE	2	0	0	0	0	0	0	2
E	0	2	0	0	0	0	0	2
ESE	0	1	0	0	0	0	0	1
SE	1	4	0	0	0	0	0	5
SSE	0	4	0	0	0	0	0	4
S	0	2	1	0	0	0	0	3
SSW	2	2	0	0	0	0	0	4
SW	1	1	0	0	0	0	0	2
WSW	0	1	0	0	0	0	0	1
W	4	1	0	1	0	0	0	6
WNW	1	1	0	3	0	0	0	5
NW	3	2	3	0	0	0	0	8
NNW	0	1	2	0	0	0	0	3
TOTAL	15	27	6	4	0	0	0	52

PERIODS OF CALM (HOURS), 2
 VARIABLE DIRECTION, 7
 HOURS OF MISSING DATA, 58

SITE, THREE MILE ISLD. HOURS AT EACH WIND SPEED AND DIRECTION 01/28/83 11.28
 PERIOD OF RECORD = 82878181-82893824
 STABILITY CLASS, B DT/DZ
 ELEVATION, SPEED, SPI800A DIRECTION, DI180A LAPSE, DT158A

WIND DIRECTION	WIND SPEED (MPH)							>24 TOTAL
	1-3	4-7	8-12	13-18	19-24			
N	2	2	1	0	0	0	0	5
NNE	1	0	0	0	0	0	0	1
NE	0	1	0	0	0	0	0	1
ENE	0	3	0	0	0	0	0	3
E	0	1	0	0	0	0	0	1
ESE	0	5	0	0	0	0	0	5
SE	0	7	0	0	0	0	0	7
SSE	2	2	0	0	0	0	0	4
S	1	2	1	0	0	0	0	4
SSW	2	3	2	0	0	0	0	7
SW	2	2	1	0	0	0	0	5
WSW	1	2	0	0	0	0	0	3
W	0	2	0	2	0	0	0	4
WNW	3	2	1	0	0	0	0	6
NW	2	2	2	0	0	0	0	6
NNW	2	1	0	0	0	0	0	3
TOTAL	16	36	8	2	0	0	0	62

PERIODS OF CALM (HOURS), 2
 VARIABLE DIRECTION, 0
 HOURS OF MISSING DATA, 58

SITE, THREE MILE ISLD. HOURS AT EACH WIND SPEED AND DIRECTION 01/28/83 11.28
 PERIOD OF RECORD = 82878181-82893824
 STABILITY CLASS, D DT/DZ
 ELEVATION, SPEED, SPI800A DIRECTION, DI180A LAPSE, DT158A

WIND DIRECTION	WIND SPEED (MPH)							>24 TOTAL
	1-3	4-7	8-12	13-18	19-24			
N	0	13	1	0	0	0	0	14
NNE	0	6	2	0	0	0	0	8
NE	2	0	0	0	0	0	0	2
ENE	4	10	1	0	0	0	0	15
E	12	11	3	2	0	0	0	28
ESE	0	24	2	0	0	0	0	26
SE	10	37	4	0	0	0	0	51
SSE	4	30	4	0	0	0	0	38
S	11	14	5	0	0	0	0	30
SSW	5	18	18	0	0	0	0	33
SW	18	7	4	0	0	0	0	29
WSW	0	8	1	0	0	0	0	9
W	0	5	0	0	0	0	0	5
WNW	11	10	7	1	0	0	0	29
NW	7	14	3	2	0	0	0	26
NNW	13	13	2	0	0	0	0	28
TOTAL	130	225	57	6	1	0	0	419

PERIODS OF CALM (HOURS), 2
 VARIABLE DIRECTION, 44
 HOURS OF MISSING DATA, 58

SITE, THREE MILE ISLD. 82/01/03 11:37
 HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD = 82070101-82093024
 STABILITY CLASS: E DT/DZ
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	10	35	0	0	0	0	53
NNE	4	18	1	0	0	0	23
NE	10	7	1	0	0	0	26
ENE	17	7	2	0	0	0	26
E	40	25	0	0	0	0	65
ESE	23	20	1	0	0	0	52
SE	16	22	0	0	0	0	38
SSE	14	35	2	0	0	0	51
S	26	30	3	0	0	0	67
SSW	15	37	4	0	0	0	56
SW	22	20	0	0	0	0	42
WSW	34	15	3	0	0	0	52
W	26	13	4	0	0	0	43
WNW	17	20	0	0	0	0	46
NW	12	25	12	3	0	0	52
NNW	14	18	8	1	0	0	39
TOTAL	300	361	58	4	0	0	731

PERIODS OF CALM (HOURS): 2
 VARIABLE DIRECTION: 66
 HOURS OF MISSING DATA: 58

SITE, THREE MILE ISLD. 82/01/03 11:38
 HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD = 82070101-82093024
 STABILITY CLASS: F DT/DZ
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	7	12	0	0	0	0	19
NNE	4	1	0	0	0	0	5
NE	4	0	0	0	0	0	4
ENE	6	6	0	0	0	0	12
E	20	0	0	0	0	0	20
ESE	42	13	0	0	0	0	55
SE	37	0	0	0	0	0	46
SSE	25	4	0	0	0	0	29
S	18	1	0	0	0	0	19
SSW	24	3	0	0	0	0	27
SW	20	1	0	0	0	0	30
WSW	10	1	0	0	0	0	20
W	20	10	0	0	0	0	38
WNW	10	12	0	0	0	0	22
NW	12	13	4	1	0	0	38
NNW	14	20	5	0	0	0	39
TOTAL	291	115	0	1	0	0	416

PERIODS OF CALM (HOURS): 2
 VARIABLE DIRECTION: 37
 HOURS OF MISSING DATA: 58

SITE, THREE MILE ISLD. 82/01/03 11:38
 HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD = 82070101-82093024
 STABILITY CLASS: G DT/DZ
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	1	0	0	0	0	0	1
NNE	1	0	0	0	0	0	1
NE	0	0	0	0	0	0	0
ENE	2	0	0	0	0	0	2
E	12	2	0	0	0	0	14
ESE	10	3	0	0	0	0	21
SE	5	1	0	0	0	0	6
SSE	6	1	0	0	0	0	7
S	0	0	0	0	0	0	0
SSW	4	1	0	0	0	0	5
SW	2	1	0	0	0	0	3
WSW	6	1	0	0	0	0	7
W	3	0	0	0	0	0	3
WNW	1	1	0	0	0	0	2
NW	2	6	0	0	0	0	8
NNW	1	0	0	0	0	0	1
TOTAL	73	17	0	0	0	0	98

PERIODS OF CALM (HOURS): 2
 VARIABLE DIRECTION: 0
 HOURS OF MISSING DATA: 58

SITE, THREE MILE ISLD. 82/01/03 11:38
 HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD = 82070101-82093024
 STABILITY CLASS: ALL DT/DZ
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	37	00	14	1	0	0	142
NNE	21	30	5	0	0	0	56
NE	20	22	1	0	0	0	51
ENE	20	20	3	0	0	0	60
E	07	54	3	2	0	0	146
ESE	02	70	3	0	0	0	173
SE	60	00	4	0	0	0	163
SSE	52	77	6	0	0	0	135
S	68	54	12	0	0	0	130
SSW	55	82	10	0	0	0	155
SW	71	40	6	0	0	0	125
WSW	77	37	5	0	0	0	119
W	71	42	15	5	0	0	133
WNW	54	57	33	4	0	0	148
NW	57	03	55	6	1	0	212
NNW	67	06	20	1	0	0	193
TOTAL	935	903	212	10	1	0	2158

PERIODS OF CALM (HOURS): 2
 VARIABLE DIRECTION: 103
 HOURS OF MISSING DATA: 58

SITE, THREE MILE ISLD. 01/28/83 11.40
HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 82878318-82893824
STABILITY CLASS, A DT/DZ
ELEVATION, SPEED, SP180A DIRECTION, D1189A LAPSE, DT158A
WIND SPEED (MPH)

DIRECTION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N							24
NNE	5	16	3	0	0	0	19
NE	2	4	1	0	0	0	7
NENE	1	6	0	0	0	0	7
E	3	3	0	0	0	0	6
ESE	1	3	0	0	0	0	4
SE	0	18	0	0	0	0	18
SSE	1	1	0	0	0	0	2
S	2	1	2	0	0	0	5
SSW	1	14	2	0	0	0	17
SW	7	0	0	0	0	0	7
VSW	0	7	1	0	0	0	8
W	0	8	2	2	0	0	12
VNW	8	6	11	0	0	0	25
NW	15	23	26	0	0	0	64
NNW	16	20	18	0	0	0	55
TOTAL	78	141	68	2	0	0	279

PERIODS OF CALM (HOURS), 2
VARIABLE DIRECTION, 16
HOURS OF MISSING DATA, 43

SITE, THREE MILE ISLD. 01/28/83 11.40
HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 82878318-82893824
STABILITY CLASS, B DT/DZ
ELEVATION, SPEED, SP128A DIRECTION, D1189A LAPSE, DT158A
WIND SPEED (MPH)

DIRECTION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N							0
NNE	2	2	1	0	0	0	5
NE	1	0	0	0	0	0	1
NENE	0	1	0	0	0	0	1
E	0	3	0	0	0	0	3
ESE	0	0	0	0	0	0	0
SE	0	2	0	0	0	0	2
SSE	0	2	0	0	0	0	2
S	2	2	0	0	0	0	4
SSW	0	2	1	0	0	0	3
SW	0	3	2	0	0	0	5
VSW	1	1	0	0	0	0	2
W	0	1	0	0	0	0	1
VNW	3	2	1	0	0	0	6
NW	3	2	2	0	0	0	7
NNW	2	2	0	0	0	0	4
TOTAL	13	31	7	2	0	0	53

PERIODS OF CALM (HOURS), 2
VARIABLE DIRECTION, 8
HOURS OF MISSING DATA, 43

SITE, THREE MILE ISLD. 01/28/83 11.40
HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 82878318-82893824
STABILITY CLASS, C DT/DZ
ELEVATION, SPEED, SP180A DIRECTION, D1189A LAPSE, DT158A
WIND SPEED (MPH)

DIRECTION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N							2
NNE	0	2	0	0	0	0	2
NE	0	0	0	0	0	0	0
NENE	2	3	0	0	0	0	5
E	0	0	0	0	0	0	0
ESE	0	1	0	0	0	0	1
SE	1	3	0	0	0	0	4
SSE	0	4	0	0	0	0	4
S	0	2	1	0	0	0	3
SSW	1	2	0	0	0	0	3
SW	1	1	0	0	0	0	2
VSW	0	1	0	0	0	0	1
W	3	1	0	1	0	0	5
VNW	1	0	0	3	0	0	4
NW	3	2	2	0	0	0	7
NNW	0	1	2	0	0	0	3
TOTAL	12	25	5	4	0	0	46

PERIODS OF CALM (HOURS), 2
VARIABLE DIRECTION, 5
HOURS OF MISSING DATA, 43

SITE, THREE MILE ISLD. 01/28/83 11.00
HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 82878318-82893824
STABILITY CLASS, D DT/DZ
ELEVATION, SPEED, SP182A DIRECTION, D1189A LAPSE, DT158A
WIND SPEED (MPH)

DIRECTION	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N							17
NNE	6	0	1	0	0	0	7
NE	5	1	0	0	0	0	6
NENE	1	5	0	0	0	0	6
E	4	0	0	0	0	0	4
ESE	18	4	2	2	0	0	26
SE	5	14	1	0	0	0	20
SSE	6	26	4	0	0	0	36
S	3	26	4	0	0	0	33
SSW	0	11	4	0	0	0	15
SW	5	12	0	0	0	0	17
VSW	8	7	1	0	0	0	16
W	6	6	5	7	0	0	24
VNW	5	5	7	0	0	0	17
NW	7	6	6	1	0	0	20
NNW	3	11	3	2	0	0	19
TOTAL	94	161	45	6	0	0	387

PERIODS OF CALM (HOURS), 2
VARIABLE DIRECTION, 32
HOURS OF MISSING DATA, 43

SITE: THREE MILE ISLD. 01/20/83 11.50
 HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD = 82070310-82003024
 STABILITY CLASS: E DT/DZ
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	5	24	7	0	0	0	36
NNE	3	14	1	0	0	0	18
NE	11	5	1	0	0	0	17
ENE	7	5	2	0	0	0	14
E	20	12	0	0	0	0	32
ESE	11	14	0	0	0	0	25
SE	12	16	0	0	0	0	28
SSE	0	30	2	0	0	0	40
S	14	30	3	0	0	0	47
SSW	11	31	2	0	0	0	44
SV	17	15	0	0	0	0	32
VSW	27	14	0	0	0	0	41
V	10	11	2	0	0	0	32
VNW	11	16	7	0	0	0	34
NV	7	10	6	1	0	0	33
NNW	11	11	6	1	0	0	29
TOTAL	104	267	30	2	0	0	502

PERIODS OF CALM(HOURS): 2
 VARIABLE DIRECTION 30
 HOURS OF MISSING DATA: 43

SITE: THREE MILE ISLD. 01/20/83 11.51
 HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD = 82070310-82003024
 STABILITY CLASS: F DT/DZ
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	5	0	0	0	0	0	11
NNE	4	1	0	0	0	0	5
NE	2	0	0	0	0	0	2
ENE	5	4	0	0	0	0	9
E	13	6	0	0	0	0	19
ESE	20	10	0	0	0	0	30
SE	27	5	0	0	0	0	32
SSE	22	3	0	0	0	0	25
S	9	1	0	0	0	0	10
SSW	18	2	0	0	0	0	20
SV	15	1	0	0	0	0	16
VSW	16	1	0	0	0	0	17
V	14	7	0	0	0	0	21
VNW	9	0	0	0	0	0	18
NV	9	10	3	0	0	0	22
NNW	18	12	4	0	0	0	26
TOTAL	207	70	7	0	0	0	292

PERIODS OF CALM(HOURS): 2
 VARIABLE DIRECTION 25
 HOURS OF MISSING DATA: 43

SITE: THREE MILE ISLD. 01/20/83 11.51
 HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD = 82070310-82003024
 STABILITY CLASS: G DT/DZ
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
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	2	0	0	0	0	0	2
E	4	1	0	0	0	0	5
ESE	0	2	0	0	0	0	2
SE	2	1	0	0	0	0	3
SSE	2	1	0	0	0	0	3
S	3	0	0	0	0	0	3
SSW	2	0	0	0	0	0	2
SV	0	0	0	0	0	0	0
VSW	3	1	0	0	0	0	4
V	2	0	0	0	0	0	2
VNW	1	1	0	0	0	0	2
NV	2	5	0	0	0	0	7
NNW	0	0	0	0	0	0	0
TOTAL	32	12	0	0	0	0	44

PERIODS OF CALM(HOURS): 2
 VARIABLE DIRECTION 4
 HOURS OF MISSING DATA: 43

SITE: THREE MILE ISLD. 01/20/83 11.52
 HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD = 82070310-82003024
 STABILITY CLASS: ALL DT/DZ
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	23	50	12	1	0	0	95
NNE	16	20	2	0	0	0	38
NE	17	20	1	0	0	0	38
ENE	10	21	3	0	0	0	42
E	50	20	2	2	0	0	82
ESE	54	46	1	0	0	0	101
SE	40	60	4	0	0	0	124
SSE	30	66	6	0	0	0	118
S	36	47	11	0	0	0	104
SSW	30	64	14	0	0	0	118
SV	40	34	1	0	0	0	83
VSW	64	31	2	0	0	0	107
V	51	33	11	5	0	0	108
VNW	40	41	25	4	0	0	118
NV	41	72	42	3	1	0	150
NNW	40	65	24	1	0	0	138
TOTAL	630	715	161	16	1	0	1523

PERIODS OF CALM(HOURS): 2
 VARIABLE DIRECTION 120
 HOURS OF MISSING DATA: 43

SITE: THREE MILE ISLD 01/20/83 11:36
 HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD = 02100101-02123124
 STABILITY CLASS: A DT/DZ
 ELEVATION: SPEED: SP100A DIRECTION: DI100A LAPSE: DT150A

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	7	6	7	7	4	0	31
NNE	2	1	1	0	0	0	4
NE	0	0	1	0	0	0	1
ENE	0	1	3	0	0	0	4
E	1	1	0	0	0	0	2
ESE	5	1	2	0	0	0	8
SE	5	4	0	0	0	0	9
SSE	0	3	0	0	0	0	3
S	0	11	5	0	0	0	16
SSW	7	10	6	0	0	0	23
SW	6	5	2	0	0	0	13
VSW	5	1	1	0	0	0	7
V	3	4	6	2	0	0	15
VNV	5	5	7	12	1	0	30
NV	6	7	16	6	5	0	40
NNV	10	16	21	0	2	2	50
TOTAL	70	76	70	36	12	2	263

PERIODS OF CALM (HOURS): 4
 VARIABLE DIRECTION: 10
 HOURS OF MISSING DATA: 112

SITE: THREE MILE ISLD 01/20/83 11:36
 HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD = 02100101-02123124
 STABILITY CLASS: B DT/DZ
 ELEVATION: SPEED: SP100A DIRECTION: DI100A LAPSE: DT150A

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	1	0	0	0	1
ENE	0	0	0	0	0	0	0
E	0	1	0	0	0	0	1
ESE	0	0	1	0	0	0	1
SE	0	2	1	0	0	0	3
SSE	2	3	0	0	0	0	5
S	1	2	3	1	0	0	7
SSW	1	1	0	0	0	0	2
SW	0	0	1	0	0	0	1
VSW	0	0	0	0	0	0	0
V	0	0	2	1	0	0	3
VNV	0	1	1	2	2	0	6
NV	0	0	1	0	1	0	2
NNV	1	1	0	0	0	0	2
TOTAL	5	11	11	4	3	0	34

PERIODS OF CALM (HOURS): 4
 VARIABLE DIRECTION: 2
 HOURS OF MISSING DATA: 112

SITE: THREE MILE ISLD 01/20/83 11:37
 HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD = 02100101-02123124
 STABILITY CLASS: C DT/DZ
 ELEVATION: SPEED: SP100A DIRECTION: DI100A LAPSE: DT150A

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	2	1	0	0	0	0	3
NNE	0	0	0	0	0	0	0
NE	2	0	0	0	0	0	2
ENE	0	1	0	0	0	0	1
E	1	0	0	0	0	0	1
ESE	1	4	2	0	0	0	7
SE	2	1	1	0	0	0	4
SSE	1	1	1	0	0	0	3
S	2	2	1	0	0	0	5
SSW	0	2	1	0	0	0	3
SW	0	0	0	0	0	0	0
VSW	0	0	0	0	0	0	0
V	0	0	2	0	0	0	2
VNV	0	0	2	5	1	0	8
NV	1	2	1	2	1	0	7
NNV	1	1	2	0	0	0	4
TOTAL	13	15	13	7	2	0	50

PERIODS OF CALM (HOURS): 4
 VARIABLE DIRECTION: 6
 HOURS OF MISSING DATA: 112

SITE: THREE MILE ISLD 01/20/83 11:37
 HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD = 02100101-02123124
 STABILITY CLASS: D DT/DZ
 ELEVATION: SPEED: SP100A DIRECTION: DI100A LAPSE: DT150A

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	15	4	0	0	19
NNE	6	6	4	0	0	0	16
NE	4	14	0	0	0	0	18
ENE	0	7	0	0	0	0	7
E	24	17	13	1	0	0	55
ESE	26	52	0	0	0	0	78
SE	14	22	2	0	0	0	38
SSE	17	32	16	0	0	0	65
S	0	35	16	5	0	0	56
SSW	4	12	6	0	0	0	22
SW	2	4	3	0	0	0	9
VSW	1	4	2	0	0	0	7
V	4	0	10	3	1	0	18
VNV	1	12	48	20	5	1	87
NV	3	13	35	10	0	0	61
NNV	4	12	0	7	1	0	24
TOTAL	133	260	100	60	13	1	663

PERIODS OF CALM (HOURS): 4
 VARIABLE DIRECTION: 48
 HOURS OF MISSING DATA: 112

SITE: THREE MILE ISLD. 01/20/83 11.30
 HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD = 82100101-02123124
 STABILITY CLASS: E DT/DZ
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	25	20	1	0	0	0	46
NNE	8	4	1	0	0	0	13
NE	8	5	0	0	0	0	13
ENE	21	4	0	0	0	0	25
E	31	12	1	0	0	0	44
ESE	35	33	0	0	0	0	68
SE	22	36	0	0	0	0	58
SSE	11	35	1	0	0	0	47
S	28	24	10	4	0	0	66
SSW	16	15	6	3	0	0	40
SW	7	0	10	0	0	0	26
VSW	13	18	6	0	0	0	37
W	13	10	11	4	0	0	47
VNW	10	18	10	3	0	0	50
NW	6	11	10	6	0	0	33
NNW	14	22	0	0	0	0	45
TOTAL	268	285	85	28	0	0	650

PERIODS OF CALM (HOURS): 4
 VARIABLE DIRECTION: 05
 HOURS OF MISSING DATA: 112

SITE: THREE MILE ISLD. 01/20/83 11.40
 HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD = 82100101-02123124
 STABILITY CLASS: F DT/DZ
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	2	0	0	0	0	0	18
NNE	3	0	0	0	0	0	3
NE	3	2	0	0	0	0	5
ENE	8	2	0	0	0	0	8
E	21	5	0	0	0	0	26
ESE	22	0	0	0	0	0	31
SE	21	7	0	0	0	0	28
SSE	14	5	0	0	0	0	19
S	18	2	0	0	0	0	20
SSW	21	4	0	0	0	0	25
SW	13	1	0	1	0	0	15
VSW	15	3	1	0	0	0	19
W	10	0	0	0	0	0	18
VNW	7	0	0	0	0	0	7
NW	3	3	2	0	0	0	8
NNW	5	16	2	0	0	0	23
TOTAL	184	75	5	1	0	0	265

PERIODS OF CALM (HOURS): 4
 VARIABLE DIRECTION: 78
 HOURS OF MISSING DATA: 112

SITE: THREE MILE ISLD. 01/20/83 11.30
 HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD = 82100101-02123124
 STABILITY CLASS: G DT/DZ
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	2	3	0	0	0	0	5
NNE	1	0	0	0	0	0	1
NE	1	0	0	0	0	0	1
ENE	6	1	0	0	0	0	7
E	12	1	0	0	0	0	13
ESE	12	5	0	0	0	0	17
SE	12	4	0	0	0	0	16
SSE	15	1	0	0	0	0	16
S	20	3	0	0	0	0	23
SSW	7	2	0	0	0	0	9
SW	4	0	0	0	0	0	4
VSW	6	0	0	0	0	0	6
W	4	6	0	0	0	0	10
VNW	5	0	0	0	0	0	5
NW	0	6	2	0	0	0	8
NNW	4	4	1	1	0	0	10
TOTAL	111	36	3	1	0	0	151

PERIODS OF CALM (HOURS): 4
 VARIABLE DIRECTION: 10
 HOURS OF MISSING DATA: 112

SITE: THREE MILE ISLD. 01/20/83 11.35
 HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD = 82100101-02123124
 STABILITY CLASS: ALL DT/DZ
 ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	47	47	23	11	4	0	132
NNE	28	11	6	0	0	0	37
NE	18	21	2	0	0	0	41
ENE	30	16	3	0	0	0	50
E	88	37	14	1	0	0	142
ESE	181	184	13	0	0	0	218
SE	78	76	4	0	0	0	158
SSE	68	80	18	0	0	0	166
S	78	70	35	10	0	0	202
SSW	56	46	10	3	0	0	124
SW	32	10	16	1	0	0	68
VSW	48	26	18	0	0	0	76
W	34	46	48	10	1	0	131
VNW	28	36	60	51	0	1	184
NW	10	42	67	33	13	0	174
NNW	30	72	44	17	3	2	177
TOTAL	785	758	383	137	30	3	2066

PERIODS OF CALM (HOURS): 4
 VARIABLE DIRECTION: 205
 HOURS OF MISSING DATA: 112

SITE: THREE MILE ISLD. 01/20/83 12:00
HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 02100101-02123124
STABILITY CLASS: A DT/DZ
ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	8	4	4	7	4	0	27
NNE	2	0	0	0	0	0	2
NE	0	0	1	0	0	0	1
ENE	0	1	3	0	0	0	4
E	0	1	0	0	0	0	1
ESE	4	0	2	0	0	0	6
SE	5	1	0	0	0	0	6
SSE	4	3	0	0	0	0	7
S	6	0	4	0	0	0	10
SSW	5	7	4	0	0	0	16
SW	3	4	2	0	0	0	9
VSW	4	0	1	0	0	0	5
V	2	3	5	1	0	0	11
VNW	3	4	4	12	1	0	24
NV	5	4	16	6	5	0	38
NNW	8	0	18	0	2	2	44
TOTAL	67	40	62	35	12	2	217

PERIODS OF CALM(HOURS): 4
VARIABLE DIRECTION: 15
HOURS OF MISSING DATA: 07

SITE: THREE MILE ISLD. 01/20/83 12:01
HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 02100101-02123124
STABILITY CLASS: B DT/DZ
ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	1	0	0	0	1
ENE	0	0	0	0	0	0	0
E	0	1	0	0	0	0	1
ESE	0	0	1	0	0	0	1
SE	0	1	1	0	0	0	2
SSE	1	2	0	0	0	0	3
S	0	2	3	1	0	0	6
SSW	0	1	0	0	0	0	1
SW	0	0	1	0	0	0	1
VSW	0	0	1	0	0	0	1
V	0	0	1	1	0	0	2
VNW	0	1	1	2	2	0	6
NV	0	0	1	0	1	0	2
NNW	1	1	0	0	0	0	2
TOTAL	2	0	10	4	3	0	20

PERIODS OF CALM(HOURS): 4
VARIABLE DIRECTION: 1
HOURS OF MISSING DATA: 07

SITE: THREE MILE ISLD. 01/20/83 12:01
HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 02100101-02123124
STABILITY CLASS: C DT/DZ
ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	1	1	0	0	0	0	2
NNE	0	0	0	0	0	0	0
NE	1	0	0	0	0	0	1
ENE	0	1	0	0	0	0	1
E	0	0	0	0	0	0	0
ESE	0	1	2	0	0	0	3
SE	2	0	1	0	0	0	3
SSE	0	0	1	0	0	0	1
S	0	1	1	0	0	0	2
SSW	0	2	0	0	0	0	2
SW	0	0	0	0	0	0	0
VSW	0	0	0	0	0	0	0
V	0	0	0	0	0	0	0
VNW	0	0	1	5	1	0	7
NV	1	0	1	2	1	0	5
NNW	0	1	2	0	0	0	3
TOTAL	5	7	0	7	2	0	30

PERIODS OF CALM(HOURS): 4
VARIABLE DIRECTION: 2
HOURS OF MISSING DATA: 07

SITE: THREE MILE ISLD. 01/20/83 12:02
HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 02100101-02123124
STABILITY CLASS: D DT/DZ
ELEVATION: SPEED:SP100A DIRECTION:DI100A LAPSE:DT150A

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	5	0	15	4	0	0	33
NNE	4	5	4	0	0	0	13
NE	4	14	0	0	0	0	18
ENE	2	6	0	0	0	0	8
E	24	12	0	1	0	0	48
ESE	22	47	0	0	0	0	74
SE	13	16	2	0	0	0	31
SSE	12	18	16	0	0	0	48
S	4	25	18	5	0	0	50
SSW	2	4	6	0	0	0	12
SW	1	2	1	0	0	0	4
VSW	1	3	2	0	0	0	6
V	4	0	17	3	1	0	33
VNW	1	10	40	20	5	1	86
NV	0	0	31	10	6	0	65
NNW	4	11	0	7	1	0	31
TOTAL	103	100	172	60	13	1	556

PERIODS OF CALM(HOURS): 4
VARIABLE DIRECTION: 20
HOURS OF MISSING DATA: 07

SITE: THREE MILE ISLD. 01/28/83 12.82
 HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD = 82188101-82123124
 STABILITY CLASS. E DT/DZ
 ELEVATION. SPEED, SPI88A DIRECTION, DI188A LAPSE, DT158A

WIND DIRECTION	WIND SPEED (MPH)						>24	TOTAL
	1-3	4-7	8-12	13-18	19-24			
N	28	15	8	8	8	8	8	35
NNE	15	3	8	8	8	8	8	8
NW	6	3	8	8	8	8	8	8
ENE	18	4	8	8	8	8	8	22
E	26	8	1	8	8	8	8	35
ESE	29	28	8	8	8	8	8	57
SE	14	33	8	8	8	8	8	47
SSE	18	32	1	8	8	8	8	41
S	15	10	18	4	8	8	8	48
SSW	12	13	6	3	8	8	8	34
SW	4	8	3	8	8	8	8	13
WSW	18	17	3	8	8	8	8	30
W	18	14	4	8	8	8	8	37
WNW	7	17	10	2	8	8	8	45
NW	3	9	18	6	8	8	8	28
NNW	18	14	8	8	8	8	8	33
TOTAL	197	235	71	19	8	8	8	522

PERIODS OF CALMHOURS: 4
 VARIABLE DIRECTION 60
 HOURS OF MISSING DATA: 07

SITE: THREE MILE ISLD. 01/28/83 12.83
 HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD = 82188101-82123124
 STABILITY CLASS. F DT/DZ
 ELEVATION. SPEED, SPI88A DIRECTION, DI188A LAPSE, DT158A

WIND DIRECTION	WIND SPEED (MPH)						>24	TOTAL
	1-3	4-7	8-12	13-18	19-24			
N	2	6	8	8	8	8	8	8
NNE	2	8	8	8	8	8	8	8
NW	2	8	8	8	8	8	8	2
ENE	3	1	8	8	8	8	8	4
E	12	4	8	8	8	8	8	16
ESE	18	6	8	8	8	8	8	24
SE	13	5	8	8	8	8	8	18
SSE	11	5	8	8	8	8	8	16
S	11	2	8	8	8	8	8	13
SSW	16	4	8	8	8	8	8	28
SW	0	1	8	8	8	8	8	11
WSW	0	3	1	8	8	8	8	13
W	7	8	8	8	8	8	8	15
WNW	6	8	8	8	8	8	8	8
NW	3	3	8	8	8	8	8	8
NNW	5	14	2	8	8	8	8	21
TOTAL	129	62	5	1	8	8	8	187

PERIODS OF CALMHOURS: 4
 VARIABLE DIRECTION 24
 HOURS OF MISSING DATA: 07

SITE: THREE MILE ISLD. 01/28/83 12.83
 HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD = 82188101-82123124
 STABILITY CLASS. G DT/DZ
 ELEVATION. SPEED, SPI88A DIRECTION, DI188A LAPSE, DT158A

WIND DIRECTION	WIND SPEED (MPH)						>24	TOTAL
	1-3	4-7	8-12	13-18	19-24			
N	1	1	8	8	8	8	8	2
NNE	1	8	8	8	8	8	8	1
NW	1	8	8	8	8	8	8	1
ENE	11	8	8	8	8	8	8	3
E	11	8	8	8	8	8	8	11
ESE	9	4	8	8	8	8	8	13
SE	12	4	8	8	8	8	8	16
SSE	14	1	8	8	8	8	8	15
S	19	3	8	8	8	8	8	22
SSW	4	2	8	8	8	8	8	6
SW	4	8	8	8	8	8	8	4
WSW	6	8	8	8	8	8	8	6
W	3	4	8	8	8	8	8	7
WNW	5	8	8	8	8	8	8	5
NW	8	4	2	8	8	8	8	6
NNW	4	2	1	8	8	8	8	8
TOTAL	97	25	3	1	8	8	8	126

PERIODS OF CALMHOURS: 4
 VARIABLE DIRECTION 15
 HOURS OF MISSING DATA: 07

SITE: THREE MILE ISLD. 01/28/83 12.83
 HOURS AT EACH WIND SPEED AND DIRECTION
 PERIOD OF RECORD = 82188101-82123124
 STABILITY CLASS. ALL DT/DZ
 ELEVATION. SPEED, SPI88A DIRECTION, DI188A LAPSE, DT158A

WIND DIRECTION	WIND SPEED (MPH)						>24	TOTAL
	1-3	4-7	8-12	13-18	19-24			
N	37	36	19	11	4	4	4	187
NNE	14	8	4	8	8	8	8	26
NW	14	17	2	8	8	8	8	33
ENE	26	13	3	8	8	8	8	42
E	73	28	18	1	8	8	8	118
ESE	82	86	18	8	8	8	8	178
SE	50	68	4	8	8	8	8	120
SSE	58	61	18	8	8	8	8	150
S	30	33	16	3	8	8	8	91
SSW	21	13	7	1	8	8	8	42
SW	38	23	7	8	8	8	8	60
WSW	26	37	32	8	1	8	8	185
W	22	32	65	58	9	1	8	170
WNW	12	20	63	33	13	8	8	158
NW	38	52	38	17	3	2	8	142
TOTAL	500	586	332	135	38	3	8	1676

PERIODS OF CALMHOURS: 4
 VARIABLE DIRECTION 186
 HOURS OF MISSING DATA: 07