

QCP 100-S25
Revision 5
March 1989

EFFLUENT AND WASTE DISPOSAL
SEMI-ANNUAL REPORT July-December 1992
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

PROCEDURE: QCP 100-7

	Unit	Quarter Third	Quarter Fourth	Est. Total Error, %
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A. FISSION & ACTIVATION GASES

1. Total Release	Ci	1.21E+01	6.34E00	12.4
2. Average release rate for period	µCi/sec	1.52E00	7.98E-01	
3. Percent of Tech Spec limit * Chimney & stack	%	1.14E-02	5.95E-03	
		1.05E-03	5.48E-04	

B. IODINE

1. Total Iodine-131	Ci	3.75E-04	1.22E-04	31.5
2. Average release rate for period	µCi/sec	4.72E-05	1.54E-05	

C. PARTICULATES

1. Particulates with half-lives > 8 days	Ci	7.61E-03	1.08E-02	16.7
2. Average release rate for period	µCi/sec	9.57E-04	1.36E-03	
3. Gross alpha radioactivity	Ci **	<LLD	<LLD	

D. TRITIUM

1. Total Release	Ci	9.75E00	1.11E+01	6.2
2. Average release rate for period	µCi/sec	1.23E00	1.39E00	

E. Iodine 131 & 133, Tritium and Particulates

Percent of Tech spec Limit Chimney & stack	%	1.33E00	1.73E00	
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*NOBLE GAS GAMMA/NOBLE GAS BETA DOSE LIMITS

** Note: Scaled values based on previous 6 months available data.

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JUN 12 1989

Q.C.O.S.R.

9/0295c

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9303010233 930127
PDR ADOCK 05000254
R PDR

MAIN CHIMNEY
GASEOUS EFFLUENTS

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter Third	Quarter Fourth	Quarter Third	Quarter Fourth
1. Fission gases					
Kr-85	C1	< LLD	< LLD	NA	NA
Kr-85m	C1	2.39E-01	2.17E-01	NA	NA
Kr-87	C1	3.41E-01	1.84E-01	NA	NA
Kr-88	C1	2.19E-01	1.44E-01	NA	NA
Xe-133	C1	9.27E-01	4.64E-01	NA	NA
Xe-135	C1	2.87E-01	1.64E-01	NA	NA
Xe-135m	C1	1.81E00	9.03E-01	NA	NA
Xe-138	C1	7.49E00	3.87E00	NA	NA
Ar-41	C1	7.60E-01	3.89E-01	NA	NA
	C1				
	C1				
	C1				
	C1				
Total for Period	C1	1.21E+01	6.34E00	NA	NA

2. Iodines

I-131	C1	3.71E-04	1.22E-04	NA	NA
I-133	C1	1.27E-03	6.31E-04	NA	NA
I-135	C1	< LLD	< LLD	NA	NA
Total for Period	C1	1.64E-03	7.53E-04	NA	NA

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MAIN CHIMNEY
GASEOUS EFFLUENTS

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter Third	Quarter Fourth	Quarter Third	Quarter Fourth
3. Particulates					
Sr-89 *	C1	1.83E-04	2.02E-04	NA	NA
Sr-90 *	C1	1.04E-06	1.16E-06	NA	NA
Cs-134	C1	< LLD	< LLD	NA	NA
Cs-137	C1	8.84E-06	< LLD	NA	NA
Ba-140	C1	2.78E-04	< LLD	NA	NA
La-140	C1	4.67E-04	9.29E-05	NA	NA
Cr-51	C1	< LLD	< LLD	NA	NA
Mn-54	C1	< LLD	1.48E-05	NA	NA
Co-58	C1	< LLD	< LLD	NA	NA
Co-60	C1	1.64E-04	3.28E-04	NA	NA
I-131	C1	< LLD	< LLD	NA	NA
Ag-110m	C1	< LLD	7.89E-06	NA	NA
	C1				
	C1				
	C1				
	C1				
	C1				
	C1				
Total for Period	C1	1.10E-03	6.47E-04	NA	NA

* NOTE: Scaled values based on previous 6 months available data.

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REACTOR VENTILATION
GASEOUS EFFLUENTS

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter Third	Quarter Fourth	Quarter Third	Quarter Fourth
1. Fission gases					
Kr-85	C1	< LLD	< LLD	NA	NA
Kr-85m	C1	< LLD	< LLD	NA	NA
Kr-87	C1	< LLD	< LLD	NA	NA
Kr-88	C1	< LLD	< LLD	NA	NA
Xe-133	C1	< LLD	< LLD	NA	NA
Xe-135	C1	< LLD	< LLD	NA	NA
Xe-135m	C1	< LLD	< LLD	NA	NA
Xe-138	C1	< LLD	< LLD	NA	NA
	C1				
	C1				
Total for Period	C1	< LLD	< LLD	NA	NA
2. Iodines					
I-131	C1	3.53E-06	2.83E-07	NA	NA
I-133	C1	2.25E-05	< LLD	NA	NA
I-135	C1	< LLD	< LLD	NA	NA
Total for Period	C1	2.60E-05	2.83E-07	NA	NA

REACTOR VENTILATION
GASEOUS EFFLUENTS

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter Third	Quarter Fourth	Quarter Third	Quarter Fourth
3. Particulates					
Sr-89*	C1	6.14E-06	7.86E-07	NA	NA
Sr-90*	C1	3.73E-07	1.25E-07	NA	NA
Cs-134	C1	< LLD	< LLD	NA	NA
Cs-137	C1	5.19E-04	2.15E-04	NA	NA
Ba-140	C1	< LLD	< LLD	NA	NA
La-140	C1	< LLD	< LLD	NA	NA
Cr-51	C1	5.44E-04	1.33E-04	NA	NA
Mn-54	C1	5.65E-04	1.38E-03	NA	NA
Co-58	C1	3.54E-05	2.88E-04	NA	NA
Co-50	C1	4.57E-03	7.68E-03	NA	NA
I-131	C1	< LLD	< LLD	NA	NA
Ag-110m	C1	< LLD	< LLD	NA	NA
MO99	C1	2.51E-04	4.65E-04	NA	NA
Zr-95	C1	1.52E-05	< LLD	NA	NA
Zn-65	C1	< LLD	4.04E-05	NA	NA
	C1				
	C1				
Total for Period	C1	6.51E-03	1.02E-02	NA	NA

* NOTE: Scaled values based on previous 6 months available data.

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LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

	Unit	Quarter Third	Quarter Fourth	Est. Total Error, %
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A. FISSION & ACTIVATION PRODUCTS

1. Total release (not including tritium, gases, alpha)	Ci **	7.00E-03	1.07E-03	5.6
2. Average diluted concentration during batch discharges period	µCi/ml	2.51E-09	6.45E-10	
3. Percent of applicable limit *	% **	1.44E-01	2.60E-02	
4. Maximum diluted concentration during batch discharges	µCi/ml	6.54E-02	1.18E-02	
		3.33E-09	9.92E-10	

** NOTE: A1, A3, and B1 for third quarter include activity from ULB RHR Hx leak. All other values are for normal batch release.

B. TRITIUM

1. Total release	Ci **	1.45E00	1.63E00	4.0
2. Average diluted concentration during batch discharges	µCi/ml	6.25E-07	9.82E-07	
3. Percent of applicable limit	%	2.08E-02	3.27E-02	

C. DISSOLVED AND ENTRAINED GASES

1. Total release	Ci	< LLD	3.01E-04	5.6
2. Average diluted concentration during batch discharges	µCi/ml	< LLD	1.81E-10	
3. Percent of applicable limit	%	0	8.84E-05	

D. GROSS ALPHA RADIOACTIVITY

1. Total Release	Ci	< LLD	< LLD	14.9
2. Average concentration released during batch discharges	µCi/ml	< LLD	< LLD	

E. VOLUME OF WASTE RELEASED (prior to dilution)	Liters	2.90E+05	4.28E+05	
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F. VOLUME OF DILUTION WATER USED DURING BATCH DISCHARGES	Liters	2.32E+09	1.66E+09	
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G. TOTAL VOLUME OF DILUTION WATER DURING PERIOD (QUARTER) *WHOLE BODY/ORGAN	Liters	4.66E+11	2.32E+11	
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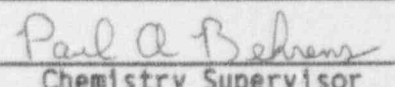
JUN 12 1989

C.C.O.S.R.

LIQUID EFFLUENTS

Nuclides Released	Unit	Continuous Mode		Batch Mode	
		Quarter Third	Quarter Fourth	Quarter Third	Quarter Fourth
Sr-89	C1	< LLD	< LLD	2.79E-04	5.04E-05
Sr-90	C1	< LLD	< LLD	2.10E-05	3.82E-06
Cs-134	C1	< LLD	< LLD	3.43E-05	< LLD
Cs-137	C1	< LLD	< LLD	2.99E-03	5.46E-04
I-131	C1	< LLD	< LLD	< LLD	< LLD
Co-58	C1	< LLD	< LLD	8.70E-05	< LLD
Co-60	C1	< LLD	< LLD	2.35E-05	4.33E-04
Fe-59	C1	< LLD	< LLD	< LLD	< LLD
Zn-65	C1	< LLD	< LLD	1.84E-05	< LLD
Mn-54	C1	< LLD	< LLD	2.43E-04	2.91E-05
Cr-51	C1	< LLD	< LLD	8.88E-04	< LLD
Zr-95	C1	< LLD	< LLD	< LLD	< LLD
Nb-95	C1	< LLD	< LLD	< LLD	< LLD
Mo-99	C1	< LLD	< LLD	< LLD	< LLD
Ag-110m	C1	< LLD	< LLD	< LLD	< LLD
Ba-140	C1	< LLD	< LLD	< LLD	< LLD
Cs-136	C1	< LLD	< LLD	< LLD	< LLD
La-140	C1	< LLD	< LLD	< LLD	< LLD
Fe-55	C1	< LLD	< LLD	6.27E-05	8.55E-06
Unidentified	C1	< LLD	< LLD	< LLD	< LLD
Total for Period (above)	C1	< LLD	< LLD	7.00E-03	1.07E-03
Xe-133	C1	< LLD	< LLD	< LLD	1.45E-04
Xe-135	C1	< LLD	< LLD	< LLD	1.56E-04

Prepared by 

Approved by 

Chemistry Supervisor

Solid RadWaste Semi-Annual Report

July 1992

Shipping Date	Carrier	Site	Volume	Millicuries
=====	=====	=====	=====	=====
7/01/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	120.30	372200.00
7/09/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	120.30	878.80
7/09/92	HITTMAN	BARNWELL, SC	22.50	25100000.00
7/13/92	HITTMAN	BARNWELL, SC	57.40	9483000.00
7/20/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	170.80	22850.00
7/24/92	HITTMAN	BARNWELL, SC	57.40	18800000.00
7/27/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	25990.00
7/29/92	RAY-TECH	BARNWELL, SC	343.00	104.60
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			1097.50	53805023.40
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Solid RadWaste Semi-Annual Report

August 1992

Shipping Date	Carrier	Site	Volume	Millicuries
=====	=====	=====	=====	=====
8/06/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	15000.00
8/11/92	KINDRICK TRUCKING	QUADREX	1290.10	36.53
8/19/92	KINDRICK TRUCKING	QUADREX	600.00	3.11
8/24/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	12600.00
8/26/92	RAY-TECH	CHANNAHAN	630.00	48.23
8/31/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	14240.00
			-----	-----
			3137.50	41927.87
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Solid RadWaste Semi-Annual Report

September 1992

Shipping Date	Carrier	Site	Volume	Millicuries
=====	=====	=====	=====	=====
9/02/92	KINDRICK TRUCKING	QUADREX	1290.10	49.69
9/08/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	16600.00
9/10/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	733.10
9/14/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	12360.00
9/15/92	HITTMAN	SCIENTIFIC ECOLO	1168.20	672.00
9/21/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	11020.00
9/28/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	20820.00
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			3487.30	62254.79
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Solid RadWaste Semi-Annual Report

October 1992

Shipping Date	Carrier	Site	Volume	Millicuries
=====	=====	=====	=====	=====
10/01/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	105.00	238.50
10/06/92	KINDRICK TRUCKING	QUADREX	845.40	13.08
10/15/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	83.40	27940.00
10/15/92	RAY-TECH	CHANNAHAN	660.00	51.43
10/16/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	83.40	28230.00
10/20/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	105.00	333.90
10/23/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	83.40	16820.00
10/23/92	KINDRICK TRUCKING	QUADREX	630.00	2.99
10/29/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	170.80	52802.00
			-----	-----
			2766.40	126431.90
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Solid RadWaste Semi-Annual Report

November 1992

Shipping Date	Carrier	Site	Volume	Millicuries
=====	=====	=====	=====	=====
11/02/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	26040.00
11/05/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	374.00	128.80
11/09/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	21460.00
11/10/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	105.00	676.70
11/13/92	RAY-TECH	CHANNAHAN	660.00	41.26
11/16/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	27080.00
11/18/92	KINDRICK TRUCKING	QUADREX	1350.10	13.30
11/19/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	1839.00
11/20/92	RAY-TECH	CHANNAHAN	652.50	36.75
11/23/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	34230.00
11/24/92	KINDRICK TRUCKING	QUADREX	1161.50	52.58
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			5332.10	111598.39
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Solid RadWaste Semi-Annual Report

December 1992

Shipping Date	Carrier	Site	Volume	Millicuries
=====	=====	=====	=====	=====
12/01/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	105.00	674.00
12/07/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	34310.00
12/11/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	35700.00
12/15/92	TRI-STATE	BARNWELL, SC	205.80	55210.00
12/16/92	RAY-TECH	BARNWELL, SC	660.00	82.25
12/17/92	TRI-STATE	BARNWELL, SC	170.80	1265.00
12/21/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	28420.00
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			1759.00	155661.25
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SFCo QUAD CITIES STATION
33 ft. WIND SPEED and WIND DIRECTION

July-September 1992
196-33 ft. DIFFERENTIAL TEMPERATURE

NUMBER OF OBSERVATIONS = 2195
VALUES ARE PERCENT OCCURRENCE

SPEED CLAS	WIND DIRECTION CLASSES															STABILITY CLASSES								
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	TOTAL	EU	MU	SU	N	SS	MS	ES	TOTAL
EU	.90	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3 SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4 N	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
1 SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2 MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
EU	.05	.60	.00	.00	.00	.05	.00	.00	.09	.09	.14	.18	.18	.32	.09	.05	1.23	1.23						
MU	.60	.00	.30	.00	.00	.00	.00	.00	.00	.05	.14	.09	.00	.09	.05	.00	.41	.41						
1 SU	.05	.05	.05	.14	.00	.09	.05	.23	.00	.14	.09	.05	.05	.05	.05	.05	1.09	1.09		1.09				
2 N	.14	.18	.36	.23	.14	.32	.41	.36	.36	.32	.46	.58	.32	.46	.23	.23	5.19	5.19		5.19				
3 SS	.41	.46	.41	.41	.55	.32	1.00	1.18	.50	.64	1.23	1.18	1.05	1.18	.87	.32	11.71	11.71		11.71				
MS	.32	.36	.23	.09	.69	1.55	1.05	1.00	.82	.32	.68	.23	.36	1.28	.64	.32	9.84	9.84		9.84				
ES	.36	.18	.36	.50	.91	3.60	1.28	.77	.50	.36	.00	.14	.05	.09	.23	.05	9.38	9.38		9.38				38.86
EU	.18	.55	.50	.27	.23	.23	.87	1.00	1.41	1.69	.14	1.18	1.73	1.37	1.64	.46	14.17	14.17						
MU	.05	.00	.18	.05	.05	.14	.27	.09	.16	.09	.05	.00	.09	.14	.05	.05	1.46	1.46		1.46				
4 SU	.14	.14	.27	.23	.27	.23	.18	.18	.18	.46	.14	.05	.18	.14	.27	.14	3.19	3.19		3.19				
5 N	1.23	.91	1.96	.82	.82	.87	1.05	1.23	.77	1.46	.77	.59	.59	1.05	.91	.36	15.40	15.40		15.40				
1 SS	.73	.36	.27	.23	.68	.50	1.18	1.82	.91	1.64	1.64	.68	1.50	1.28	.96	1.14	16.54	16.54		16.54				
MS	.09	.00	.05	.00	.00	.18	.59	.09	.05	.05	.00	.00	.09	.09	.41	.09	1.78	1.78		1.78				
ES	.00	.00	.00	.00	.00	.32	.09	.00	.00	.00	.00	.00	.00	.00	.05	.00	.46	.46		.46				52.98
EU	.05	.18	.05	.09	.00	.18	.18	.09	.41	.23	.05	.00	.41	.55	.50	.46	3.33	3.33						
MU	.05	.05	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.05	.09	.75	.00	.36	.36		.36				
8 SU	.00	.00	.05	.00	.00	.00	.05	.05	.09	.18	.09	.05	.00	.05	.14	.00	.73	.73		.73				
9 N	.14	.09	.09	.00	.05	.23	.14	.09	.18	.18	.14	.05	.09	.32	.55	.00	2.32	2.32		2.32				
1 SS	.00	.00	.00	.00	.00	.05	.32	.18	.09	.09	.14	.09	.00	.05	.41	.00	1.41	1.41		1.41				
2 MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00				
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00				8.15
EU	.00	.30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00						
1 MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00				
3 SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00				
4 N	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00				
1 SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00				
8 MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00				
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00				.00

CECo QUAD CITIES STATION
296 ft. WIND SPEED and WIND DIRECTION

July-September 1992
296-33 ft. DIFFERENTIAL TEMPERATURE

NUMBER OF OBSERVATIONS = 2192
VALUES ARE PERCENT OCCURRENCE

SPEED CLASS	WIND DIRECTION CLASSES																STABILITY CLASSES								
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	EU	MU	SU	N	SS	MS	ES	TOTAL
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
C SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
A N	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
L SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
M MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MU	.00	.00	.00	.00	.05	.00	.05	.09	.05	.00	.05	.00	.05	.00	.00	.00	.00	.32	.00	.32	.00	.00	.00	.00	.00
1 SU	.00	.00	.00	.00	.00	.05	.09	.05	.05	.09	.00	.05	.05	.00	.00	.00	.41	.00	.41	.00	.00	.00	.00	.00	.00
N	.00	.05	.00	.00	.05	.05	.05	.09	.14	.00	.00	.05	.00	.09	.00	.09	.64	.00	.64	.00	.00	.00	.00	.00	.00
3 SS	.05	.00	.00	.09	.00	.00	.00	.15	.00	.00	.09	.00	.00	.00	.00	.09	.36	.00	.36	.00	.00	.00	.00	.00	.00
MS	.00	.00	.09	.00	.09	.00	.05	.05	.00	.00	.00	.00	.00	.00	.00	.00	.27	.00	.27	.00	.00	.00	.00	.00	.00
ES	.00	.00	.05	.00	.00	.00	.00	.09	.05	.00	.00	.00	.00	.00	.05	.00	.23	.00	.23	.00	.00	.00	.00	.00	.00
EU	.18	.05	.14	.00	.05	.14	.27	.09	.46	.68	.27	.14	.36	.41	.50	.32	4.06	4.06	.00	.00	.00	.00	.00	.00	.00
MU	.09	.05	.18	.23	.09	.09	.32	.23	.27	.41	.14	.00	.14	.18	.23	.09	2.74	2.74	.00	.00	.00	.00	.00	.00	.00
4 SU	.05	.05	.14	.09	.05	.00	.14	.23	.18	.23	.27	.09	.00	.09	.27	.09	1.96	.00	1.96	.00	.00	.00	.00	.00	.00
N	.14	.23	.50	.23	.14	.18	.09	.18	.14	.32	.73	.36	.41	.23	.14	.23	4.24	.00	4.24	.00	.00	.00	.00	.00	.00
7 SS	.05	.14	.27	.23	.14	.14	.09	.18	.09	.14	.50	.14	.05	.09	.09	.32	2.65	.00	2.65	.00	.00	.00	.00	.00	.00
MS	.14	.00	.27	.05	.18	.18	.00	.18	.00	.14	.18	.05	.00	.09	.14	.09	1.69	.00	1.69	.00	.00	.00	.00	.00	.00
ES	.23	.00	.05	.14	.00	.05	.05	.00	.09	.27	.18	.05	.00	.00	.00	.00	1.09	.00	1.09	.00	.00	.00	.00	.00	.00
EU	.06	.46	.68	.14	.27	.27	.32	.68	.27	.32	.27	.46	.82	.82	.82	.41	7.07	7.07	.00	.00	.00	.00	.00	.00	.00
MU	.00	.50	.36	.32	.18	.05	.09	.18	.14	.27	.09	.05	.18	.14	.05	.09	2.69	2.69	.00	.00	.00	.00	.00	.00	.00
8 SU	.09	.14	.18	.09	.05	.05	.14	.09	.32	.23	.05	.09	.00	.00	.09	.18	1.78	.00	1.78	.00	.00	.00	.00	.00	.00
N	1.05	.78	1.51	.41	.27	.50	.68	.82	.18	.73	1.46	.41	.55	.46	.59	.64	11.04	.00	11.04	.00	.00	.00	.00	.00	.00
1 SS	.50	.32	.32	.09	.18	.41	.59	.82	.73	.96	.87	.64	.91	.32	.73	1.46	9.85	.00	9.85	.00	.00	.00	.00	.00	.00
2 MS	.23	.32	.46	.23	.14	.18	.18	.27	.32	.14	.18	.09	.09	.00	.32	.55	3.70	.00	3.70	.00	.00	.00	.00	.00	.00
ES	.05	.05	.09	.09	.23	.23	.41	.41	.59	.46	.32	.05	.00	.00	.00	.05	3.01	.00	3.01	.00	.00	.00	.00	.00	.00
EU	.05	.05	.05	.00	.00	.09	.05	.27	.64	.27	.05	.32	.50	.55	.36	.32	3.56	3.56	.00	.00	.00	.00	.00	.00	.00
1 MU	.00	.00	.00	.00	.00	.00	.14	.14	.32	.18	.05	.05	.50	.18	.05	.05	1.23	1.23	.00	.00	.00	.00	.00	.00	.00
3 SU	.09	.14	.14	.00	.05	.05	.05	.09	.00	.32	.00	.05	.09	.23	.09	.00	1.37	.00	1.37	.00	.00	.00	.00	.00	.00
N	.27	.27	.27	.18	.69	.41	.55	.91	.55	.91	.23	.27	.50	.78	.32	.14	7.16	.00	7.16	.00	.00	.00	.00	.00	.00
1 SS	.27	.14	.18	.00	.23	.41	.91	1.46	1.19	1.09	.55	.91	1.00	1.64	.73	.82	11.54	.00	11.54	.00	.00	.00	.00	.00	.00
8 MS	.18	.00	.05	.05	.09	.36	1.32	1.73	.46	.50	.00	.23	.14	.00	.14	.55	5.79	.00	5.79	.00	.00	.00	.00	.00	.00
ES	.18	.00	.00	.00	.00	.05	.41	.36	.27	.18	.05	.00	.00	.00	.00	.00	1.51	.00	1.51	.00	.00	.00	.00	.00	.00

CECo QUAD CITIES STATION
296 ft. WIND SPEED and WIND DIRECTION

July-September 1992
296-33 ft. DIFFERENTIAL TEMPERATURE

SPEED CLASS	WIND DIRECTION CLASSES															STABILITY CLASSES									
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	EU	MU	SU	N	SS	MS	ES	TOTAL
EU	.00	.00	.00	.00	.00	.00	.00	.00	.32	.00	.00	.00	.32	.32	.09	.09	1.14	1.14							
1 MU	.00	.00	.00	.00	.00	.00	.00	.05	.00	.14	.00	.05	.05	.18	.05	.05	.55		.55						
9 SU	.00	.00	.00	.00	.00	.00	.00	.00	.09	.09	.05	.05	.05	.05	.00	.05	.41			.41					
N	.00	.00	.00	.00	.00	.09	.00	.14	.36	.41	.00	.00	.05	.23	.55	.00	1.82				1.82				
2 SS	.00	.00	.00	.00	.05	.00	.18	.50	.64	.73	.00	.09	.18	.14	.27	.05	2.83					2.83			
4 MS	.00	.00	.00	.00	.00	.00	.23	.09	.05	.18	.00	.00	.05	.00	.00	.00	.59						.59		
ES	.00	.00	.00	.00	.00	.00	.18	.05	.00	.00	.00	.00	.00	.00	.00	.00	.23							.23	
TOT	3.92	3.70	5.98	2.65	3.15	4.01	7.62	10.68	9.08	10.45	8.61	4.70	6.75	7.25	6.66	6.80	100.00	16.01	7.53	5.98	25.09	27.28	12.04	6.07	100.00

Wind Direction by Stability

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	-STABILITY CLASSES-	
	.27	.55	.87	.14	.32	.50	.64	1.05	1.69	1.28	.09	.91	2.14	2.14	1.78	1.14	16.01	Extremely Unstable	
	.00	.55	.55	.55	.32	.14	.59	.68	.78	1.00	.32	.14	.50	.68	.36	.27	7.53	Moderately Unstable	
	.23	.32	.46	.18	.14	.14	.41	.50	.64	.96	.36	.32	.18	.36	.46	.32	5.98	Slightly Unstable	
	1.46	1.32	2.28	.82	1.05	1.23	1.37	2.24	1.46	2.37	2.42	1.09	1.51	1.78	1.40	1.09	25.09	Neutral	
	.87	.69	.78	.41	.59	.96	1.78	3.06	2.65	2.92	2.01	1.78	2.14	2.19	1.82	2.74	27.28	Slightly Stable	
	.55	.32	.87	.32	.50	.73	1.78	2.33	.82	.96	.36	.36	.27	.09	.59	1.19	12.04	Moderately Stable	
	.46	.05	.18	.23	.23	.32	1.05	.82	1.69	.55	.55	.09	.00	.00	.05	.05	6.07	Extremely Stable	

Wind Direction by Wind Speed

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	-WIND SPEED CLASSES-	
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	CALM	
	.05	.05	.14	.09	.18	.09	.23	.32	.32	.14	.14	.09	.18	.09	.05	.18	2.33	0.3 - 3.5 mph	
	.87	.50	1.55	.96	.64	.78	.96	1.09	1.23	2.19	2.28	.82	.96	1.09	1.37	1.14	18.43	3.6 - 7.5 mph	
	1.96	2.55	3.80	1.37	1.32	1.69	2.42	3.79	2.55	3.10	3.24	1.78	2.55	1.73	2.50	3.38	39.14	7.6 - 12.5 mph	
	1.85	.59	.58	.23	.96	1.37	3.42	4.97	3.42	3.47	.91	1.82	2.33	3.38	1.69	1.87	32.16	12.6 - 18.5 mph	
	.00	.00	.00	.00	.05	.09	.59	.82	1.46	1.55	.05	.18	.68	.91	.96	.23	7.57	18.6 - 24.5 mph	
	.00	.00	.00	.00	.00	.00	.18	.09	.00	.00	.00	.00	.05	.05	.00	.00	.36	> 24.5 mph	

CECo QUAD CITIES STATION
296 Ft. WIND SPEED and WIND DIRECTION

October-December 1992
296-33 Ft. DIFFERENTIAL TEMPERATURE

NUMBER OF OBSERVATIONS = 2207
VALUES ARE PERCENT OCCURRENCE

SPEED CLASS	WIND DIRECTION CLASSES															TOTAL	STABILITY CLASSES						TOTAL		
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW		NNW	EU	MU	SU	N	SS		MS	ES
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
C SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
A N	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
L SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
M MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
1 SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
- N	.00	.05	.05	.00	.00	.14	.09	.05	.14	.09	.36	.45	.14	.27	.00	.23	2.04			2.04					
3 SS	.00	.05	.00	.00	.05	.00	.00	.00	.00	.14	.05	.05	.05	.00	.09	.00	.45				.45				
MS	.00	.09	.00	.05	.00	.00	.00	.00	.00	.00	.05	.05	.00	.00	.00	.00	.23					.23			
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.05						.05		
EU	.00	.00	.00	.00	.00	.00	.00	.00	.05	.05	.05	.00	.00	.00	.00	.00	.09	.09							
MU	.00	.00	.00	.00	.05	.00	.00	.00	.00	.32	.18	.09	.00	.05	.00	.00	.68	.68							
4 SU	.00	.05	.00	.00	.00	.00	.00	.00	.00	.27	.09	.14	.14	.18	.00	.00	.86			.86					
- N	.14	.14	.27	.54	.05	.09	.09	.23	.23	.63	.63	.59	.68	.86	.68	.18	6.03			6.03					
7 SS	.05	.14	.32	.09	.18	.00	.18	.09	.14	.09	.14	.23	.27	.32	.09	.00	2.31				2.31				
MS	.09	.00	.09	.05	.00	.00	.05	.00	.00	.05	.18	.05	.05	.05	.18	.00	.82					.82			
ES	.00	.05	.00	.00	.00	.00	.09	.00	.00	.14	.18	.00	.00	.00	.00	.00	.45						.45		
EU	.00	.00	.05	.09	.00	.00	.09	.05	.09	.32	.05	.00	.00	.14	.05	.09	1.00	1.00							
MU	.00	.18	.00	.05	.00	.14	.00	.09	.18	.05	.09	.00	.14	.05	.09	.23	1.27	1.27							
8 SU	.00	.14	.09	.00	.00	.14	.09	.27	.27	.36	.18	.00	.09	.14	.18	.09	2.04			2.04					
- N	.41	.63	1.27	1.22	.45	.27	.59	1.04	.45	.63	.95	1.27	2.49	2.49	2.54	.91	17.63			17.63					
1 SS	.00	.18	.50	.72	.18	.18	.50	.86	.18	.36	.68	.32	.41	.41	.18	.27	5.94				5.94				
2 MS	.14	.05	.00	.60	.00	.00	.27	.18	.27	.45	.23	.09	.14	.14	.18	.23	2.36					2.36			
ES	.14	.14	.00	.00	.09	.14	.36	.32	.18	.32	.18	.14	.00	.00	.00	.00	1.99						1.99		
EU	.00	.00	.00	.14	.00	.00	.09	.05	.18	.18	.00	.05	.00	.18	.18	.00	1.04	1.04							
1 MU	.00	.00	.00	.05	.09	.00	.05	.00	.18	.09	.05	.09	.00	.05	.09	.00	.72	.72							
3 SU	.00	.00	.00	.00	.09	.00	.05	.05	.14	.05	.14	.00	.00	.05	.09	.00	.63			.63					
- N	.32	.95	1.54	.72	1.04	.32	1.77	1.18	1.27	.50	.45	1.45	1.45	2.99	2.72	.68	19.35			19.35					
1 SS	.23	.90	.36	.50	.36	.54	.91	1.63	1.13	.41	.69	.45	.54	1.72	.68	.18	10.24				10.24				
6 MS	.09	.05	.00	.00	.00	.18	.36	.95	.50	.41	.14	.00	.05	.00	.18	.05	2.95					2.95			
ES	.09	.05	.00	.00	.00	.00	.36	.18	.32	.09	.05	.05	.05	.00	.00	.00	1.22						1.22		

CECo QUAD CITIES STATION
295 ft. WIND SPEED and WIND DIRECTION

October-December 1992
295-33 ft. DIFFERENTIAL TEMPERATURE

SPEED CLASS	WIND DIRECTION CLASSES																STABILITY CLASSES									
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	EU	MU	SU	N	SS	MS	ES	TOTAL	
EU	.00	.00	.00	.00	.00	.00	.00	.00	.05	.05	.00	.00	.00	.00	.00	.00	.09	.09								
1 MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.14	.00	.23		.23							
9 SU	.00	.00	.00	.00	.00	.00	.00	.05	.09	.05	.00	.00	.09	.45	.05	.00	.77		.77							
N	.00	.32	.41	.41	.63	.63	.72	.63	.63	.59	.27	.36	.54	2.08	1.09	.09	9.42			9.42						
2 SS	.95	.00	.00	.05	.09	.32	.66	.32	.77	.32	.05	.05	.45	.18	.00	.00	3.31			3.31						
4 MS	.00	.00	.05	.00	.00	.27	.23	.00	.05	.18	.00	.00	.00	.00	.00	.00	.77						.77			
ES	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.05							.05		
																										14.64
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00								
6 MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00						
7 SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.05		.05							
N	.00	.00	.09	.00	.63	.14	.05	.00	.23	.23	.00	.09	.18	1.04	.14	.00	2.81			2.81						
2 SS	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00	.09			.09						
4 MS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00		
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00								.00	
																										2.95
TOT	1.72	3.22	6.07	4.67	3.99	3.49	7.66	8.25	7.79	7.43	5.94	6.03	7.93	13.96	9.65	3.22	100.00	2.27	2.80	4.35	57.27	22.34	7.11	3.76	100.00	

Wind Direction by Stability

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	-STABILITY CLASSES-
.00	.00	.05	.23	.00	.00	.18	.09	.36	.59	.05	.05	.00	.32	.27	.09	2.27	Extremely Unstable
.00	.18	.00	.09	.14	.14	.05	.09	.36	.45	.32	.18	.14	.23	.32	.23	2.90	Moderately Unstable
.00	.18	.09	.00	.09	.14	.14	.36	.50	.72	.41	.14	.32	.86	.32	.09	4.35	Slightly Unstable
.86	2.08	3.62	2.90	2.81	1.59	3.31	3.13	2.95	2.67	2.67	4.21	5.48	9.74	7.16	2.08	57.27	Neutral
.32	.36	1.18	1.36	.86	1.04	2.27	2.90	2.31	1.31	1.50	1.09	1.72	2.63	1.04	.45	22.34	Slightly Stable
.32	.18	.14	.09	.00	.45	.91	1.13	.82	1.09	.19	.18	.23	.18	.54	.27	7.11	Moderately Stable
.23	.23	.00	.00	.09	.14	.82	.54	.50	.59	.41	.18	.05	.00	.00	.00	3.76	Extremely Stable

Wind Direction by Wind Speed

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	-WIND SPEED CLASSES-
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	CALM
.00	.18	.05	.05	.05	.14	.09	.05	.14	.27	.45	.54	.18	.27	.14	.23	2.81	0.9 - 3.5 mph
.27	.36	.68	.68	.27	.09	.41	.32	.41	1.54	1.40	1.09	1.13	1.45	.95	.18	11.24	3.6 - 7.5 mph
.58	1.31	1.90	2.08	.72	.86	1.83	2.81	1.63	2.49	2.36	1.81	3.26	3.35	3.22	1.81	32.22	7.6 - 12.5 mph
.72	1.04	1.90	1.40	1.59	1.04	3.58	4.03	3.72	1.72	1.40	2.08	2.08	4.98	3.94	.91	36.16	12.6 - 18.5 mph
.05	.32	.45	.45	.72	1.22	1.63	1.04	1.59	1.18	.32	.41	1.09	2.81	1.27	.09	14.64	18.6 - 24.5 mph
.00	.00	.09	.00	.63	.14	.05	.00	.32	.23	.00	.09	.18	1.09	.14	.00	2.95	> 24.5 mph