Commonwealth Edison
Quad Cities Nuclear Power Station
22710 206 Avenue North
Cordova, Illinois 61242-9740
Telephone 309/654-2241

RLB-92-180

July 28, 1992

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

SUBJECT: Quad Cities Station Operating Report
NRC Dockets (50-254 and 50-265)

Enclosed is the radioactive Effluent Report for January through June 1992, for Quad Cities Nuclear Power Station.

The Unit One service water monitor was out-of-service January 1 through April 30, 1992. The monitor was taken out-of-service to investigate a spiking problem associated with the electronics. The monitor was returned to service the same day that the problem was rectified. The required sampling was performed during this time period to continue releases via this pathway.

A copy of this report will be furnished to the NRC Resident Inspector.

Sincerely,

COMMONWEALTH EDISON
QUAD CITIES NUCLEAR POWER STATION

R. L. Bax
Station Manager

RLB/JGW/jmk

Enclosure

310077

STMGR 425

IE48
1/1

EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT

Supplemental Information

Facility Quad Cities Nuclear Power Station

Licensee Commonwealth Edison Company

1. Regulatory Limits

a. For Noble Gases:

Dose rate

1. Less than 500 mrem/year to the whole body.
2. Less than 3000 mrem/year to the skin.

Dose Gamma Radiation

1. Less than or equal to 5 mrad/quarter.
2. Less than or equal to 10 mrad/year.

Beta Radiation

1. Less than or equal to 10 mrad/quarter.
2. Less than or equal to 20 mrad/year.

b.,c. For Iodine-131, for Iodine-133, and for all radionuclides in particulate form with half-lives greater than 8 days.

Dose Rate

1. Less than 1500 mrem/year

Dose

1. Less than or equal to 7.5 mrem/quarter
2. Less than or equal to 15 mrem/year.

d. For Liquid

Less than or equal to 3 mrem to the whole body during any calendar quarter.
Less than or equal to 10 mrem to any organ during any calendar quarter.
Less than or equal to 6 mrem to the whole body during any calendar year.
Less than or equal to 20 mrem to any organ during any calendar year.

2. Maximum Permissible Concentration

a.,b.,c., For fission and activation gases, iodines, and particulates with halflives greater than 8 days, allowable release limits are calculated by solving equations 10.1 and 10.2 from the Offsite Dose Calculation Manual. The alarm setpoint is one half of the most conservative value from the two equations.

d. For liquid effluents allowable release limits are calculated by solving equation 10.3 from the Offsite Dose Calculation manual. The MPC values used for the monitors were as follows:

radwaste discharge 1.78E-05 uCi/ml
service water 2.0E-05 uCi/ml

3. Average Energy

The average gamma energy used to calculate the alarm setpoints for the noble gas monitors was 0.597 Mev for the First quarter and 0.555 Mev for the Second quarter.

4. Measurements and Approximations of Total Radioactivity

a. Fission and Activation Gases:
b. Iodines:
c. Particulates:

The main chimney and reactor building ventilation exhaust systems are continually monitored for iodines and particulates. These samples are pulled every 7 days and analyzed by gamma isotopic. The particulate papers are composited every 31 days and sent to a vendor for Sr 89-90 and gross alpha analysis. Noble gas grab samples are pulled and analyzed by gamma isotopic weekly. Tritium samples are pulled and analyzed every month.

The continuous strip chart recorders for the monitors on the release points are reviewed monthly for spikes and the activity released is calculated. An additional calculated activity for noble gases is added to the Main chimney release each month. This calculation is done because most of the grab samples show less than the lower limit of detection due to the low amount of activity and the large dilution flow at the sample point. The calculation takes into account the normal offgas train and the gland steam contribution to the release.

The average flow at the release points are used to calculate the curies released.

d. Liquid Effluents

The river discharge tanks are analyzed before discharge by gamma isotopic. A composite sample is taken during discharge. This is composited with other discharges that occurred every 31 days and is analyzed for tritium and gross alpha. The batch composites are composited quarterly and sent to a vendor for Sr 89-90 and Fe 55. The discharge bay is sampled every 31 days and analyzed by gamma isotopic, for tritium and gross alpha. It is sampled quarterly and sent to a vendor for Sr 89-90 and Fe 55 analysis.

The tank volumes and activities are used to calculate the curies released for the river discharge tank. The total water released during the quarter and the activity is used to calculate the curies released for the discharge bay.

e. Estimated Total Error Percent

The estimated total error percents were calculated by taking the square root of the sum of the squares of errors for sampling and measurement parameters. The estimated total error percent for the solid radwaste curies is 11.7%.

f. Less than the lower limit of detection (<LLD).

Samples are analyzed such that the Technical Specification LLD requirements are met. When a nuclide is not detected during the quarter then <LLD is reported.

5. Batch Releases

a. Liquid

1. number of releases
2. total time 8376 minutes
3. maximum time 870 minutes
4. average time 698 minutes
5. minimum time 495 minutes
6. average stream flow, discharge 63.0 gpm, dilution 1.94E+05 gpm

b. Gaseous

NONE

6. Abnormal Releases

a. Liquid

On August 9, 1991 a leak developed on the Unit One "B" Residual Heat Removal Heat Exchanger. Unit one was at full power at this time. A total of 1.93E+04 uCi was released from January 1, 1992 thru June 30, 1992. This release was added to the monthly liquid release summary for each of the months January thru June, 1992.

b. Gaseous

On June 11, 1992 the Unit One Charcoal Adsorbers were bypassed until June 14, 1992, a total of 4,755 minutes. The reason was high offgas flow thus causing a nigh DP on the Adsorbers. The cause of the high flow was identified and corrected by 1015 on June 14, 1992. A total of 3.45E+06 uCi of activity was released during the time the charcoal adsorbers were bypassed. This release was added to the Noble Gas release summary for the month of June 1992.

On April 22, 1992 a ventilation door leading to the main chimney was found open by a radiation protection technician. He closed the door and notified the Chemistry Department of the problem. It was determined through sampling that no significant activity was released via this path, and is mentioned here only for accuracy.

QCP 100-S25
Revision 5
March 1989

EFFLUENT AND WASTE DISPOSAL
SEMI-ANNUAL REPORT January - June 1992
GASEOUS EFFLUENTS - SUMMATION OF ALL RELEASES

PROCEDURE: QCP 100-7

	Unit	Quarter First	Quarter Second	Est. Total Error, %
A. FISSION & ACTIVATION GASES				
1. Total Release	Ci	1.12E+01	1.32E+01	12.4
2. Average release rate for period	µCi/sec	1.42E+00	1.68E+00	
3. Percent of Tech Spec limit * Chimney & stack	%	1.44E-02 1.07E-03	1.23E-02 1.10E-03	
B. IODINE				
1. Total Iodine-131	Ci	2.35E-04	4.28E-04	31.5
2. Average release rate for period	µCi/sec	2.93E-05	5.44E-05	
C. PARTICULATES				
1. Particulates with half-lives > 8 days	Ci	8.66E-03	5.02E-03	17.0
2. Average release rate for period	µCi/sec	1.10E-03	6.38E-04	
3. Gross alpha radioactivity	Ci	6.20E-06	<LLD	
D. TRITIUM				
1. Total Release	Ci	1.86E+01	5.66E+00	6.2
2. Average release rate for period	µCi/sec	2.37E+00	7.20E-01	
E. Iodine 131 & 133, Tritium and Particulates				
Percent of Tech spec Limit Chimney & stack	%	9.21E-01	7.05E-01	

*NOBLE GAS GAMMA/NOBLE GAS BETA DOSE LIMITS

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MAIN CHIMNEY
GASEOUS EFFLUENTS

Nuclides Released	Unit	Continuous Mode Quarter First	Continuous Mode Quarter Second	Batch Mode Quarter	Batch Mode Quarter
1. Fission gases					
Kr-85	Ci	<LLD	<LLD	NA	NA
Kr-85m	Ci	1.42E+00	3.28E-01	NA	NA
Kr-87	Ci	2.88E-01	4.35E-01	NA	NA
Kr-88	Ci	1.59E+00	1.96E-01	NA	NA
Xe-133	Ci	5.61E-01	7.29E-00	NA	NA
Xe-135	Ci	1.81E-01	7.90E-01	NA	NA
Xe-135m	Ci	1.12E+00	1.64E+00	NA	NA
Xe-138	Ci	4.29E+00	6.65E+00	NA	NA
Ar-41	Ci	1.74E+00	2.42E+00	NA	NA
	Ci				
	Ci				
	Ci				
Total for Period	Ci	1.12E+01	1.32E+01	NA	NA
2. Iodines					
I-131	Ci	2.22E-04	4.05E-04	NA	NA
I-133	Ci	1.24E-03	2.33E-03	NA	NA
I-135	Ci	2.01E-04	2.18E-04	NA	NA
Total for Period	Ci	1.66E-03	2.95E-03	NA	NA

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MAIN CHIMNEY
GASEOUS EFFLUENTS

Nuclides Released	Unit	Continuous Mode Quarter First	Continuous Mode Quarter Second	Batch Mode Quarter	Batch Mode Quarter
3. Particulates					
Sr-89 *	Ci	2.10E-04	1.99E-04	NA	NA
Sr-90 *	Ci	1.48E-07	3.26E-07	NA	NA
Cs-134	Ci	<LLD	<LLD	NA	NA
Cs-137	Ci	<LLD	1.29E-05	NA	NA
Ba-140	Ci	<LLD	1.61E-04	NA	NA
La-140	Ci	3.57E-05	2.65E-04	NA	NA
Cr-51	Ci	5.55E-05	3.80E-05	NA	NA
Mn-54	Ci	2.34E-05	<LLD	NA	NA
Co-58	Ci	<LLD	<LLD	NA	NA
Co-60	Ci	1.61E-04	2.71E-04	NA	NA
I-131	Ci	6.01E-06	8.74E-06	NA	NA
Ag-110m	Ci	<LLD	<LLD	NA	NA
I-133	Ci	1.06E-04	1.75E-04	NA	NA
MO-99	Ci	2.31E-04	1.89E-04	NA	NA
	Ci				
	Ci				
	Ci				
Total for Period	Ci	8.29E-04	1.32E-03	NA	NA

* NOTE: Scaled values based on previous 6 mos. data.

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REACTOR VENTILATION
GASEOUS EFFLUENTS

		Continuous Mode		Batch Mode	
Nuclides Released	Unit	Quarter First	Quarter Second	Quarter	Quarter
1. Fission gases					
Kr-85	Ci	<LLD	<LLD	NA	NA
Kr-85m	Ci	<LLD	<LLD	NA	NA
Kr-87	Ci	<LLD	<LLD	NA	NA
Kr-88	Ci	<LLD	<LLD	NA	NA
Xe-133	Ci	<LLD	<LLD	NA	NA
Xe-135	Ci	<LLD	<LLD	NA	NA
Xe-135m	Ci	<LLD	<LLD	NA	NA
Xe-138	Ci	<LLD	<LLD	NA	NA
	Ci				
	Ci				
Total for Period	Ci	<LLD	<LLD	NA	NA
2. Iodines					
I-131	Ci	7.27E-06	1.46E-05	NA	NA
I-133	Ci	7.21E-06	<LLD	NA	NA
I-135	Ci	<LLD	<LLD	NA	NA
Total for Period	Ci	1.45E-05	1.46E-05	NA	NA

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REACTOR VENTILATION
GASEOUS EFFLUENTS

Nuclides Released	Unit	Continuous Mode Quarter First	Continuous Mode Quarter Second	Batch Mode Quarter	Batch Mode Quarter
3. Particulates					
Sr-89 *	Ci	8.86E-06	1.31E-05	NA	NA
Sr-90 *	Ci	2.48E-07	2.86E-07	NA	NA
Cs-134	Ci	<LLD	<LLD	NA	NA
Cs-137	Ci	8.63E-05	2.52E-04	NA	NA
Ba-140	Ci	<LLD	<LLD	NA	NA
La-140	Ci	<LLD	<LLD	NA	NA
Cr-51	Ci	1.34E-03	9.01E-05	NA	NA
Mn-54	Ci	1.38E-03	4.17E-04	NA	NA
Co-58	Ci	3.15E-04	1.72E-05	NA	NA
Co-60	Ci	4.46E-03	2.69E-03	NA	NA
I-131	Ci	<LLD	<LLD	NA	NA
Ag-110m	Ci	<LLD	<LLD	NA	NA
Mo-99	Ci	9.48E-05	2.13E-04	NA	NA
Zn-65	Ci	1.43E-04	8.67E-06	NA	NA
	Ci				
	Ci				
	Ci				
Total for Period	Ci	7.83E-03	3.70E-03	NA	NA

* NOTE: Scaled values based on previous 6 mos. data.

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LIQUID EFFLUENTS - SUMMATION OF ALL RELEASES

	Unit	Quarter First	Quarter Second	Est. Total Error, %
A. FISSION & ACTIVATION PRODUCTS				
1. Total release (not including tritium, gases, alpha)	Ci **	2.36E-02	1.03E-02	5.6
2. Average diluted concentration during batch dischargesr period	µCi/ml	2.79E-09	4.05E-09	
3. Percent of applicable limit *	% **	1.22E-01	4.95E-02	
4. Maximum diluted concentration during batch discharges	µCi/ml	[illegible]-02	2.28E-02	
		[illegible]-08	4.05E-09	
B. TRITIUM				
1. Total release	Ci **	8.91E+00	5.07E-01	6.1
2. Average diluted concentration during batch discharges	µCi/ml	1.66E-06	4.16E-07	
3. Percent of applicable limit	%	5.53E-02	1.37E-02	
C. DISSOLVED AND ENTRAINED GASES				
1. Total release	Ci	5.63E-04	<LLD	5.6
2. Average diluted concentration during batch discharges	µCi/ml	1.05E-10	<LLD	
3. Percent of applicable limit	%	5.25E-05	0	
D. GROSS ALPHA RADIOACTIVITY				
1. Total Release	Ci	5.38E-05	<LLD	14.9
2. Average concentration released during batch discharges	µCi/ml	1.00E-11	<LLD	
E. VOLUME OF WASTE RELEASED (prior to dilution	Liters	1.83E+06	1.89E+05	
F. VOLUME OF DILUTION WATER USED DURING BATCH DISCHARGES	Liters	5.38E+09	1.22E+09	
G. TOTAL VOLUME OF DILUTION WATER DURING PERIOD (QUARTER)	Liters	1.69E+11	4.40E+11	

** NOTE: A1, A3, and B1 for both quarters include activity from U-1 RHR Hx leak. All other values are for normal batch releases.

*WHOLE BODY/ORGAN

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LIQUID EFFLUENTS

		Continuous Mode		Batch Mode	
Nuclides Released	Unit	Quarter	Quarter	Quarter First	Quarter Second
Sr-89	Ci	<LLD	<LLD	2.86E-04	2.40E-04
Sr-90	Ci	<LLD	<LLD	1.52E-04	7.20E-06
Cs-134	Ci	<LLD	<LLD	1.70E-05	<LLD
Cs-137	Ci	<LLD	<LLD	2.51E-03	1.02E-03
I-131	Ci	<LLD	<LLD	<LLD	<LLD
Co-58	Ci	<LLD	<LLD	5.08E-04	1.11E-03
Co-60	Ci	<LLD	<LLD	9.91E-03	5.98E-03
Fe-59	Ci	<LLD	<LLD	<LLD	<LLD
Zn-65	Ci	<LLD	<LLD	2.36E-04	2.30E-04
Mn-54	Ci	<LLD	<LLD	1.43E-03	1.32E-03
Cr-51	Ci	<LLD	<LLD	6.77E-03	<LLD
Zr-95	Ci	<LLD	<LLD	<LLD	<LLD
Nb-95	Ci	<LLD	<LLD	3.38E-05	<LLD
Mo-99	Ci	<LLD	<LLD	3.24E-05	<LLD
Ag-110m	Ci	<LLD	<LLD	2.47E-05	<LLD
Ba-104	Ci	<LLD	<LLD	<LLD	<LLD
Cs-136	Ci	<LLD	<LLD	<LLD	<LLD
La-140	Ci	<LLD	<LLD	<LLD	<LLD
Fe-55	Ci	<LLD	<LLD	1.64E-03	4.14E-04
Unidentified	Ci	<LLD	<LLD	<LLD	<LLD
Total for Period (above)	Ci	<LLD	<LLD	2.36E-02	1.03E-02
Xe-133	Ci	<LLD	<LLD	2.74E-04	<LLD
Xe-135	Ci	<LLD	<LLD	2.89E-04	<LLD

Prepared by _____ Approved by _____
Chemistry Supervisor

APPROVED
JUN 12 1989
Q.C.O.S.R.

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

January March 1992
196-33 ft. DIFFERENTIAL TEMPERATURE

NUMBER OF OBSERVATIONS : 2180
VALUES ARE PERCENT OCCURRENCE

SPEED		WIND DIRECTION CLASSES																STABILITY CLASSES							
CLASS		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							
	MU	.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					
A	N	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.09				.09				
L	SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.05	.00	.00	.09					.09			
M	MS	.00	.00	.00	.00	.05	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09						.09		
	ES	.00	.00	.00	.05	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09							.09	
																										.37
	EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.05	.05							
	MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.09		.09						
1	SU	.00	.00	.00	.00	.00	.00	.00	.00	.05	.09	.09	.09	.00	.05	.00	.00	.37			.37					
-	N	.09	.05	.14	.28	.09	.18	.46	.23	.23	.37	.37	.18	.28	.32	.28	.14	3.67				3.67				
3	SS	.23	.37	.37	.41	.37	.55	.41	.28	.32	.28	.55	.69	1.01	.92	.69	.37	7.80					7.80			
	MS	.09	.00	.14	.09	.09	.23	.09	.09	.28	.28	.28	.09	.05	.09	.14	.00	2.02						2.02		
	ES	.05	.09	.09	.14	.41	.64	.41	.28	.09	.05	.23	.09	.14	.09	.00	.00	2.80							2.80	
																										16.79
	EU	.28	.05	.00	.00	.00	.00	.14	.32	.18	.18	.23	.46	.41	.14	.23	.14	2.75	2.75							
	MU	.05	.05	.00	.00	.09	.00	.14	.00	.14	.14	.14	.09	.05	.05	.18	.00	1.10		1.10						
4	SU	.05	.00	.05	.00	.09	.09	.14	.14	.05	.14	.18	.23	.18	.09	.14	.05	1.61			1.61					
-	N	.50	.14	.78	1.24	1.15	1.10	1.79	.50	.55	.87	1.33	.73	2.57	3.44	2.38	.73	19.82				19.82				
7	SS	.23	.23	.73	.73	.64	1.15	.83	.41	.55	1.10	2.52	1.42	1.51	1.24	1.42	.83	15.55					15.55			
	MS	.05	.05	.09	.14	.18	1.33	.23	.28	.32	.46	.00	.05	.05	.00	.05	.00	3.26						3.26		
	ES	.00	.00	.00	.09	.00	.50	.09	.05	.05	.00	.00	.00	.00	.00	.00	.00	.73							.73	
																										44.82
	EU	.73	.18	.32	.14	.23	.18	.09	.09	.14	.37	.28	.23	.14	.64	.69	.60	5.05	5.05							
	MU	.05	.05	.00	.09	.09	.14	.00	.09	.05	.00	.00	.09	.09	.14	.18	.14	1.19		1.19						
8	SU	.18	.09	.09	.09	.28	.14	.09	.05	.09	.14	.05	.09	.14	.18	.55	.37	2.61			2.61					
-	N	.96	.60	.64	1.88	1.28	2.29	.96	.37	.32	.28	.23	.23	.55	3.30	2.84	1.47	18.21				18.21				
1	SS	.28	.09	.09	.14	.18	.37	.83	.05	.00	.00	.09	.28	.41	.37	.37	.14	3.67					3.67			
2	MS	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09						.09		
	ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							.00	
																										30.83
	EU	.18	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.41	.09	.73	.73							
1	MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.05		.05						
3	SU	.09	.05	.05	.09	.00	.00	.05	.00	.00	.00	.00	.00	.00	.05	.14	.00	.50			.50					
-	N	1.42	.18	.46	.18	.50	.23	.09	.00	.00	.00	.00	.00	.00	1.01	1.01	.50	4.60				4.60				
1	SS	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.09	.00	.00	.14					.14			
8	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	
																										7.02

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

January-March 1992
196-33 ft. DIFFERENTIAL TEMPERATURE

SPEED	WIND DIRECTION CLASSES																STABILITY CLASSES							
CLASS	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							
1 MU	.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					
N	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.18				.18				
2 SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					.00			
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	
																									.18
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
0 MU	.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	.00	.00	.00	.00			.00					
N	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				.00				
2 SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					.00			
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	
																									.00
TOT	5.64	2.25	4.04	5.73	5.78	9.27	6.88	3.21	3.39	4.77	6.65	5.05	7.66	12.34	11.74	5.60	100.00	8.58	2.43	5.09	47.57	27.25	5.46	3.62	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-
1.19	.23	.32	.14	.23	.18	.23	.41	.32	.60	.60	.69	.60	.78	1.33	.83	8.58	Extremely Unstable
.09	.09	.00	.09	.18	.14	.14	.09	.18	.14	.23	.18	.14	.18	.41	.14	2.43	Moderately Unstable
.32	.14	.18	.18	.37	.23	.28	.18	.18	.37	.32	.41	.32	.37	.83	.41	5.09	Slightly Unstable
3.12	.96	2.02	3.68	3.03	3.81	3.30	1.10	1.10	1.51	1.93	1.15	3.39	8.17	6.51	2.89	47.57	Neutral
.73	.69	1.19	1.28	1.19	2.06	2.11	.73	.87	1.38	3.17	2.39	2.98	2.66	2.48	1.33	27.25	Slightly Stable
.14	.05	.23	.23	.32	1.70	.32	.37	.60	.73	.28	.14	.09	.09	.18	.00	5.46	Moderately Stable
.05	.09	.09	.23	.46	1.15	.50	.32	.14	.05	.23	.09	.14	.09	.00	.00	3.62	Extremely Stable

Wind Direction by Wind Speed

N	NNE	NE	ENE	E	ESE	SE	SE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	-WIND SPEED CLASSES-
.05	.00	.00	.05	.09	.05	.00	.00	.00	.00	.00	.00	.05	.05	.00	.05	.37	C A L M
.46	.50	.73	.92	.96	1.61	1.38	.87	.96	1.06	1.61	1.15	1.51	1.47	1.10	.50	16.79	0.9 - 3.5 mph
1.15	.50	1.66	2.16	2.16	4.17	3.35	1.70	1.83	2.89	4.40	2.93	4.77	4.95	4.40	1.74	44.82	3.6 - 7.5 mph
2.20	1.01	1.15	2.34	2.06	3.21	1.97	.64	.60	.78	.64	.92	1.33	4.63	4.63	2.71	30.83	7.6 - 12.5 mph
1.70	.23	.50	.28	.50	.23	.18	.00	.00	.05	.00	.00	.00	1.15	1.61	.69	7.02	12.6 - 18.5 mph
.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.18	18.6 - 24.5 mph
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	> 24.5 mph

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

January-March 1992
296-33 ft. DIFFERENTIAL TEMPERATURE

NUMBER OF OBSERVATIONS : 2160
VALUES ARE PERCENT OCCURRENCE

SPEED	WIND DIRECTION CLASSES																	STABILITY CLASSES							
CLASS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	EU	MU	SU	A	SS	MS	ES	TOTAL
	EU	.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						
C	SU	.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				
L	SS	.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		
	ES	.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							
	MU	.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					
-	N	.00	.05	.23	.09	.05	.09	.09	.14	.14	.14	.05	.09	.14	.19	.05	.09	1.62			1.62				
3	SS	.05	.09	.00	.05	.09	.09	.05	.09	.14	.05	.09	.09	.00	.09	.05	.05	1.06				1.06			
	MS	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05					.05		
	ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.14						.14	
																									2.87
	EU	.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	.05	.00	.09	.00	.00	.00	.05	.19		.19					
4	SU	.05	.00	.05	.00	.09	.05	.05	.00	.05	.32	.14	.09	.00	.05	.00	.14	1.06			1.06				
-	N	.09	.05	.37	.32	.19	.51	.42	.51	.14	.79	.51	.46	.69	.46	.69	.14	6.34				6.34			
7	SS	.09	.28	.28	.23	.09	.09	.19	.14	.19	.14	.14	.23	.14	.09	.23	.23	2.78					2.78		
	MS	.05	.00	.00	.00	.09	.00	.00	.00	.05	.05	.14	.00	.00	.05	.05	.05	.51						.51	
	ES	.05	.00	.05	.09	.05	.00	.00	.00	.00	.09	.23	.00	.05	.00	.00	.00	.60							.60
																									11.48
	EU	.28	.05	.00	.00	.00	.00	.00	.00	.00	.09	.05	.09	.05	.00	.05	.19	.83	.83						
	MU	.19	.05	.00	.00	.00	.05	.09	.14	.00	.09	.09	.09	.14	.09	.14	.19	1.34		1.34					
8	SU	.14	.00	.05	.00	.19	.19	.14	.14	.05	.00	.05	.14	.05	.19	.32	.09	1.71			1.71				
-	N	.46	.09	.37	.46	1.24	.69	1.94	.37	.32	.60	1.39	.60	1.16	2.31	3.01	.88	15.42				15.42			
1	SS	.46	.46	.42	.46	.46	.42	.19	.28	.19	.23	1.06	.37	.46	1.02	.32	.37	7.18					7.18		
2	MS	.00	.05	.00	.05	.09	.00	.00	.37	.05	.32	.14	.00	.28	.05	.05	.05	1.48						1.48	
	ES	.00	.00	.14	.00	.05	.09	.00	.05	.09	.28	.28	.23	.09	.05	.00	.00	1.34							1.34
																									29.31
	EU	.09	.05	.09	.00	.00	.00	.00	.00	.00	.05	.14	.00	.00	.14	.09	.14	.79	.79						
1	MU	.14	.14	.14	.05	.05	.14	.00	.00	.00	.05	.00	.09	.09	.00	.23	.32	1.44		1.44					
3	SU	.14	.14	.05	.09	.23	.05	.00	.23	.00	.05	.05	.14	.19	.37	.28	.23	2.22			2.22				
-	N	1.02	.69	.51	1.94	1.62	1.81	1.48	.65	.37	.88	.51	.65	1.34	3.19	3.38	1.62	21.67				21.67			
1	SS	.28	.14	.28	.56	.51	.65	.79	.46	.79	.97	1.06	1.11	.65	.79	.37	.60	10.09					10.09		
8	MS	.00	.00	.00	.00	.09	.14	.65	.46	.37	.23	.05	.09	.05	.00	.00	.00	2.13						2.13	
	ES	.00	.00	.00	.00	.00	.05	.14	.05	.14	.19	.05	.00	.00	.00	.00	.00	.60							.60
																									38.94

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

January-March 1992
296-33 ft. DIFFERENTIAL TEMPERATURE

SPEED	WIND DIRECTION CLASSES																STABILITY CLASSES							
CLASS	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	.14	.00	.05	.00	.09	.09	.00	.42	.42							
1 MU	.05	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.05	.05	.05	.00	.05	.32		.32						
9 SU	.09	.00	.00	.00	.00	.00	.00	.00	.05	.14	.00	.00	.09	.09	.05	.14	.65			.65					
- N	.56	.19	.37	.28	.74	1.11	.37	.23	.46	.14	.05	.23	.51	1.39	1.30	1.11	9.03				9.03				
2 SS	.05	.00	.00	.00	.05	.32	.28	.05	.00	.83	.05	.42	.32	.00	.05	.00	2.41					2.41			
4 MS	.00	.00	.00	.00	.00	.14	.23	.05	.05	.14	.05	.05	.00	.00	.00	.00	.69						.69		
ES	.00	.00	.00	.00	.00	.00	.00	.05	.05	.00	.00	.00	.00	.00	.00	.00	.09							.09	
																									13.61
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.23	.00	.23	.23							
0 MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.05		.05						
7 SU	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.09	.00	.14			.14					
N	.74	.00	.28	.09	.09	.00	.00	.00	.00	.00	.00	.05	.09	1.02	.69	.19	3.24				3.24				
2 SS	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.09	.00	.00	.00	.14					.14			
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	
																									3.80
TOT	5.05	2.53	3.66	4.77	6.16	6.67	6.53	4.44	3.75	7.27	6.34	5.51	6.71	11.76	11.85	6.99	100.00	2.27	3.33	5.79	57.31	23.66	4.86	2.78	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-
.37	.09	.09	.00	.00	.00	.00	.00	.05	.28	.19	.14	.05	.23	.46	.32	2.27	Extremely Unstable
.37	.19	.14	.05	.05	.19	.09	.14	.00	.28	.09	.32	.28	.14	.42	.60	3.33	Moderately Unstable
.42	.14	.14	.09	.51	.28	.19	.37	.19	.51	.23	.37	.32	.69	.74	.60	5.79	Slightly Unstable
2.87	1.06	2.13	3.19	4.03	4.21	3.70	1.90	1.44	2.55	2.50	2.08	3.94	8.56	9.12	4.83	57.31	Neutral
.93	.97	.97	1.30	1.20	1.57	1.53	1.02	1.30	2.22	2.41	2.22	1.67	1.99	1.02	1.34	23.66	Slightly Stable
.05	.09	.00	.05	.28	.28	.88	.88	.51	.74	.37	.14	.32	.09	.09	.09	4.86	Moderately Stable
.05	.00	.19	.09	.09	.14	.14	.14	.28	.69	.56	.23	.14	.05	.00	.00	2.78	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	C A L M
.05	.19	.23	.14	.14	.19	.14	.23	.28	.32	.14	.19	.14	.28	.09	.14	2.87	0.9 - 3.5 mph
.32	.32	.74	.65	.51	.65	.65	.65	.42	1.44	1.16	.88	.88	.65	.97	.60	11.48	3.6 - 7.5 mph
1.53	.69	.97	.97	2.13	1.44	1.76	1.34	.69	1.62	3.06	1.53	2.22	3.70	3.89	1.76	29.31	7.6 - 12.5 mph
1.67	1.16	1.06	2.64	2.50	2.82	3.06	1.85	1.67	2.41	1.85	2.08	2.31	4.49	4.35	3.01	38.94	12.6 - 18.5 mph
.74	.19	.37	.28	.79	1.57	.88	.37	.65	1.48	.14	.79	.97	1.62	1.48	1.30	13.61	18.6 - 24.5 mph
.74	.00	.28	.09	.09	.00	.05	.00	.05	.00	.00	.05	.19	1.02	1.06	.19	3.80	> 24.5 mph

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

April-June 1992
196-33 ft. DIFFERENTIAL TEMPERATURE

NUMBER OF OBSERVATIONS : 2071
VALUES ARE PERCENT OCCURRENCE

SPEED	WIND DIRECTION CLASSES																	STABILITY CLASSES							
CLASS	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	EU	MU	SU	N	SD	MS	ES	TOTAL
EU	.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						
C SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00					
A N	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05				.05				
L SS	.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		
ES	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.05							.05	
																									.10
EU	.10	.05	.00	.00	.05	.00	.00	.00	.05	.05	.05	.05	.05	.00	.19	.05	.68	.68							
MU	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.05	.00	.10	.05	.05	.00	.29		.29						
1 SU	.00	.05	.00	.00	.00	.14	.10	.00	.05	.05	.05	.00	.00	.19	.05	.00	.68			.68					
- N	.14	.24	.05	.00	.14	.05	.14	.24	.24	.05	.24	.19	.10	.24	.29	.14	2.51				2.51				
3 SS	.68	.14	.58	.72	.53	.48	.77	.14	.43	.53	.43	.05	.63	.34	.34	.48	7.29					7.29			
MS	.42	.43	.34	.34	.97	1.01	.82	.39	.24	.19	.24	.19	.14	.48	.34	.58	7.15						7.15		
ES	.34	.19	.29	.53	1.01	2.51	1.74	.87	.72	.14	.19	.10	.24	.72	.34	.14	10.09							10.09	
																									28.68
EU	1.21	1.11	.53	.39	.87	.39	.72	.68	.68	1.40	1.26	.68	.43	.92	.58	.48	12.31	12.31							
MU	.29	.14	.00	.00	.19	.00	.10	.24	.00	.10	.00	.00	.05	.00	.10	.00	1.21		1.21						
4 SU	.05	.29	.14	.05	.19	.39	.10	.19	.14	.19	.29	.05	.05	.05	.19	.05	2.41			2.41					
- N	.68	.72	1.16	1.74	1.35	1.40	.53	.87	.48	.48	.39	.24	.05	.24	.97	1.50	12.80				12.80				
7 SS	.77	.39	1.21	.87	.97	.82	.34	.68	.68	1.16	.68	.19	.19	.34	1.06	1.11	11.40					11.40			
MS	.29	.14	.10	.14	.19	.68	.29	.14	.34	.05	.05	.00	.05	.14	.29	.05	2.95						2.95		
ES	.00	.00	.00	.00	.05	.10	.14	.05	.05	.00	.00	.00	.00	.29	.00	.00	.68							.68	
																									43.75
EU	1.26	1.11	.68	.34	.29	.63	.72	.58	.43	1.16	.43	.39	.14	.53	1.30	1.59	11.59	11.59							
MU	.00	.00	.10	.05	.14	.19	.10	.05	.00	.05	.00	.00	.05	.05	.05	.19	1.01		1.01						
8 SU	.14	.05	.10	.14	.00	.19	.14	.00	.29	.10	.24	.05	.00	.14	.19	.19	1.98			1.98					
- N	.77	.19	.34	.29	1.01	1.64	.43	.34	.14	.72	.48	.72	.14	.48	1.59	.34	9.66				9.66				
1 SS	.10	.00	.05	.00	.10	.19	.24	.48	.24	.34	.05	.00	.05	.10	.19	.19	2.32					2.32			
2 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	
																									26.56
EU	.05	.00	.05	.00	.05	.00	.05	.00	.00	.00	.00	.00	.00	.05	.00	.00	.24	.24							
1 MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.05	.00	.10		.10						
3 SU	.05	.00	.00	.00	.05	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14			.14					
- N	.05	.00	.00	.05	.00	.05	.05	.05	.00	.10	.00	.00	.00	.05	.00	.00	.39				.39				
1 SS	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.05					.05			
8 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	
																									.92

CECo QUAD CITIES STATION — April-June 1992
33 ft. WIND SPEED and WIND DIRECTION — 196-33 ft. DIFFERENTIAL TEMPERATURE

SPEED CLASS	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							
1 MU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		.00						
9 SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00					
- N	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				.00				
2 SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					.00			
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	
																									.00
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						
7 SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			.00					
N	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				.00				
2 SS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					.00			
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	
																									.00
TOT	7.44	6.26	5.70	5.60	8.16	10.91	7.58	6.04	5.21	6.95	5.17	2.90	2.46	5.41	8.21	7.10	100.00	24.82	2.61	5.21	25.40	21.05	10.09	10.82	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-
2.61	2.27	1.26	.72	1.26	1.01	1.50	1.26	1.16	2.61	1.74	1.11	.63	1.50	2.08	2.12	24.82	Extremely Unstable
.29	.14	.10	.05	.34	.19	.24	.29	.00	.14	.10	.00	.19	.10	.24	.19	2.61	Moderately Unstable
.24	.39	.24	.19	.24	.77	.34	.19	.48	.34	.58	.10	.05	.39	.43	.24	5.21	Slightly Unstable
1.69	1.16	1.55	2.08	2.51	3.14	1.16	1.50	.87	1.35	1.11	1.16	.29	1.01	2.85	1.98	25.40	Neutral
1.55	.53	1.83	1.55	1.59	1.50	1.35	1.35	1.35	2.03	1.16	.24	.87	.77	1.59	1.79	21.05	Slightly Stable
.72	.58	.43	.48	1.16	1.69	1.11	.53	.58	.24	.29	.19	.19	.63	.63	.63	10.09	Moderately Stable
.34	.19	.29	.53	1.06	2.61	1.88	.92	.77	.14	.19	.10	.24	1.01	.39	.14	10.82	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-
.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.10	C A L M
1.69	1.11	1.26	1.59	2.70	4.20	3.62	1.64	1.74	1.01	1.26	.58	1.26	2.03	1.59	1.40	28.68	0.9 - 3.5 mph
3.28	2.80	3.14	3.14	3.81	3.77	2.22	2.85	2.37	3.38	2.86	1.16	.82	1.98	3.19	3.15	43.75	3.6 - 7.5 mph
2.27	1.35	1.26	.82	1.55	2.85	1.64	1.45	1.11	2.37	1.21	1.16	.39	1.30	3.33	2.51	26.56	7.6 - 12.5 mph
.14	.00	.05	.05	.10	.10	.10	.10	.00	.10	.05	.00	.00	.10	.05	.00	.92	12.6 - 18.5 mph
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	18.6 - 24.5 mph
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	> 24.5 mph

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

April-June 1992
299-33 ft. DIFFERENTIAL TEMPERATURE

NUMBER OF OBSERVATIONS : 2130
VALUES ARE PERCENT OCCURRENCE

SPEED	WIND DIRECTION CLASSES																	STABILITY CLASSES							
CLASS	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							
MU	.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					
A N	.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			
M 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	
																									.00
EU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00							
MU	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05		.05						
1 SU	.05	.05	.05	.00	.00	.00	.00	.00	.00	.05	.09	.05	.00	.00	.00	.00	.33			.33					
- N	.05	.05	.00	.05	.05	.00	.00	.00	.00	.09	.09	.05	.14	.09	.09	.00	.75				.75				
3 SS	.00	.14	.09	.00	.00	.09	.05	.00	.05	.05	.00	.00	.05	.05	.05	.05	.66					.66			
MS	.05	.05	.05	.00	.05	.09	.05	.05	.05	.00	.05	.00	.00	.00	.00	.00	.47						.47		
ES	.00	.00	.05	.05	.00	.00	.00	.00	.00	.05	.05	.05	.05	.05	.05	.00	.38							.38	
																									2.63
EU	.19	.19	.00	.09	.00	.19	.09	.05	.14	.28	.28	.00	.23	.28	.38	.19	2.68	2.68							
MU	.14	.14	.14	.00	.23	.05	.05	.05	.00	.23	.23	.00	.09	.33	.19	.00	1.88		1.8						
4 SU	.05	.09	.09	.00	.05	.19	.09	.09	.00	.09	.05	.00	.05	.00	.14	.05	1.03			1.0					
- N	.19	.38	.19	.33	.47	.05	.33	.00	.05	.42	.38	.05	.09	.00	.28	.14	3.33				3.33				
7 SS	.14	.14	.09	.1	.23	.05	.19	.05	.09	.28	.19	.00	.14	.09	.05	.19	2.11					2.11			
MS	.09	.33	.28	.14	.19	.09	.23	.19	.14	.09	.05	.05	.05	.05	.09	.09	2.16						2.16		
ES	.14	.05	.14	.14	.14	.23	.28	.09	.14	.19	.28	.09	.09	.09	.14	.09	2.35							2.35	
																									15.45
EU	.99	.61	.42	.28	.52	.23	.33	.66	.33	.52	.28	.23	.14	.19	.14	.38	6.24	6.24							
MU	.47	.23	.14	.09	.52	.09	.14	.14	.14	.00	.05	.00	.00	.05	.23	.05	2.35		2.35						
8 SU	.33	.28	.28	.23	.23	.28	.09	.14	.09	.19	.00	.05	.00	.00	.09	.14	2.44			2.44					
- N	.75	.85	1.03	1.64	.99	1.03	.33	.42	.47	.38	.23	.14	.09	.14	.61	1.08	10.19				10.19				
1 SS	.80	.56	.52	.66	1.31	.33	.33	.66	.33	.47	.42	.23	.00	.23	.28	.56	7.70					7.70			
2 MS	.56	.47	.23	.09	.19	.52	.70	.56	.09	.23	.09	.00	.05	.09	.09	.14	4.13						4.13		
ES	.23	.14	.00	.14	.05	.14	.33	.66	.19	.52	.28	.05	.00	.00	.05	.14	2.91							2.91	
																									35.96
EU	.52	.47	.19	.05	.19	.23	.42	.47	.47	.66	.00	.23	.19	.19	.47	.89	5.63	5.63							
1 MU	.14	.33	.23	.05	.14	.14	.05	.05	.00	.19	.09	.05	.05	.14	.14	.14	1.92		1.92						
3 SU	.05	.05	.00	.05	.19	.19	.09	.00	.00	.09	.09	.14	.05	.05	.28	.19	1.41			1.41					
- N	.85	.47	.66	.80	.99	1.97	.19	.56	.47	.47	.66	.80	.00	.66	1.13	1.08	11.74				11.74				
1 SS	.56	.38	.66	.47	.61	.80	.33	.38	.94	.70	.52	.28	.19	.23	.38	.89	8.31					8.31			
8 MS	.23	.00	.00	.14	.38	.99	.66	.38	.42	.09	.09	.00	.05	.05	.05	.19	3.71						3.71		
ES	.14	.19	.05	.05	.00	.14	.14	.42	.42	.38	.00	.00	.00	.00	.00	.00	1.92							1.92	
																									34.65

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

April-June 1992
296-33 ft. DIFFERENTIAL TEMPERATURE

SPEED	WIND DIRECTION CLASSES																STABILITY CLASSES							
CLASS	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	.05	.00	.00	.00	.00	.00	.00	.00	.19	.28	.14	.00	.05	.19	.33	.05	1.27	1.27							
1 MU	.00	.00	.00	.00	.00	.00	.00	.09	.09	.14	.00	.05	.05	.09	.09	.00	.61		.61						
9 SU	.00	.00	.00	.00	.05	.09	.00	.09	.05	.00	.00	.00	.05	.00	.19	.00	.52			.52					
- N	.05	.00	.09	.05	.23	.38	.09	.23	.52	.66	.05	.00	.05	.47	.42	.05	3.33				3.33				
2 SS	.00	.00	.00	.00	.09	.38	.05	.28	.33	.70	.09	.09	.14	.09	.09	.23	2.63					2.63			
4 MS	.00	.00	.00	.00	.00	.23	.00	.19	.33	.14	.00	.00	.05	.00	.00	.00	.94						.94		
ES	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.05							.05	
																									9.34
FU	.00	.00	.00	.00	.00	.00	.05	.00	.00	.05	.00	.00	.00	.00	.00	.00	.09	.09							
0 MU	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.05	.00	.00	.09		.09						
1 SU	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.05	.00	.19			.19					
N	.00	.00	.00	.00	.00	.00	.09	.33	.23	.28	.00	.09	.09	.00	.00	.00	1.13				1.13				
2 SS	.00	.00	.00	.00	.00	.00	.00	.19	.19	.09	.00	.00	.00	.00	.00	.00	.47					.47			
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	
																									1.87
TOT	7.84	6.92	6.68	6.82	8.08	9.11	6.82	7.46	7.00	9.20	4.84	2.77	2.25	3.94	6.57	7.00	100.00	15.82	6.90	5.92	30.47	21.88	11.41	7.61	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-
1.74	1.27	.61	.42	.70	.66	.89	1.17	1.13	1.78	.70	.47	.61	.85	1.31	1.50	15.82	Extremely Unstable
.80	.70	.52	.14	.89	.28	.28	.33	.23	.56	.38	.09	.19	.66	.66	.19	6.90	Moderately Unstable
.47	.47	.42	.28	.52	.66	.28	.33	.14	.56	.23	.23	.14	.05	.75	.38	5.92	Slightly Unstable
1.88	1.74	1.97	2.86	2.72	3.43	1.03	1.36	1.74	2.30	1.41	1.13	.47	1.36	2.54	2.35	30.47	Neutral
1.50	1.22	1.36	1.36	2.25	1.64	.94	1.55	1.92	2.30	1.22	.61	.52	.70	.85	1.92	21.88	Slightly Stable
.94	.85	.56	.38	.80	1.92	1.64	1.36	1.03	.56	.28	.05	.19	.19	.23	.47	11.41	Moderately Stable
.52	.38	.23	.38	.19	.52	.75	1.17	.80	1.13	.61	.19	.14	.14	.23	.23	7.61	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	C A L M
.19	.28	.23	.09	.09	.19	.09	.05	.09	.23	.28	.14	.23	.19	.19	.05	2.63	0.9 - 3.5 mph
.94	1.31	.94	.89	1.31	.85	1.27	.52	.56	1.60	1.46	.19	.75	.85	1.27	.75	15.45	3.6 - 7.5 mph
4.13	3.15	2.63	3.15	3.80	2.63	2.25	3.24	1.64	2.30	1.36	.70	.28	.70	1.50	2.49	35.96	7.6 - 12.5 mph
2.49	1.88	1.78	1.60	2.49	4.37	1.88	2.25	2.72	2.58	1.46	1.50	.52	1.31	2.44	3.38	34.65	12.6 - 18.5 mph
.09	.00	.09	.09	.38	1.08	.14	.89	1.55	1.92	.28	.14	.38	.85	1.13	.33	9.34	18.6 - 24.5 mph
.00	.00	.00	.00	.00	.00	.19	.52	.42	.56	.00	.09	.09	.05	.05	.00	1.97	> 24.5 mph

Solid RadWaste Semi-Annual Report

January 1992

Shipping Date	Carrier	Site	Volume	Millicuries
01/06/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	14540.00
01/09/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	898.30
01/14/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	21640.00
01/16/92	KINDRICK TRUCKING	QUADREX	1290.10	9.19
01/16/92	CHEM NUCLEAR SYSTEMS	U.S. ECOLOGY, WA	349.10	8.72
01/21/92	RAY-TECH	CHANNAHAN	622.50	28.27
01/28/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	120.30	53470.00
01/28/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	83.40	16670.00
			3082.80	107264.48

Solid RadWaste Semi-Annual Report

February 1992

Shipping Date	Carrier	Site	Volume	Millicuries
02/04/92	RAY-TECH	CHANNAHAN	675.00	56.28
02/11/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	170.80	56412.00
02/11/92	KINDRICK TRUCKING	QUADREX	1290.10	32.91
02/18/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	20720.00
02/24/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	32660.00
02/26/92	CHEM NUCLEAR SYSTEMS	U.S. ECOLOGY, WA	517.50	106.57
			3065.00	109987.76

Solid RadWaste Semi-Annual Report

March 1992

Shipping Date	Carrier	Site	Volume	Millicuries
03/04/92	RAY-TECH	CHANNAHAN	622.50	27.75
03/05/92	KINDRICK TRUCKING	QUADREX	1290.10	8.39
03/11/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	92250.00
03/12/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	170.80	694.30
03/17/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	40180.00
03/19/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	917.40
03/26/92	RAY-TECH	CHANNAHAN	615.00	38.11
03/30/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	416.80
			3521.00	134532.75

Solid RadWaste Semi-Annual Report

April 1992

Shipping Date	Carrier	Site	Volume	Millicuries
04/10/92	KINDRICK TRUCKING	QUADREX	1350.10	23.00
04/15/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	120.30	71390.00
04/27/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	120.30	24110.00
			1590.70	95523.00

Solid RadWaste Semi-Annual Report

May 1992

Shipping Date	Carrier	Site	Volume	Millicuries
05/06/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	120.30	74950.00
05/07/92	RAY-TECH	CHANNAHAN	630.00	44.79
05/08/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	384.40
05/13/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	120.30	156600.00
05/15/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	120.30	150200.00
05/18/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	360.90
05/20/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	120.30	126000.00
05/28/92	KINDRICK TRUCKING	QUADREX	390.00	1.29
			1512.80	508541.38

Solid RadWaste Semi-Annual Report

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Shipping Date	Carrier	Site	Volume	Millicuries
06/01/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	120.30	152700.00
06/03/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	120.30	140200.00
06/10/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	120.30	267100.00
06/12/92	CHEM NUCLEAR SYSTEMS	U.S. ECOLOGY, WA	105.00	471.90
06/17/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	120.30	527600.00
06/19/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	120.30	235100.00
06/23/92	KINDRICK TRUCKING	QUADREX	1086.50	87.86
06/24/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	120.30	381000.00
06/26/92	CHEM NUCLEAR SYSTEMS	BARNWELL, SC	205.80	559.90
			2119.10	1704819.66