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February 29, 1980

Mr. Boyce H. Grier, Director  
Office of Inspection and Enforcement  
Region 1  
United States Nuclear Regulatory Commission  
631 Park Avenue  
King of Prussia, Pennsylvania 19406

Dear Mr. Grier:

SUBJECT: Oyster Creek Nuclear Generating Station  
Docket No. 50-219  
Effluent Release Report No. 79-2

Enclosed are two (2) copies of Effluent Release Report No. 79-2 for our Oyster Creek Nuclear Generating Station Unit No. 1. This report is submitted in accordance with Section 6.9.3.c of the Technical Specifications of the Oyster Creek Unit No. 1 Provisional License, DPR-16.

Very truly yours,

Donald A. Ross, Manager  
Generating Stations-Nuclear

ck

Enclosures (2)

cc: ~~Director, Office of Inspection and Enforcement~~ (6 copies)  
c/o Distribution Services Branch, DDC, ADM  
United States Nuclear Regulatory Commission  
Washington, DC 20555

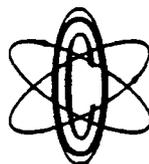
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General Public Utilities System

# OYSTER CREEK NUCLEAR GENERATING STATION



SEMIANNUAL REPORT NO. 79-2

PROVISIONAL OPERATING LICENSE NO. DPR-16

RADIOACTIVE EFFLUENT RELEASES

JULY 1, 1979 THROUGH DECEMBER 31, 1979

8003110020

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I. INTRODUCTION

## I INTRODUCTION

This report is submitted in accordance with Section 6.9.3 of the Technical Specifications of the Oyster Creek Unit No. 1 Provisional Operating License, DPR - 16.

The following is a brief summary of plant operations during the reporting period.

### OPERATIONS SUMMARY

June 1, 1979	Reactor Startup Plant Generator on Line		
June 15, 1979	Operating at approximately	95%	Rated Power
June 30, 1979	Operating at approximately	99%	Rated Power
July 15, 1979	Operating at approximately	72%	Rated Power
July 31, 1979	Operating at approximately	98%	Rated Power
Aug. 15, 1979	Operating at approximately	99%	Rated Power
Aug. 31, 1979	Operating at approximately	97%	Rated Power
Sept. 15, 1979	Operating at approximately	83%	Rated Power
Sept. 17, 1979	Reactor Scram		
Sept. 18, 1979	Reactor Critical Generator on Line		
Sept. 30, 1979	Operating at approximately	99%	Rated Power
Oct. 15, 1979	Operating at approximately	99%	Rated Power
Oct. 31, 1979	Operating at approximately	99%	Rated Power
Nov. 15, 1979	Operating at approximately	96%	Rated Power
Nov. 23, 1979	Reactor Scram		
Nov. 25, 1979	Reactor Critical		
Nov. 26, 1979	Generator on Line		
Nov. 30, 1979	Operating at approximately	93%	Rated Power
Dec. 15, 1979	Operating at approximately	89%	Rated Power
Dec. 31, 1979	Operating at approximately	84%	Rated Power

II. EFFLUENT AND WASTE DISPOSAL SUMMARY

## II. EFFLUENT AND WASTE DISPOSAL SUMMARY

### A. Gaseous Effluents

During the reporting period, July 1, 1979 through December 31, 1979, a total of  $5.08 \text{ E } 5$  curies of fission and activation gases, 4.11 curies of non-particulate halogens with half-lives greater than eight days,  $2.46 \text{ E } 1$  curies of particulate activity with half-lives greater than eight days, and  $1.94 \text{ E } 1$  curies of tritium were released. The maximum hourly release rate of gross activity was  $4.68 \text{ E } 4$  microcuries per second at approximately 1300 on August 13, 1979.

The airborne releases are summarized in Table II-1A.

### B. Liquid Effluents

A total of  $1.66 \text{ E } 7$  liters of water was processed through the radwaste system. Of this,  $5.13 \text{ E } 4$  liters containing  $1.08 \text{ E } 2$  curies of activity were released to the environment. During the reporting period, one abnormal liquid release occurred. On August 13, 1979, approximately  $8.71 \text{ E } 3$  liters of water, containing a total of  $1.02 \text{ E } 4$  curies of activity was released to the discharge canal. The water was pumped from a moat around an outside tank to a storm drain which drains to the canal.

The liquid release data are summarized in Table II-2A.

### C. Solid

During the reporting period, a total volume of  $5.94 \text{ E } 2$  cubic meters of solid waste containing  $6.82 \text{ E } 2$  curies of activity was shipped off site in 84 shipments. No irradiated material was shipped off site during this period.

The waste shipment data are summarized in Table II-3.

### D. Meteorological Data

During the reporting period, onsite meteorological conditions were monitored and recorded. Greater than 90 percent data recovery was achieved for this period. Joint frequency distribution of wind speed and wind direction per atmospheric stability class per quarter tables summarize the data. Included is 116 meter and 10 meter data.

The meteorological data are summarized in Tables II-4A.

### E. Special Analyses

A program was developed to monitor and quantify radioactive gaseous vent releases from new radwaste. Charts, for the year, and several months of sampling data were analyzed to formulate releases.

The new radwaste data are summarized in Table II-5.

EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT  
SUPPLEMENTAL INFORMATION

FACILITY - Oyster Creek Nuclear Generating Station  
LICENSEE - Jersey Central Power & Light Company

1. Regulatory Limits

- a. Fission and Activation Gases:  
Technical Specification 3.6.A.1

$$Q = \frac{0.21}{\bar{E}} \text{ Ci/sec}$$

- b. Iodines:  
Technical Specification 3.6.A.2  
4 uCi/Sec

- c. Particulates, half-lives >8 days:  
Technical Specification 3.6.A.2  
4 uCi/sec

- d. Liquid Effluents:  
Technical Specification 3.6.B.1  
Maximum permissible concentrations,  
Appendix B, Table II, Column 2,  
of 10 CFR 20 and notes 1 through 5 thereto.

2. Maximum Permissible Concentrations

- a. Fission and Activation Gases:  
1. First Quarter - 3.45 E-3 uCi/cc  
2. Second Quarter - 3.42 E-3 uCi/cc

- b. Iodines:  
5.20 E-8 uCi/cc

- c. Particulates:  
5.20 E-8 uCi/cc

- d. Liquid Effluents:

From Appendix B, Table II, Column 2, of  
10 CFR 20 and notes 1 through 5 thereto:

(NOTE: MPC's for isotopes detected listed below)  
Unit - uCi/ml

H-3	3 E-3	Xe-133	3 E-6
Mn-54	1 E-4	Cs-134	9 E-6
Co-60	5 E-5	Xe-135	3 E-6
Kr-88	3 E-6	Cs-137	2 E-5
Sr-89	3 E-6	Ce-144	1 E-5
Sr-90	3 E-7	Pa- <del>233</del>	1 E-4
Tc-99m	6 E-3		
Sb-124	2 E-5		

3. Average Energy

- a. First Quarter - 7.92 E-1 mev
- b. Second Quarter - 7.96 E-1 mev

4. Measurements and Approximation of Total Radioactivity

- a. Fission and Activation Gases:  
The incorporation of a weekly grab sample analysis using gamma ray spectrometry with a GeLi Detector, a conversion factor and the continuous recording of the stack effluent on a continuous activity monitor.
- b. Iodines:  
Semi-weekly sample analysis - gamma ray spectrometry with a GeLi Detector, low background beta counter, internal proportional beta counter, and a single channel gamma counter.
- c. Particulates:  
Semi-weekly sample analysis - gamma ray spectrometry with a GeLi Detector, low background beta counter, internal proportional beta counter, and single channel gamma counter.
- d. Liquid Effluents:  
Analysis per batch release - gamma ray spectrometry with a GeLi Detector, a low background beta counter, and a liquid scintillation counter.

5. Batch Releases

a. Liquid

1. Number of batch releases:
  - a. Third Quarter - 1 release
  - b. Fourth Quarter - 19 releases
2. Total time period for batch releases:
  - a. Third Quarter - 600 minutes
  - b. Fourth Quarter - 200 minutes
3. Maximum time period for a batch release:
  - a. Third Quarter - -- minutes
  - b. Fourth Quarter - 25 minutes
4. Average time period for a batch release:
  - a. Third Quarter - 600 minutes
  - b. Fourth Quarter - 11 minutes
5. Minimum time period for a batch release:
  - a. Third Quarter - -- minutes
  - b. Fourth Quarter - 5 minutes
6. Average stream flow during periods of release of effluent in a flowing stream:
  - a. Third Quarter - 3.71 E 6 liters/minute
  - b. Fourth Quarter - 3.71 E 6 liters/minute

b. Gaseous

Not applicable (batch releases)

6. Abnormal Releases

a. Liquid

1. Number of releases:

1 release
2. Total activity released:

1.02 E-4 Curies

b. Gaseous

1. Number of releases:

None
2. Total activity released:

Not Applicable

TABLE II-1A  
 EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1979 - 2  
 GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

	Unit	Third Quarter	Fourth Quarter	Est. Total Error %
--	------	---------------	----------------	--------------------

A. Fission & activation gases

1. Total release	Ci	2.72 E 5	2.36 E 5	3.0 E 1
2. Average release rate for period	μCi/sec	3.46 E 4	3.02 E 4	
3. Percent of Tech Spec Limit	%	1.31 E 1	1.15 E 1	

B. Iodines

1. Total iodine-131	Ci	2.67	1.44	2.5 E 1
2. Average release rate for period	μCi/sec	3.36 E-1	1.81 E-1	
3. Percent of Tech Spec Limit	%	8.40	4.53	

C. Particulates

1. Particulates with half-lives >8 days	Ci	1.73 E-1	7.32 E-2	2.5 E 1
2. Average release rate for period	μCi/sec	2.18 E-2	9.20 E-3	
3. Percent of Tech Spec Limit	%	5.45 E-1	2.30 E-1	
4. Gross alpha radioactivity	Ci	4.79 E-5	4.44 E-5	

D. Tritium

1. Total release	Ci	1.06 E 1	8.81	4.0 E 1
2. Average release rate for period	μCi/sec	1.33	1.11	

TABLE II - 1B  
 EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1979-2  
 GASEOUS EFFLUENTS-ELEVATED RELEASE

CONTINUOUS MODE

Nuclides Released	Unit	Third Quarter	Fourth Quarter		MDL
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1. Fission gases

krypton-85m	Ci	1.07 E 4	9.04 E 3		2.09 E-9
krypton-87	Ci	3.60 E 4	3.34 E 4		7.71 E-9
krypton-88	Ci	3.56 E 4	3.13 E 4		6.17 E-9
xenon-133	Ci	1.15 E 4	8.54 E 3		1.62 E-9
xenon-135	Ci	6.10 E 4	5.45 E 4		1.71 E-9
xenon-135m	Ci	2.70 E 4	2.28 E 4		8.60 E-9
xenon-138	Ci	9.03 E 4	7.59 E 4		1.11 E-8
others					
krypton-89	Ci	8.16	5.65		2.99 E-7
xenon-133m	Ci	<MDL	<MDL		1.47 E-8
xenon-137	Ci	1.78 E 2	1.33 E 2		2.44 E-7
Total for period	Ci	2.72 E 5	2.36 E 5		

2. Iodines

Iodine-131	Ci	2.67	1.44		6.90 E-11
Iodine-133	Ci	9.26	4.46		1.18 E-10
Iodine-135	Ci	1.31 E 1	5.55		7.55 E-10
Total for period	Ci	2.50 E 1	1.15 E 1		

TABLE II - 1C  
EFFLUENT AND WASTE DISPOSAL SEMI-ANNUAL REPORT 1979-2  
GASEOUS EFFLUENTS - ELEVATED RELEASE

Nuclides Released	Unit	Third Quarter	Fourth QUARTER		MDL
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3. Particulates

Strontium - 89	Ci	1.08 E-2	1.52 E-2		5.58 E-10
Strontium - 90	Ci	5.22 E-2	5.25 E-5		2.52 E-10
Cesium - 134	Ci	<MDL	3.20 E-5		1.32 E-10
Cesium - 137	Ci	8.77 E-4	5.43 E-4		5.14 E-10
Barium - 140	Ci	8.89 E-2	4.40 E-2		2.93 E-10
Lanthanum - 140	Ci	7.08 E-2	3.56 E-2		1.22 E-10
Others					
Chromium - 51	Ci	4.59 E-4	<MDL		7.14 E-10
Manganese - 54	Ci	2.91 E-3	4.03 E-4		1.83 E-10
Cobalt - 58	Ci	4.96 E-3	<MDL		1.67 E-10
Iron - 59	Ci	<MDL	2.98 E-4		3.65 E-10
Cobalt - 60	Ci	2.15 E-3	2.93 E-3		1.42 E-10
Strontium - 91	Ci	6.22 E-1	2.61 E-1		2.86 E-10
Niobium - 95	Ci	6.65 E-4	<MDL		2.07 E-10
Molybdenum - 99	Ci	<MDL	1.19 E-3		5.99 E-10
Technetium - 99m	Ci	6.16 E-2	4.73 E-2		5.91 E-11
Ruthenium - 103	Ci	1.27 E-4	<MDL		6.05 E-11
Iodine - 131	Ci	7.81 E-3	7.97 E-3		4.60 E-11
Iodine - 133	Ci	6.66 E-2	6.49 E-2		7.35 E-11
Iodine - 135	Ci	1.49 E-1	9.82 E-2		4.40 E-10
Cerium - 141	Ci	1.82 E-4	1.24 E-4		8.87 E-11
Cerium - 144	Ci	4.64 E-4	1.38 E-4		9.50 E-10
Protactinium - 233	Ci	<MDL	1.55 E-3		1.38 E-10
Neptunium - 239	Ci	1.01 E-3	1.33 E-3		9.53 E-11
Total		1.14	5.83 E-1		

TABLE II-2A  
EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1979 - 2  
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

	Unit	Third Quarter	Fourth Quarter	Est. Total Error %
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A. Fission and activation products

1. Total releases (not including tritium, gases, alpha)	Ci	2.79 E-5	3.38 E-5	3.0 E 1
2. Average diluted concentration during period	µCi/ml	2.26 E-13	2.69 E-13	
3. Percent of applicable limit	%	1.45 E-6	4.53 E-7	

B. Tritium

1. Total release	Ci	7.40 E-5	1.07 E-2	3.0 E 1
2. Average diluted concentration during period	µCi/ml	5.98 E-13	8.52 E-11	
3. Percent of applicable limit	%	1.99 E-8	2.84 E-6	

C. Dissolved and entrained gases

1. Total release	Ci	<MDL	7.21 E-6	3.0 E 1
2. Average diluted concentration during period	µCi/ml	-	5.74 E-14	
3. Percent of applicable limit	%	-	1.91 E-6	

D. Gross alpha radioactivity

1. Total release	Ci	<MDL	5.33 E-7	3.0 E 1
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E. Volume of waste released (prior to dilution)	liters	8.71 E 3	4.26 E 4	1.0 E 1
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F. Volume of dilution water used during period	liters	4.65 E 11	4.72 E 11	1.0 E 1
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TABLE II - 2B  
EFFLUENT AND WASTE DISPOSAL REPORT 1979 - 2  
LIQUID EFFLUENTS

BATCH RELEASES

Nuclide	Unit	Third Quarter	Fourth Quarter	MDL
Strontium - 89	Ci	2.13 E-7	1.52 E-5	3.21 E-11
Strontium - 90	Ci	7.77 E-8	2.03 E-7	1.30 E-11
Cesium - 134	Ci	3.80 E-6	< MDL	4.48 E-10
Cesium - 137	Ci	1.90 E-5	2.22 E-6	6.78 E-10
Manganese - 54	Ci	7.62 E-7	1.28 E-6	6.58 E-10
Cobalt - 60	Ci	4.04 E-6	1.14 E-5	7.17 E-10
Technetium - 99m	Ci	<MDL	1.82 E-7	3.11 E-10
Antimony - 124	Ci	<MDL	1.21 E-6	9.22 E-10
Cerium - 144	Ci	<MDL	1.51 E-6	2.05 E-9
Protactinium - 233	Ci	<MDL	5.63 E-7	8.59 E-10
Total (above)	Ci	2.79 E-5	3.38 E-5	
Krypton - 88	Ci	<MDL	3.65 E-6	1.46 E-9
Xenon - 133	Ci	<MDL	5.38 E-7	1.53 E-9
Xenon - 135	Ci	<MDL	3.02 E-6	1.44 E-9
Total (above)	Ci	<MDL	7.21 E-6	

TABLE II-3  
 EFFLUENT AND WASTE DISPOSAL SEMIANNUAL REPORT 1979-2  
 SOLID WASTE AND IRRADIATED FUEL SHIPMENTS

A. Solid waste shipped offsite for burial or disposal (not irradiated fuel)

1. Type of waste	Unit	6-month period	Est. Total Error, %
a. Spent resins, filter sludges, evaporator bottoms, etc.	m <sup>3</sup>	3.31 E 2	5.0 E 1
b. Dry compressible waste contaminated equip., etc.	Ci	6.62 E 2	5.0 E 1
	m <sup>3</sup>	2.63 E 2	
	Ci	1.97 E 1	
c. Irradiated components, control rods, etc.	m <sup>3</sup>	None	-
	Ci		
d. Other (describe)	m <sup>3</sup>	None	-
	Ci		

2. Estimate of major nuclide composition (by type of waste)	Percentage	Activity (Ci)	MDL (Ci)
a. Sr-89	39.7	2.63 E 2	5.00 E-11
Co-60	28.7	1.90 E 2	1.06 E-10
Mn-54	7.9	5.23 E 1	7.81 E-11
Cs-137	6.0	3.97 E 1	4.59 E-11
Sr-90	2.8	1.85 E 1	2.00 E-11
b.			
c.			
d.			

3. Solid Waste Disposition	Mode of Transportation	Destination
Number of Shipments		
84	Motor vehicle	Barnwell, SC

B. Irradiated Fuel Shipments (Disposition)

Number of Shipments	Mode of Transportation	Destination
None		

TABLE II-4A

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: April 1, 1979 through June 30, 1979

STABILITY CLASS: Extremely unstable

ELEVATION: 10 Meters

WIND SPEED (MPH)

WIND DIRECTION	Calmt+ - 3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	1	3	0	0	0	4
NNE	0	1	5	1	0	0	7
NE	0	1	9	1	0	0	11
ENE	0	0	16	1	0	0	17
E	0	2	10	1	0	0	13
ESE	0	4	6	0	0	0	10
SE	0	1	16	2	0	0	19
SSE	0	1	5	0	0	0	6
S	0	0	6	4	0	0	10
SSW	0	2	2	2	0	0	6
SW	0	2	5	0	0	0	7
WSW	0	5	21	0	0	0	26
W	0	1	11	6	2	0	20
WNW	0	8	11	12	0	0	31
NW	0	1	13	8	0	0	22
NNW	0	0	6	3	0	0	9
VARIABLE	-	-	-	-	-	-	0
TOTAL	0	30	145	41	2	0	218 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 109

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: April 1, 1979 through June 30, 1979

STABILITY CLASS: Moderately unstable

ELEVATION: 10 Meters

## WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	1	1	0	0	0	2
NNE	0	3	1	1	0	0	5
NE	0	0	2	0	0	0	2
ENE	0	0	9	2	0	0	11
E	0	3	7	0	0	0	10
ESE	0	3	7	0	0	0	10
SE	0	0	11	2	0	0	13
SSE	0	3	8	4	1	0	16
S	0	3	11	11	1	0	26
SSW	0	1	4	1	0	0	6
SW	0	2	2	0	0	0	4
WSW	0	0	5	0	0	0	5
W	0	3	2	0	0	0	5
WNW	0	5	2	3	0	0	10
NW	0	2	6	0	0	0	8
NNW	0	3	2	0	0	0	5
VARIABLE	-	-	-	-	-	-	0
TOTAL	0	32	80	24	2	0	138 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 109

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: April 1, 1979 through June 30, 1979

STABILITY CLASS: Slightly unstable

ELEVATION: 10 Meters

## WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	3	0	0	0	0	3
NNE	1	3	1	0	0	0	5
NE	0	0	1	0	0	0	1
ENE	1	3	4	2	0	0	10
E	0	7	5	2	0	0	14
ESE	0	5	3	0	0	0	8
SE	0	1	16	2	0	0	19
SSE	0	0	12	4	0	0	16
S	0	4	10	17	0	0	31
SSW	0	3	3	4	0	0	10
SW	0	0	2	0	0	0	2
WSW	0	5	3	0	0	0	8
W	1	1	3	0	2	0	7
WNW	0	1	4	1	0	0	6
NW	0	2	5	1	0	0	8
NNW	0	4	1	0	0	0	5
VARIABLE	-	-	-	-	-	-	0
TOTAL	3	42	73	33	2	0	153 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 109

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: April 1, 1979 through June 30, 1979

STABILITY CLASS: Neutral

ELEVATION: 10 Meters

## WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	6	13	6	0	0	0	25
NNE	6	8	10	0	0	0	24
NE	4	24	19	1	0	0	48
ENE	2	12	18	15	0	0	47
E	3	10	6	18	0	0	37
ESE	1	18	5	0	0	0	24
SE	1	22	10	2	1	0	36
SSE	7	30	44	14	1	0	96
S	1	26	43	26	4	0	100
SSW	5	19	26	14	0	0	64
SW	1	7	6	2	1	0	17
WSW	4	4	2	0	0	0	10
W	3	5	4	3	1	0	16
WNW	4	21	17	10	0	0	52
NW	4	9	9	2	0	0	24
NNW	4	12	8	0	0	0	24
VARIABLE	-	-	-	-	-	-	0
TOTAL	56	240	233	107	8	0	644 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 109

TABLE II-4A

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: April 1, 1979 through June 30, 1979

STABILITY CLASS: Slightly stable

ELEVATION: 10 Meters

WIND SPEED (MPH)

WIND DIRECTION	Calm-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	8	12	0	0	0	0	20
NNE	5	13	1	1	0	0	20
NE	6	25	23	1	0	0	55
ENE	6	14	7	4	0	0	31
E	6	10	2	1	0	0	19
ESE	2	6	0	0	1	0	9
SE	0	11	0	0	1	0	12
SSE	11	27	7	1	0	0	46
S	9	42	6	1	0	0	58
SSW	16	32	16	1	0	0	65
SW	7	30	9	0	0	0	46
WSW	16	21	2	0	0	0	39
W	9	14	2	0	0	0	25
WNW	19	27	2	0	0	0	48
NW	19	29	2	0	0	0	50
NNW	9	12	4	0	0	0	25
VARIABLE	-	-	-	-	-	-	0
TOTAL	148	325	83	10	2	0	568 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 109

TABLE II-4A

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: April 1, 1979 through June 30, 1979

STABILITY CLASS: Moderately stable

ELEVATION: 10 Meters

WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	1	2	0	0	0	0	3
NNE	0	0	0	0	0	0	0
NE	1	0	0	0	0	0	1
ENE	0	0	0	0	0	0	0
E	1	0	0	0	0	0	1
ESE	0	0	0	0	0	0	0
SE	3	2	0	0	0	0	5
SSE	3	2	0	0	0	0	5
S	10	8	0	0	0	0	18
SSW	4	13	0	0	0	0	17
SW	9	17	4	0	0	0	30
WSW	4	23	0	0	0	0	27
W	9	17	0	0	0	0	26
WNW	6	21	0	0	0	0	27
NW	6	20	0	0	0	0	26
NNW	3	6	0	0	0	0	9
VARIABLE	-	-	-	-	-	-	-
TOTAL	60	131	4	0	0	0	195 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 109

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: April 1, 1979 through June 30, 1979

STABILITY CLASS: Extremely stable

ELEVATION: 10 Meters

## WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	0	1	0	0	0	0	1
NE	0	1	0	0	0	0	1
ENE	0	0	0	0	0	0	0
E	0	1	0	0	0	0	1
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	1	0	0	0	0	1
SSW	0	3	2	0	0	0	5
SW	0	3	13	0	0	0	16
WSW	0	11	27	0	0	0	38
W	0	8	9	0	0	0	17
WNW	0	9	2	0	0	0	11
NW	0	6	4	0	0	0	10
NNW	0	5	0	0	0	0	5
VARIABLE	-	-	-	-	-	-	0
TOTAL	0	49	57	0	0	0	106 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 109

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: July 1, 1979 through September 30, 1979

STABILITY CLASS: Extremely unstable

ELEVATION: 10 Meters

## WIND SPEED (MPH)

WIND DIRECTION	Calm+ - 3	4-7	8-12	13-18	19-24	>24	TOTAL
N	3	17	7	2	1	0	30
NNE	6	23	16	0	0	5	50
NE	4	18	18	3	2	1	46
ENE	3	23	24	5	0	0	55
E	3	48	23	0	0	0	74
ESE	4	37	45	0	0	0	86
SE	1	44	63	2	3	1	114
SSE	2	27	52	18	3	1	103
S	9	36	75	23	7	0	150
SSW	1	22	31	5	0	0	59
SW	5	24	13	5	0	0	47
WSW	1	25	16	1	0	0	43
W	2	21	15	1	0	0	39
WNW	2	14	21	6	0	0	43
NW	1	20	34	5	0	0	60
NNW	5	24	6	0	0	0	35
VARIABLE	-	-	-	-	-	-	20
TOTAL	52	423	459	76	16	8	1034 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 120

TABLE II-4A

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: July 1, 1979 through September 30, 1979

STABILITY CLASS: Moderately unstable

ELEVATION: 10 Meters

WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	3	1	0	0	0	4
NNE	0	2	2	0	0	0	4
NE	0	5	2	0	0	0	7
ENE	0	0	0	0	0	0	0
E	0	1	0	0	0	0	1
ESE	1	2	0	0	0	0	3
SE	1	4	0	1	0	0	6
SSE	0	0	2	0	0	0	2
S	0	6	2	0	2	0	10
SSW	0	5	4	0	0	0	9
SW	1	1	0	0	0	0	2
WSW	1	6	0	0	0	0	7
W	1	2	0	0	0	0	3
WNW	1	0	1	0	0	0	2
NW	0	2	0	0	0	0	2
NNW	0	2	0	0	0	0	2
VARIABLE	-	-	-	-	-	-	0
TOTAL	6	41	14	1	2	0	64 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 120

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: July 1, 1979 through September 30, 1979

STABILITY CLASS: Slightly unstable

ELEVATION: 10 Meters

## WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	0	2	3	0	0	0	5
NE	1	0	1	0	0	0	2
ENE	0	1	0	1	0	0	2
E	0	1	0	0	0	0	1
ESE	0	3	0	0	0	0	3
SE	0	3	0	0	0	0	3
SSE	0	4	1	1	0	0	6
S	0	2	0	0	0	1	3
SSW	1	5	3	0	0	0	9
SW	1	2	0	0	0	0	3
WSW	1	1	0	0	0	0	2
W	1	2	1	0	0	0	4
WNW	0	4	0	0	0	0	4
NW	1	0	0	0	0	0	1
NNW	1	0	0	0	0	0	1
VARIABLE	-	-	-	-	-	-	1
TOTAL	7	30	9	2	0	1	49 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 120

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: July 1, 1979 through September 30, 1979

STABILITY CLASS: Neutral

ELEVATION: 10 Meters

## WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	1	1	0	1	1	0	4
NNE	5	1	1	3	6	0	16
NE	7	17	8	1	1	0	34
ENE	3	7	1	0	0	0	11
E	0	1	0	0	0	0	1
ESE	1	2	1	0	0	0	4
SE	6	6	0	0	0	0	12
SSE	2	8	6	3	0	0	19
S	9	20	5	0	0	0	34
SSW	5	18	2	0	0	0	25
SW	5	26	1	0	0	0	32
WSW	4	9	0	0	0	0	13
W	6	17	0	0	0	0	23
WNW	4	7	4	0	0	0	15
NW	4	6	3	0	0	0	13
NNW	4	4	0	0	0	0	8
VARIABLE	-	-	-	-	-	-	12
TOTAL	66	150	32	8	8	0	264 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 120

TABLE II-4A

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: July 1, 1979 through September 30, 1979

STABILITY CLASS: Slightly stable

ELEVATION: 10 Meters

WIND SPEED (MPH)

WIND DIRECTION	Calmt+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	3	0	0	0	0	0	3
NNE	3	1	0	1	3	0	8
NE	1	1	1	2	10	0	15
ENE	0	1	0	0	0	0	1
E	2	0	0	0	0	0	2
ESE	2	1	0	0	0	0	3
SE	4	1	0	0	0	0	5
SSE	4	4	0	0	0	0	8
S	10	18	0	0	0	0	28
SSW	8	9	0	0	0	0	17
SW	10	24	0	0	0	0	34
WSW	10	22	0	0	0	0	32
W	7	7	0	0	0	0	14
WNW	5	24	1	0	0	0	30
NW	6	6	0	0	0	0	12
NNW	7	5	0	0	0	0	12
VARIABLE	-	-	-	-	-	-	12
TOTAL	82	124	2	3	13	0	224 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 120

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: July 1, 1979 through September 30, 1979

STABILITY CLASS: Moderately stable

ELEVATION: 10 Meters

## WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	1	0	0	0	0	0	1
NNE	1	0	0	0	0	0	1
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	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	5	0	0	0	0	0	5
S	6	1	0	0	0	0	7
SSW	7	6	0	0	0	0	13
SW	4	10	0	0	0	0	14
WSW	13	11	0	0	0	0	24
W	8	8	1	0	0	0	17
WNW	2	7	0	0	0	0	9
NW	4	14	0	0	0	0	18
NNW	6	4	0	0	0	0	10
VARIABLE	-	-	-	-	-	-	6
TOTAL	58	62	1	0	0	0	121 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 120

TABLE II-4A

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: July 1, 1979 through September 30, 1979

STABILITY CLASS: Extremely stable

ELEVATION: 10 Meters

WIND SPEED (MPH)

WIND DIRECTION	Calm	1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	1		2	0	0	0	0	3
NNE	2		0	0	0	0	0	2
NE	1		0	0	0	0	0	1
ENE	0		0	0	0	0	0	0
E	2		0	0	0	0	0	2
ESE	0		0	0	0	0	0	0
SE	0		0	0	0	0	0	0
SSE	1		0	0	0	0	0	1
S	7		0	0	0	0	0	7
SSW	6		3	0	0	0	0	9
SW	17		19	0	0	0	0	36
WSW	35		47	0	0	0	0	82
W	32		13	0	0	0	0	45
WNW	27		11	0	0	0	0	38
NW	17		16	0	0	0	0	33
NNW	9		6	0	0	0	0	15
VARIABLE	-		-	-	-	-	-	7
TOTAL	157		117	0	0	0	0	274 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 120

TABLE II-4A

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: October 1, 1979 through December 31, 1979

STABILITY CLASS: Extremely unstable

ELEVATION: 10 Meters

WIND SPEED (MPH)

WIND DIRECTION	Calm+ - 3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	3	4	0	0	0	7
NNE	0	5	5	0	0	0	10
NE	0	2	9	0	0	0	11
ENE	0	6	10	0	0	0	16
E	0	4	3	0	0	0	7
ESE	0	17	10	0	0	0	27
SE	1	5	15	3	1	0	25
SSE	1	3	9	5	0	0	18
S	2	7	16	17	0	0	42
SSW	2	8	5	4	0	0	19
SW	1	12	20	6	1	0	40
WSW	0	10	22	8	0	0	40
W	0	4	19	11	1	0	35
WNW	0	9	30	10	3	0	52
NW	0	6	21	8	3	0	38
NNW	0	5	6	0	0	0	11
VARIABLE	-	-	-	-	-	-	3
TOTAL	7	106	204	72	9	0	398 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 213

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: October 1, 1979 through December 31, 1979

STABILITY CLASS: Moderately unstable

ELEVATION: 10 Meters

## WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	1	3	0	0	0	4
NNE	0	3	5	1	0	0	9
NE	0	0	2	0	0	0	2
ENE	0	0	0	0	0	0	0
E	1	0	0	0	0	0	1
ESE	1	1	2	0	0	0	4
SE	0	2	0	2	0	0	4
SSE	0	2	0	0	0	0	2
S	1	0	2	1	0	0	4
SSW	1	0	1	0	0	0	2
SW	0	2	0	0	0	0	2
WSW	0	4	2	0	0	0	6
W	0	0	5	1	0	0	6
WNW	1	1	5	2	0	0	9
NW	1	2	3	1	0	0	7
NNW	0	2	3	0	0	0	5
VARIABLE	-	-	-	-	-	-	3
TOTAL	6	20	33	8	0	0	67 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 213

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: October 1, 1979 through December 31, 1979

STABILITY CLASS: Slightly unstable

ELEVATION: 10 Meters

## WIND SPEED (MPH)

WIND DIRECTION	Calmt+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	1	2	0	0	0	3
NNE	0	1	3	0	0	0	4
NE	0	2	1	0	0	0	3
ENE	0	0	0	0	0	0	0
E	0	2	0	0	0	0	2
ESE	0	0	0	0	0	0	0
SE	0	7	1	1	0	0	9
SSE	2	1	1	2	0	0	6
S	0	1	3	1	0	0	5
SSW	0	2	0	1	0	0	3
SW	0	1	3	0	0	0	4
WSW	1	2	1	1	0	0	5
W	0	2	2	0	0	0	4
WNW	0	0	0	0	0	0	0
NW	1	1	4	2	0	0	8
NNW	0	6	4	0	0	0	10
VARIABLE	-	-	-	-	-	-	0
TOTAL	4	29	25	8	0	0	66 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 213

TABLE II-4A

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: October 1, 1979 through December 31, 1979

STABILITY CLASS: Neutral

ELEVATION: 10 Meters

WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	1	15	7	0	0	0	23
NNE	1	15	32	1	0	0	49
NE	0	5	15	0	0	0	20
ENE	1	6	0	0	0	0	7
E	1	7	0	0	0	0	8
ESE	2	9	5	0	0	0	16
SE	2	11	6	8	0	0	27
SSE	3	7	15	10	4	0	39
S	1	13	36	16	0	0	66
SSW	2	11	24	6	0	0	43
SW	6	15	12	1	0	0	34
WSW	4	10	6	0	0	0	20
W	0	12	8	2	0	0	22
WNW	3	6	22	10	0	0	41
NW	4	18	14	2	1	0	39
NNW	2	11	4	0	0	0	17
VARIABLE	-	-	-	-	-	-	5
TOTAL	33	171	206	56	5	0	471 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 213

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: October 1, 1979 through December 31, 1979

STABILITY CLASS: Slightly stable

ELEVATION: 10 Meters

## WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	4	1	0	0	0	0	5
NNE	2	1	0	0	0	0	3
NE	2	1	0	0	0	0	3
ENE	2	1	0	0	0	0	3
E	0	3	0	0	0	0	3
ESE	2	1	0	0	0	0	3
SE	3	15	0	0	0	0	18
SSE	3	3	6	0	0	0	12
S	6	19	23	2	0	0	50
SSW	7	57	27	2	0	0	93
SW	5	47	29	1	0	0	82
WSW	8	42	26	1	0	0	77
W	9	19	4	0	0	0	32
WNW	1	24	8	0	0	0	33
NW	6	6	1	0	0	0	13
NNW	2	7	0	0	0	0	9
VARIABLE	-	-	-	-	-	-	9
TOTAL	62	247	124	6	0	0	439 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 213

TABLE II-4A

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: October 1, 1979 through December 31, 1979

STABILITY CLASS: Moderately stable

ELEVATION: 10 Meters

WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	1	0	0	0	0	0	1
NE	1	0	0	0	0	0	1
ENE	1	0	0	0	0	0	1
E	0	0	0	0	0	0	0
ESE	4	0	0	0	0	0	4
SE	0	1	0	0	0	0	1
SSE	8	6	0	0	0	0	14
S	4	5	1	0	0	0	10
SSW	10	9	0	0	0	0	19
SW	4	36	0	0	0	0	40
WSW	4	25	3	1	0	0	33
W	6	18	0	0	0	0	24
WNW	3	16	0	0	0	0	19
NW	6	3	0	0	0	0	9
NNW	2	1	0	0	0	0	3
VARIABLE	-	-	-	-	-	-	1
TOTAL	54	120	4	1	0	0	179 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 213

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: October 1, 1979 through December 31, 1979

STABILITY CLASS: Extremely stable

ELEVATION: 10 Meters

## WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	-13-18	- 19-24	>24-	TOTAL
N	3	1	0	0	0	0	4
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	0	0	0	0	0	0	0
ESE	3	0	0	0	0	0	3
SE	1	0	0	0	0	0	1
SSE	8	3	0	0	0	0	11
S	8	7	1	2	0	0	18
SSW	10	3	1	1	0	0	15
SW	17	24	0	0	0	0	41
WSW	37	43	0	0	0	0	80
W	40	20	0	0	0	0	60
WNW	27	18	0	0	0	0	45
NW	17	22	0	0	0	0	39
NNW	8	4	0	0	0	0	12
VARIABLE	-	-	-	-	-	-	22
TOTAL	182	145	2	3	0	0	332 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 213

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: July 1, 1979 through September 30, 1979

STABILITY CLASS: Extremely unstable

ELEVATION: 116 Meters

## WIND SPEED (MPH)

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

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 150

TABLE II-4A

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: July 1, 1979 through September 30, 1979

STABILITY CLASS: Moderately unstable

ELEVATION: 116 Meters

WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	0	0	0	0	1	0	1
NE	0	0	0	0	1	1	2
ENE	0	0	1	1	0	1	3
E	0	0	2	1	0	0	3
ESE	0	0	1	0	0	0	1
SE	0	1	0	0	0	0	1
SSE	0	0	1	2	0	0	3
S	0	0	0	2	1	0	3
SSW	0	0	0	0	0	0	0
SW	0	0	0	1	0	0	1
WSW	0	0	0	0	1	0	1
W	0	0	0	1	0	0	1
WNW	0	0	0	1	2	0	3
NW	0	0	0	5	2	0	7
NNW	0	0	2	0	1	0	3
VARIABLE	-	-	-	-	-	-	0
TOTAL	0	1	7	14	9	2	33 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 150

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: July 1, 1979 through September 30, 1979

STABILITY CLASS: Slightly unstable

ELEVATION: 116 Meters

## WIND SPEED (MPH)

WIND DIRECTION	Calmt -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	3	0	0	3
NNE	0	0	0	0	2	0	2
NE	0	0	4	4	2	1	11
ENE	0	0	7	1	1	0	9
E	0	1	8	0	0	0	9
ESE	0	2	6	2	0	0	10
SE	0	1	9	4	0	0	14
SSE	0	1	4	8	0	0	13
S	0	0	2	9	0	0	11
SSW	0	0	1	6	0	0	7
SW	0	0	1	4	0	0	5
WSW	0	0	0	0	1	0	1
W	0	2	5	2	0	0	9
WNW	0	0	2	4	0	0	6
NW	0	0	4	6	4	1	15
NNW	0	0	1	2	2	0	5
VARIABLE	-	-	-	-	-	-	0
TOTAL	0	7	54	55	12	2	130 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 150

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: July 1, 1979 through September 30, 1979

STABILITY CLASS: Neutral

ELEVATION: 116 Meters

## WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	2	9	8	8	0	0	27
NNE	2	5	19	10	2	0	38
NE	1	6	19	29	12	1	68
ENE	1	10	16	3	2	0	32
E	1	13	32	3	0	0	49
ESE	1	7	28	7	0	1	44
SE	0	13	40	6	0	2	61
SSE	0	12	41	16	3	2	74
S	3	8	25	25	10	6	77
SSW	1	4	13	37	12	3	70
SW	0	13	4	12	5	1	35
WSW	1	10	13	5	8	5	42
W	1	10	6	7	3	0	27
WNW	1	1	9	15	2	0	28
NW	1	7	16	17	12	1	54
NNW	0	5	7	6	2	1	21
VARIABLE	-	-	-	-	-	-	0
TOTAL	16	133	296	206	73	23	747 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 150

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: July 1, 1979 through September 30, 1979

STABILITY CLASS: Slightly stable

ELEVATION: 116 Meters

## WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	- 4-7	8-12	13-18	19-24	>24	TOTAL
N	1	5	5	3	1	0	15
NNE	1	3	10	4	4	0	22
NE	1	9	10	6	13	3	42
ENE	1	6	14	4	0	0	25
E	1	4	7	5	0	0	17
ESE	0	9	10	2	0	0	21
SE	2	7	11	7	6	2	35
SSE	2	1	16	8	12	6	45
S	1	9	20	24	11	6	71
SSW	1	2	19	61	13	5	101
SW	0	4	15	29	15	4	67
WSW	0	3	12	16	14	2	47
W	0	5	4	12	9	0	30
WNW	0	3	13	9	10	0	35
NW	0	1	10	6	21	1	39
NNW	2	9	1	3	4	0	19
VARIABLE	-	-	-	-	-	-	4
TOTAL	13	80	177	199	133	29	631 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 150

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: July 1, 1979 through September 30, 1979

STABILITY CLASS: Moderately stable

ELEVATION: 116 Meters

## WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	2	12	6	0	20
NNE	0	0	7	1	1	0	9
NE	1	1	2	2	0	0	6
ENE	2	1	4	0	1	0	8
E	0	2	3	0	0	0	5
ESE	0	1	5	0	0	0	6
SE	1	8	11	2	0	0	22
SSE	1	6	2	0	0	0	9
S	1	3	9	2	1	0	16
SSW	2	3	12	20	3	0	40
SW	1	3	7	6	10	5	32
WSW	0	4	5	6	10	4	29
W	0	0	8	9	15	1	33
WNW	1	0	6	9	6	0	22
NW	0	1	2	2	13	6	24
NNW	0	3	5	5	7	0	20
VARIABLE	-	-	-	-	-	-	0
TOTAL	10	36	90	76	73	16	301 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 150

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: July 1, 1979 through September 30, 1979

STABILITY CLASS: Extremely stable

ELEVATION: 116 Meters

## WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	2	1	4	11	10	3	31
NNE	0	1	6	8	0	0	15
NE	0	2	4	7	0	0	13
ENE	0	0	2	0	0	0	2
E	0	0	1	0	0	0	1
ESE	1	2	6	0	0	0	9
SE	0	1	3	1	0	0	5
SSE	1	3	2	0	0	0	6
S	0	1	2	0	0	0	3
SSW	0	9	4	5	0	0	18
SW	1	0	6	2	2	1	12
WSW	0	1	3	6	3	0	13
W	0	3	6	7	4	1	21
WNW	2	0	9	9	2	0	22
NW	0	0	2	1	5	0	8
NNW	0	2	2	6	4	0	14
VARIABLE	-	-	-	-	-	-	4
TOTAL	7	26	62	63	30	5	193 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 150

TABLE II-4A

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: October 1, 1979 through December 31, 1979

STABILITY CLASS: Extremely unstable

ELEVATION: 116 Meters

WIND SPEED (MPH)

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

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 216

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: October 1, 1979 through December 31, 1979

STABILITY CLASS: Moderately unstable

ELEVATION: 116 Meters

## WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	0	0	0	0	0	0	0
NE	0	0	1	0	0	0	1
ENE	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0
ESE	0	0	0	0	0	0	0
SE	0	0	0	0	0	0	0
SSE	0	0	0	0	0	0	0
S	0	0	0	0	0	0	0
SSW	0	0	0	1	0	0	1
SW	0	0	0	0	0	0	0
WSW	0	0	0	1	0	0	1
W	0	0	0	1	0	1	2
WNW	0	0	0	2	0	1	3
NW	0	0	0	2	1	0	3
NNW	0	0	0	0	0	0	0
VARIABLE	-	-	-	-	-	-	0
TOTAL	0	0	1	7	1	2	11 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 216

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: October 1, 1979 through December 31, 1979

STABILITY CLASS: Slightly unstable

ELEVATION: 116 Meters

## WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	0	0	0	0	0
NNE	0	0	1	0	0	0	1
NE	0	1	6	1	0	0	8
ENE	0	0	2	2	0	0	4
E	0	0	0	0	0	0	0
ESE	0	3	2	0	0	0	5
SE	0	0	1	2	0	0	3
SSE	0	0	0	1	0	0	1
S	0	0	1	7	2	0	10
SSW	0	1	0	0	0	0	1
SW	0	1	0	1	0	0	2
WSW	0	0	0	7	2	0	9
W	0	0	1	5	5	3	14
WNW	0	0	2	4	6	1	13
NW	0	0	1	4	1	2	8
NNW	0	0	0	2	0	0	2
VARIABLE	-	-	-	-	-	-	0
TOTAL	0	6	17	36	16	6	81 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 216

TABLE II-4A

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: October 1, 1979 through December 31, 1979

STABILITY CLASS: Neutral

ELEVATION: 116 Meters

WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	5	20	1	0	26
NNE	0	3	15	21	4	0	43
NE	0	1	2	16	15	6	40
ENE	0	3	10	3	1	0	17
E	1	3	7	2	0	0	13
ESE	3	6	11	2	2	0	24
SE	0	6	21	9	1	3	40
SSE	0	2	10	7	6	6	31
S	0	0	10	17	18	4	49
SSW	1	6	9	12	10	7	45
SW	1	6	12	18	6	6	49
WSW	0	3	7	18	5	8	41
W	0	2	14	7	14	4	41
WNW	0	4	8	19	22	21	74
NW	0	0	12	20	21	20	73
NNW	2	0	2	21	8	0	33
VARIABLE	-	-	-	-	-	-	3
TOTAL	8	45	155	212	134	85	639 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 216

TABLE II-4A

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: October 1, 1979 through December 31, 1979

STABILITY CLASS: Slightly stable

ELEVATION: 116 Meters

WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	2	2	9	3	0	16
NNE	1	0	3	12	0	0	16
NE	0	0	0	7	6	0	13
ENE	1	0	2	4	3	0	10
E	0	1	3	2	0	0	6
ESE	0	2	3	0	0	1	6
SE	1	3	8	13	7	7	39
SSE	1	4	9	11	9	20	54
S	0	6	6	18	35	15	80
SSW	0	4	13	17	43	18	95
SW	0	6	5	12	26	9	58
WSW	0	2	6	23	29	24	84
W	0	5	2	10	18	8	43
WNW	0	3	4	11	30	19	67
NW	1	1	3	19	26	6	56
NNW	0	0	1	6	1	0	8
VARIABLE	-	-	-	-	-	-	0
TOTAL	5	39	70	174	236	127	651 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 216

TABLE II-4A

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: October 1, 1979 through December 31, 1979

STABILITY CLASS: Moderately stable

ELEVATION: 116 Meters

## WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	1	1	0	0	2
NNE	1	0	4	4	0	0	9
NE	0	0	5	0	0	0	5
ENE	0	1	4	2	0	0	7
E	0	1	4	1	0	0	6
ESE	0	0	0	0	0	0	0
SE	0	0	0	1	0	0	1
SSE	0	3	3	6	0	0	12
S	0	2	7	5	5	1	20
SSW	1	1	10	12	15	16	55
SW	0	5	9	4	14	34	66
WSW	1	3	6	12	9	7	38
W	3	0	2	10	26	5	46
WNW	0	0	2	13	19	2	36
NW	0	2	3	14	16	4	39
NNW	0	0	4	9	5	0	18
VARIABLE	-	-	-	-	-	-	2
TOTAL	6	18	64	94	109	69	360 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 216

TABLE II-4A

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD: October 1, 1979 through December 31, 1979

STABILITY CLASS: Extremely stable

ELEVATION: 116 Meters

WIND SPEED (MPH)

WIND DIRECTION	Calm+ -3	4-7	8-12	-13-18	- 19-24	>24.	TOTAL
N	0	2	3	7	4	0	16
NNE	0	0	5	7	4	0	16
NE	0	0	0	0	0	0	0
ENE	1	1	1	2	0	0	5
E	0	2	0	2	0	0	4
ESE	0	3	1	3	0	0	7
SE	0	7	4	6	0	0	17
SSE	0	7	5	0	1	0	13
S	0	5	7	7	5	1	25
SSW	0	8	6	7	3	1	25
SW	1	8	4	6	1	2	22
WSW	0	3	5	3	2	6	19
W	0	3	2	2	13	6	26
WNW	0	1	2	6	7	0	16
NW	0	2	1	3	2	0	8
NNW	0	2	2	10	5	2	21
VARIABLE	-	-	-	-	-	-	0
TOTAL	2	54	48	71	47	18	240 *

\*Total does not include variable period

PERIOD OF CALM (HOURS): 0

HOURS OF MISSING DATA: 216

TABLE II - 5  
 Gaseous Effluent 1979  
 Summation of All Releases From New Rad Waste

	Unit	Quarters			
		First	Second	Third	Fourth
<b>A. Fission &amp; Activation Gases</b>					
1. Total Release	Ci	6.75E-4	7.05E-4	7.13E-4	7.13E-4
2. Average Release Rate for Period	uCi/day	7.75E-6	7.75E-6	7.75E-6	7.75E-6
<b>B. Iodines</b>					
1. Total Iodine-131	Ci	1.06E-3	1.07E-3	1.09E-3	8.97E-4
2. Average Release Rate for Period	uCi/day	1.18E 1	1.18E 1	1.18E 1	9.75E 0
<b>C. Particulates</b>					
1. Particulates with half-lives >8 days	Ci	4.05E-5	4.1 E-5	4.14E-5	3.66E-5
2. Average Release Rate for Period	uCi/day	4.5 E-1	4.5 E-1	4.5 E-1	4.0 E-1

III. ENVIRONMENTAL SUMMARY

### III. ENVIRONMENTAL MONITORING

The environmental monitoring program was conducted during the reporting period in accordance with Technical Specification 4.6.B.3. The program included five general types of monitoring. These were (1) atmospheric radiation, (2) fallout, (3) domestic water, (4) surface water, and (5) marine life. This monitoring was accomplished by analyzing film badges for exposure and air particulate filters, rain water, vegetation, soil, crops, well water, surface water, silt, and clams for radioactivity. The analyses results from these samples are found on the forthcoming tables. The time period covered by this monitoring extended from June 1979 through November 1979 instead of July 1979 through December 1979, due to normal delay in sample analysis and reporting by the vendor. The sampling locations are listed in Table III-A and are depicted in Figure III-1.

1. Atmospheric Radiation monitoring results, consisting of radiogas (film badges) and air particulate radioactivity measurements, are listed in Tables III-B, III-C, III-D, III-E, III-H, and Table III-J. These tables cover the collection period from June 1979 through November 1979, with the exception of Table III-B which includes collection dates from June 1979 through August 1979 and Table III-C, which covers collection dates from September 1979 through November 1979.

Included in Table III-D, in addition to the indicator monitoring stations 2 through 17, are stations 1 and T1, which are located on site at the meteorological tower, and three background stations which are located at Allenhurst (A), Cookstown (C), and Hammonton (H), New Jersey.

During the reporting period, several special programs were conducted and are listed below.

- A. TLD evaluation - This program has continued intact since the last period on a monthly basis. All exposures for this reporting period are seen in Table III-F.
- B. Isotopic analyses were performed on all air particulate filters. The results can be found in Table III-H.
- C. Iodine 131 analyses were run on all the charcoal filters. The results are shown in Table III-G.

2. Fallout monitoring, consisting of rainwater radioactivity measurements, is listed in Tables III-B, III-C and Table III-E. Background rainwater from stations A, C and H results are in Table III-J.
3. Domestic Water monitoring, consisting of well water sample analyses, is listed in Tables III-B, III-C, and III-E.
4. Surface Water monitoring, consisting of water and silt analyses from Barnegat Bay, Forked River, and Oyster Creek, is listed in Tables III-B, III-C, and III-E. The background station for surface water and silt is station number 31 and these results can be seen in Table III-J.

Isotopic analyses were performed on the silt samples from the bay and discharge canal. The results can be seen in Table III-K.

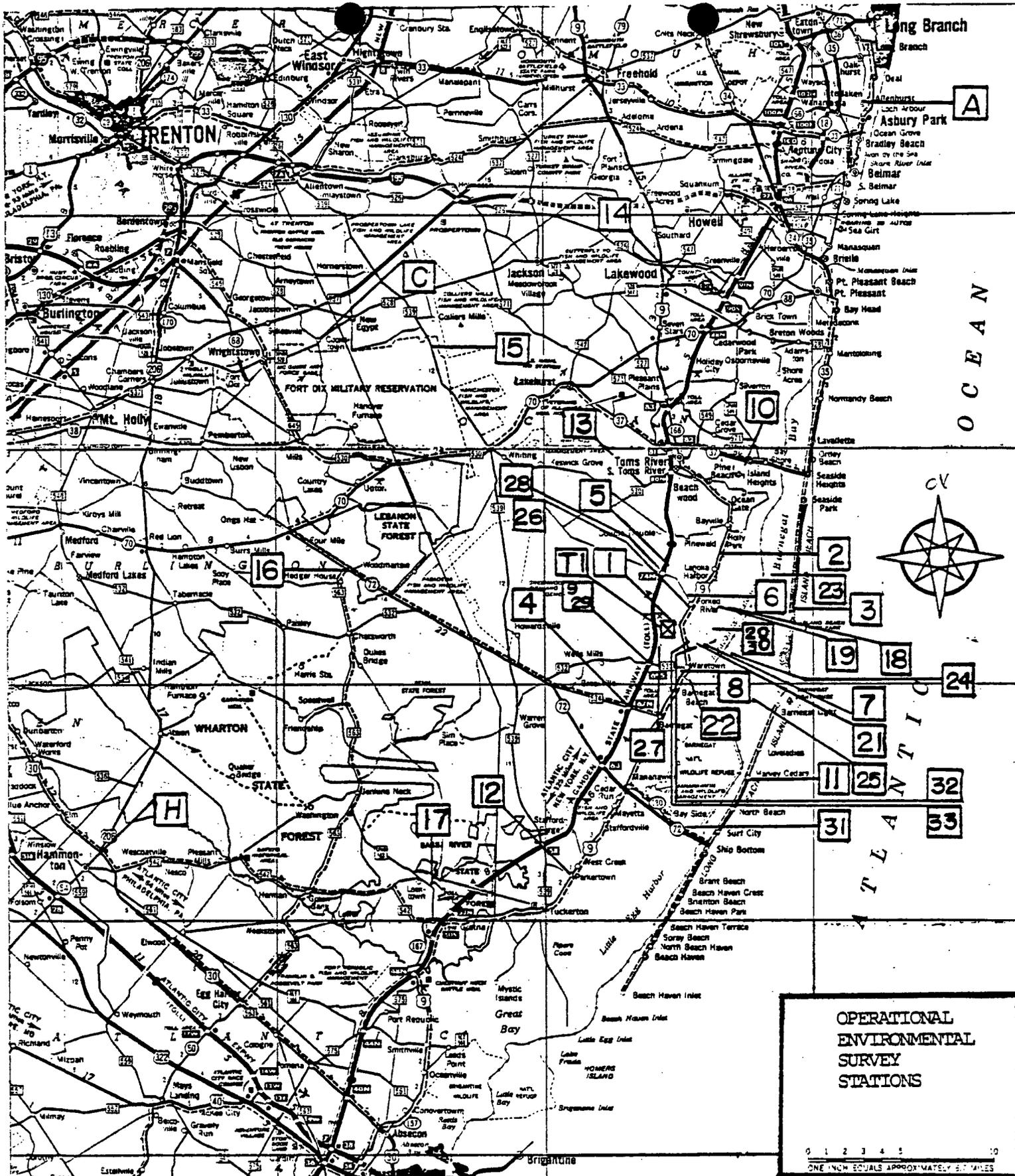
5. Marine Life monitoring consisting of clam samples, is listed in Table III-B, III-C & III-E. The background station results are listed in Table III-J.
6. In addition to these analyses, vegetation, soil, and crop samples were analyzed. The results are shown in Tables III-B, III-C, and III-E.
7. Isotopic analyses were performed on vegetable samples. The results are listed in Table III-L.

TABLE III-A  
OYSTER CREEK STATION  
ENVIRONMENTAL MONITORING STATIONS  
LOCATION AND TYPE SAMPLE COLLECTED

<u>STATION NUMBER</u>		<u>SAMPLE COLLECTED</u>
1	Forked River, N.J. - Oyster Creek Meteorological Tower	AP, RG, RW, WW, V, E
T1	Forked River, N.J. - Oyster Creek Meteorological Tower	RG
2	Pinewald, N.J. - Route #9 at JCP&L Company Pinewald Substation north of Forked River, N.J.	AP, RG, RW, V, E
3	Island Beach State Park, N.J. - Near old Coast Guard Station	AP, RG, RW, V, E
4	Barnegat, N.J. - Route #534, Windward at Barnegat, first road West of Parkway Exit	AP, RG, RW, V, E
5	Forked River, N.J. - Garden State Parkway North-bound Entrance to Holiday House	AP, RG, RW, V, E
6	Forked River, N.J. - Lane Place, behind St. Pius X Catholic Church	RG
7	Waretown, N.J. - Compass Road, second pole North of Bay Parkway	RG
8	Waretown, N.J. - Route #9 at the Waretown Substation	RG
9	Waretown, N.J. - Route #532, North side of road at Parkway	RG
10	Toms River, N.J. - Route 37 East, adjacent to "Eastern Off Road Supplies"	RG
11	Harvey Cedars, N.J. - Long Beach Blvd. and East 70th street, Long Beach Island	RG
12	Parkertown, N.J. - Route #9, East of Assembly of God Church	RG
13	South Toms River, N.J. - Dover Road, next to last pole traveling West on North side.	RG
14	Lakewood, N.J. - Larrabee Substation, just off Route #547 on Randolph Road	RG
15	New Egypt, N.J. - Route #539, last pole on South side, adjacent to "Bomark" Site	RG

TABLE III-A (Con't)  
 OYSTER CREEK STATION  
 ENVIRONMENTAL MONITORING STATIONS  
LOCATION AND TYPE SAMPLE COLLECTED

<u>STATION NUMBER</u>		<u>SAMPLE COLLECTED</u>
31	Manahawkin Bay - Approximately 25 yards SE (140°) of C "23" and N "24"	SW, AQS, AQL
32	Oyster Creek - Mouth of Creek midway between Bulkhead on North Shore and South Shore of Creek	SW, AQS
33	Oyster Creek - Approximately 1200 yards East of Route #9 Bridge, in middle of channel, directly South of Bulkhead running perpendicular to North Shore	SW, AQS
A	Allenhurst, N.J. - JCP&L Company District Headquarters, on Roof	RG, AP, RW
C	Cookstown, N.J. - Route #528 Spur, at JCP&L Company's District Dispatcher	RG, AP, RW
H	Hammonton, N.J. - Egg Harbor Road, at the Atlantic City Electric District Dispatcher	RG, AP, RW



OYSTER CREEK NUCLEAR GENERATING STATION  
Figure III-1

## Analysis of Data

A statistical analysis of the data generated by laboratory analyses of samples collected as part of the Oyster Creek Radiological Environmental Monitoring Program did reveal the presence of some environmental media having higher than normally observed levels of radioactivity in one form or another during the reporting period. A study was made to determine if a correlation exists between facility releases and elevated environmental levels of radioactivity. A discussion of the findings follows:

June 1979:

Rain Water, Stations 3, A, C, and H, Gross Beta (insoluble)  
Well Water, Stations 18, 19, 20, and 21, Gross Alpha (insoluble)  
Surface Water, Stations 23 and 25, Gross Alpha (insoluble)

Rain water gross beta insoluble analysis results indicated slightly higher than normal levels at Stations 3, A, C, and H. Station 3 is an indicator and Stations A, C, and H are background stations. The levels observed at Stations C and H were higher than that found at Station 3. No unusual plant operations or releases occurred during this collection period. It is unlikely that the concentrations measured at Station 3 and the background stations were a result of plant activity.

Well water Stations 18, 19, 20, and 21 had a slightly higher gross alpha insoluble concentration. Surface water Stations 23 and 25 also showed a slightly elevated gross alpha insoluble concentration. One liquid release occurred during this month. Effects of the liquid release on the surface water samples can be ruled out since the surface water samples were collected prior to the release. An alpha analysis of water released indicated that no detectable alpha activity was present. It is unlikely that the slightly elevated alpha levels were a result of plant operations.

July 1979:

Rain Water, Stations A and C, Gross Beta (insoluble)  
Well Water, Stations 19, 20, and 22, Gross Alpha (insoluble)  
Well Water, Station 20, K-40  
Surface Water, Stations 23, 24, 25, 26, 27, 31, 32, and 33,  
Gross Alpha (insoluble)  
Surface Water, Stations 26 and 27, Gross Beta (insoluble)  
Surface Water, Station 26, Gross Beta (soluble)  
Silt and Sediment, Station 32, Co-60

During July 1979, two rainwater stations (A and C) exhibited higher than normally found radioactivity levels. Both of these stations are background stations. Well water analysis results showed higher than normal gross alpha insoluble levels at Stations 19, 20, and 22, and for K-40 at Station 20. During this period, one liquid release was made from the facility. An alpha analysis on the water made prior to the release indicated no alpha activity

present. The K-40 concentration detected at the site 20 was determined to be a result of salt water intrusion. It is unlikely that any of the observed elevated levels were a result of plant operations.

Surface water analyses from samples collected in July indicated higher radioactivity levels at all eight stations for gross alpha insoluble. In addition, slightly elevated concentrations were seen at Station 26 on gross beta insoluble and gross beta soluble and Station 27 on gross beta insoluble. No alpha was seen in the only liquid release of the collection period. In comparing station results for gross alpha insoluble, the highest concentrations were seen at Stations 26 and 27. Station 26 is located on a small fresh water feeder stream to the intake canal. Station 27 is located on a fresh water stream that empties into the discharge canal. Both Station 26 and 27 are isolated from facility liquid releases. It is unlikely that these elevated levels were plant related.

During this month, a silt isotopic analysis showed a higher than normal concentration of Co-60. The presence of Co-60 in silt and sediment in Barnegat Bay has been documented and attributed to past facility discharges.

August 1979:

Clams, Stations 23 and 31, Gross Beta

Clam gross beta concentrations were slightly higher than normal at Stations 23 and 31. The higher activity was seen at Station 31 which is our background station. It is unlikely that these slightly elevated levels were a result of plant operations.

September 1979:

Earth, Station 5, Gross Beta  
Well Water, Station 20, Gross Alpha (insoluble)

An earth sample collected at Station 5 was found to have a high gross beta concentration. No unusual plant operations occurred during this period. Air Particulate, Rain Water, and Vegetation samples collected at the same location and time indicate normal gross beta levels.

Well water Station 20 indicated a slightly higher level of gross alpha insoluble radioactivity. This can be attributed to salt water contamination at this site. It is unlikely that these slightly higher levels were a result of plant operation.

October 1979:

Well Water, Station 20, K-40

A higher than normal K-40 concentration was observed in a sample from Station 20. This well station was contaminated with salt

water as a result of dredging operations. It is unlikely that plant operations resulted in an increased K-40 activity.

November 1979:

- Well Water, Station 22, Gross Alpha (insoluble)
- Clams, Station 23, Gross Beta
- Surface Water, Station 27, Uranium
- Surface Water, Station 32, Sr-90

During November, a slightly higher than normal gross alpha insoluble concentration was detected at well water Station 20. During the collection period, 16 liquid releases were made from the facility. A total of 8.19 uCi of alpha activity was discharged into a stream flow of 3.71 E 6 liters per minute. The gross alpha concentration at the site boundary was conservatively calculated to be 1.27 E-2 pCi/liter. This is less than the 9.82 E-1 pCi/liter concentration reported on the sample from Station 22.

An elevated gross beta concentration of 2.11 pCi/gm was reported in clam samples from Station 23, located approximately 3 miles north of the mouth of Oyster Creek. Station 24, located at the mouth of Oyster Creek, had a clam gross beta concentration of 1.56 pCi/gm. During the collection period, 15 liquid releases were made containing a total of 4.80 E 1 uCi gross beta activity. The gross beta concentration at the site boundary was calculated to be 7.43 E-2 pCi/liter.

A surface water Sr-90 analysis indicated a slightly higher than normal concentration at Station 33. During the month of November, 10 liquid releases were made. No Sr-90 was detected in any release.

An elevated uranium concentration was seen at surface water Station 27. This station is located on a fresh water stream which feeds the discharge canal. Site 27 is isolated from plant liquid discharges. It is unlikely that the observed level was a result of plant operation.

## RADIOLOGICAL IMPACT ON MAN

Environmental monitoring results for the period 6/79 - 11/79 indicate that intakes of Oyster Creek effluent isotopes did not exceed 1% of the intakes equivalent to exposure to 10CFR20, Appendix B, Table II concentrations.

During the growing season months inhalation and terrestrial food pathways are available to gaseous effluent isotopes. The pathways available to liquid effluent isotopes are fish and shellfish consumption. Concentrations exceeded minimum detectable levels for only a few isotopes in only a few samples. Although man-made isotopes detected in the environment are almost always the result of weapons fallout, it was conservatively assumed for this analysis that environmental levels were due to Oyster Creek operations. Intakes from inhalation, fish ingestion, and shellfish ingestion were estimated from air and clam sample results. (Fish concentrations were estimated from clam measurements.) Intakes are less than 1% of intakes equivalent to exposure to concentrations in 10CFR20, Appendix B, Table II.

Intakes via terrestrial food pathways are estimated from analyses of fresh produce samples collected during the harvest season. No isotopes attributable to plant operations were detected in these samples. Concentrations of Cs-137 and Ru-103 are estimated by assuming isotopes are present in concentrations equivalent to the lower limit of detection. The lower limit of detection for I-131 was not low enough during this period to be useful for this purpose. Therefore, the concentration of I-131 was estimated using the quantity of I-131 released, a deposition parameter value, and the model in Regulatory Guide 1.109 (Revision 1). Using this method, estimated intakes from the terrestrial food pathway would not exceed 1% of the intakes equivalent to exposure to concentrations in 10CFR20, Appendix B, Table II.

The USEPA regulation 40CFR190 requires that doses to any real person from certain uranium fuel cycle activities will not exceed in one year 25 mrem for the whole body and other organs except that 75 mrem is the limit for the thyroid. The regulation applies to nuclear power plants. Since there is no other uranium fuel cycle activity likely to contribute doses that are a significant fraction of the EPA limit to people in the vicinity of Oyster Creek, it may be assumed for purposes of this assessment that the full limits apply to Oyster Creek.

The doses equivalent to intakes equivalent to that from 1% of 10CFR20, Appendix B, Table II limits are 5 mrem/yr for the whole body and 15 mrem/yr for other internal organs except for 30 mrem/yr for the bone and the thyroid as recommended in ICRP2. (Concentration limits for I-131 and Sr-89 and Sr-90 reflect Federal Radiation Council guidance and equivalent doses are lower than ICRP recommendations.) The analyses herein shows that the doses from food pathways fall below 40CFR190 limits by a wide margin. Measurements from the thermoluminescent dosimeters show no clear contribution of plant effluents to direct radiation dose and indicate that any contribution does not exceed about five mrem. Therefore, it is clear that 40CFR190 dose limits were met in the period under consideration.

The following code is to be used to identify sample types in the following Tables.

RG - Radiogas (film)  
AP - Air Particulate  
RW - Rain Water  
V - Vegetation  
E - Soil  
WW - Well Water  
SW - Surface Water  
AQS - Silt  
AQL - Clam  
FPV - Crop

During the reporting period, the following special projects were initiated or continued:

1. A contractor, Ecological Analysts, has continued a program to assess the environmental impact of the facility on Barnegat Bay Biological Life.
2. Environmental sample analysis data is being digitized in order to quickly and accurately assess plant impact via computer program.
3. A Quality Assurance/Control program has remained intact within the environmental sampling and analysis program. "Blind" duplicate samples are being collected quarterly by station personnel and sent for analysis to the primary analyses contractor, an independent analyses vendor, and the N. J. Department of Environmental Protection.
4. Fresh vegetable samples were collected and analyzed during the harvest season in order to monitor radioactive intake.

Table III- B  
Environmental Monitoring - Quarterly Summary  
Scheduled Collection Period  
June 1, 1979 through August 31, 1979

Medium	Analysis	Sample Locations	Unit	Number of Samples	Quarterly Average	LLD
RG	Exposure	1 thru 17, T1,A,C,H	Millirem	-	Table V-D	-
AP	Gross $\alpha$	1, 2, 3, 4, 5	pCi/m <sup>3</sup>	5	1.71 E-3	2.77 E-4
AP	Gross $\beta$	1, 2, 3, 4, 5	pCi/m <sup>3</sup>	30	2.42 E-2	2.39 E-3
RW	Gross Insoluble	1, 2, 3, 4, 5	nCi/m <sup>2</sup>	15	<3.37 E-1	1.33 E-1
RW	Gross Soluble	1, 2, 3, 4, 5	nCi/m <sup>2</sup>	15	3.32 E-1	1.37 E-1
V	Gross $\beta$	1, 2, 3, 4, 5	pCi/gram - wet	15	2.78	1.55 E-2
E	Gross $\beta$	1, 2, 3, 4, 5	pCi/gram - dry	15	5.18	1.22
FPV	Gross $\beta$	28, 29, 30	pCi/gram	3	3.36	2.34 E-2
FPV	Sr - 90	29, 29, 30	pCi/gram	3	1.09 E-1	1.08 E-2
FPV	Total Calcium	28, 29, 30	m gram/gram	3	2.47 E-1	1.50 E-3
AQS	Gross $\alpha$	23, 24, 25, 26, 27, 32, 33	pCi/gram	7	<4.96	5.20
AQS	Gross $\beta$	23, 24, 25, 26, 27, 32, 33	pCi/gram	7	5.96	1.20
AQL	Gross $\alpha$	23, 24, 25	pCi/gram	9	<1.02 E-1	6.88 E-2
AQL	Gross $\beta$	23, 24, 25	pCi/gram	9	1.48	2.43 E-2
AQL	K - 40	23, 24, 25	pCi/gram	3	1.3	1.6 E-1
AQL	Co - 58	23, 24, 25	pCi/gram	3	<1.3 E-2	1.3 E-2
AQL	Co - 60	23, 24, 25	pCi/gram	3	<2.4 E-2	1.3 E-2
AQL	Zn - 65	23, 24, 25	pCi/gram	3	<2.8 E-2	2.8 E-2
AQL	Sr - 90	23, 24, 25	pCi/gram	3	<9.19 E-3	9.19 E-3
AQL	I - 131	23, 24, 25	pCi/gram	3	<7.3 E-2	7.3 E-2
AQL	Cs - 137	23, 24, 25	pCi/gram	3	<1.0 E-2	1.0 E-2
AQL	Total Calcium	23, 24, 25	m gram/gram	3	3.74 E-1	1.37 E-3
WW	Gross $\alpha$ Insoluble	1, 18, 19, 20, 21, 22	pCi/liter	18	<3.24 E-1	2.08 E-1
WW	Gross $\alpha$ Soluble	1, 18, 19, 20, 21, 22	pCi/liter	18	<2.97	2.80
WW	Gross $\beta$ Insoluble	1, 18, 19, 20, 21, 22	pCi/liter	18	<4.97 E-1	5.28 E-1

Table III-B  
Environmental Monitoring - Quarterly Summary  
Scheduled Collection Period  
June 1, 1979 through August 31, 1979

Medium	Analysis	Sample Locations	Unit	Number of Samples	Quarterly Average	LLD
WW	Gross $\beta$ Soluble	1,18,19,20,21,22	pCi/liter	18	<3.87	6.83 E-1
WW	H-3	1,18,19,20,21,22	pCi/liter	6	<1.85 E 2	2.00 E 2
WW	K-40	1,18,19,20,21,22	pCi/liter	6	5.40	8.60 E-2
WW	Ra-226	1,18,19,20,21,22	pCi/liter	6	<4.00 E-1	1.34 E-1
WW	Ra-228	1,18,19,20,21,22	pCi/liter	6	<8.37 E-1	8.37 E-1
WW	U	1,18;19,20,21,22	pCi/liter	6	<3.32 E-1	3.02 E-1
SW	Gross $\alpha$ Insoluble	23,24,25,26,27,32,33	pCi/liter	21	<8.36 E-1	3.03 E-1
SW	Gross $\alpha$ Soluble	23,24,25,26,27,32,33	pCi/liter	20	<2.26	1.02
SW	Gross $\beta$ Insoluble	23,24,25,26,27,32,33	pCi/liter	21	<9.04 E-1	5.61 E-1
SW	Gross $\beta$ Soluble	23,24,25,26,27,32,33	pCi/liter	21	<9.66 E 1	5.57
SW	H-3	23,24,25,26,27,32,33	pCi/liter	21	<2.18 E 2	2.23 E 2
SW	K-40	23,24,25,26,27,32,33	pCi/liter	21	<1.43 E 2	8.75 E 1
SW	Co-58	23,24,25,26,27,32,33	pCi/liter	21	<7.4	7.4
SW	Co-60	23,24,25,26,27,32,33	pCi/liter	21	<6.9	6.9
SW	Zn-65	23,24,25,26,27,32,33	pCi/liter	21	<1.3 E 1	1.3
SW	Sr-90	23,24,25,26,27,32,33	pCi/liter	21	<4.70 E-1	4.86 E-1
SW	I-131	23,24,25,26,27,32,33	pCi/liter	21	<3.4 E 1	3.4 E 1
SW	Cs-137	23,24,25,26,27,32,33	pCi/liter	21	<6.4	6.4
SW	Ra-226	23,24,25,26,27,32,33	pCi/liter	21	<2.03 E-1	1.22 E-1
SW	Ra-228	23,24,25,26,27,32,33	pCi/liter	21	<7.08 E-1	6.72 E-1
SW	U	23,24,25,26,27,32,33	pCi/liter	21	<1.78	7.54 E-1
SW	Total Calcium	23,24,25,26,27,32,33	gm/liter	7	2.02 E-1	2.60 E-4

Table III- C  
 Environmental Monitoring - Quarterly Summary  
 Scheduled Collection Period  
 September 1, 1979 through November 30, 1979

Medium	Analysis	Sample Locations	Unit	Number of Samples	Quarterly Average	LLD
RG	Exposure	1 thru 17, T1,A,C,H	Millirem	-	Table V-D	-
AP	Gross $\alpha$	1, 2, 3, 4, 5	pCi/m <sup>3</sup>	5	1.95 E-3	3.71 E-4
AP	Gross $\beta$	1, 2, 3, 4, 5	pCi/m <sup>3</sup>	35	2.70 E-2	3.03 E-3
RW	Gross Insoluble	1, 2, 3, 4, 5	nCi/m <sup>2</sup>	15	4.88 E-1	1.91 E-1
RW	Gross Soluble	1, 2, 3, 4, 5	nCi/m <sup>2</sup>	15	<2.48 E-1	1.89 E-1
V	Gross $\beta$	1, 2, 3, 4, 5	pCi/gram - wet	15	2.65	1.70 E-2
E	Gross $\beta$	1, 2, 3, 4, 5	pCi/gram - dry	15	7.44	1.33
FPV	Gross $\beta$	28, 29, 30	pCi/gram	3	3.98	3.50 E-2
FPV	Sr - 90	29, 29, 30	pCi/gram	2	1.47 E-1	8.62 E-3
FPV	Total Calcium	28, 29, 30	m gram/gram	3	4.60	3.51 E-3
AQS	Gross $\alpha$	23,24,25,26,27,32,33	pCi/gram	7	<5.67	3.38
AQS	Gross $\beta$	23,24,25,26,27,32,33	pCi/gram	7	5.24	1.28
AQL	Gross $\alpha$	23, 24, 25	pCi/gram	9	4.48 E-1	5.75 E-2
AQL	Gross $\beta$	23, 24, 25	pCi/gram	9	1.61	2.12 E-2
AQL	K - 40	23, 24, 25	pCi/gram	3	1.7	1.6 E-1
AQL	Co - 58	23, 24, 25	pCi/gram	3	4.3 E-2	1.3 E-2
AQL	Co - 60	23, 24, 25	pCi/gram	3	4.2 E-2	1.2 E-2
AQL	Zn - 65	23, 24, 25	pCi/gram	3	2.2 E-2	2.2 E-2
AQL	Sr - 90	23, 24, 25	pCi/gram	3	6.19 E-3	7.13 E-3
AQL	I - 131	23, 24, 25	pCi/gram	3	7.9 E-2	7.9 E-2
AQL	Cs - 137	23, 24, 25	pCi/gram	3	4.0 E-2	1.0 E-2
AQL	Total Calcium	23, 24, 25	m gram/gram	3	6.06 E-1	2.17 E-3
WW	Gross $\alpha$ Insoluble	1,18,19,20,21,22	pCi/liter	18	2.45 E-1	1.95 E-1
WW	Gross $\alpha$ Soluble	1,18,19,20,21,22	pCi/liter	18	2.47	2.40
WW	Gross $\beta$ Insoluble	1,18,19,20,21,22	pCi/liter	18	5.36 E-1	5.43 E-1

Table III- C  
 Environmental Monitoring - Quarterly Summary  
 Scheduled Collection Period  
 September 1, 1979 through November 30, 1979

Medium	Analysis	Sample Locations	Unit	Number of Samples	Quarterly Average	LLD
WW	Gross $\beta$ Soluble	1,18,19,20,21,22	pCi/liter	18	<4.34	6.03 E-1
WW	H-3	1,18,19,20,21,22	pCi/liter	6	<2.54 E 2	2.60 E 2
WW	K-40	1,18,19,20,21,22	pCi/liter	6	<5.85	8.60 E-2
WW	Ra-226	1,18,19,20,21,22	pCi/liter	6	<3.54 E-1	1.26 E-1
WW	Ra-228	1,18,19,20,21,22	pCi/liter	6	<1.30	1.30
WW	U	1,18;19,20,21,22	pCi/liter	6	<4.98 E-1	4.55 E-1
SW	Gross $\alpha$ Insoluble	23,24,25,26,27,32,33	pCi/liter	21	<2.32 E-1	2.21 E-1
SW	Gross $\alpha$ Soluble	23,24,25,26,27,32,33	pCi/liter	21	<2.16	1.23
SW	Gross $\beta$ Insoluble	23,24,25,26,27,32,33	pCi/liter	21	<5.76 E-1	5.84 E-1
SW	Gross $\beta$ Soluble	23,24,25,26,27,32,33	pCi/liter	21	<8.58 E 1	5.31
SW	H-3	23,24,25,26,27,32,33	pCi/liter	21	<1.89 E 2	1.92 E 2
SW	K-40	23,24,25,26,27,32,33	pCi/liter	21	<1.6 E 2	8.6 E 1
SW	Co-58	23,24,25,26,27,32,33	pCi/liter	21	<7.3	7.3
SW	Co-60	23,24,25,26,27,32,33	pCi/liter	21	<6.6	6.6
SW	Zn-65	23,24,25,26,27,32,33	pCi/liter	21	<1.4 E 1	1.4 E 1
SW	Sr-90	23,24,25,26,27,32,33	pCi/liter	21	<5.18 E-1	4.63 E-1
SW	I-131	23,24,25,26,27,32,33	pCi/liter	21	<3.6 E 1	3.6 E 1
SW	Cs-137	23,24,25,26,27,32,33	pCi/liter	21	<7.0	7.0
SW	Ra-226	23,24,25,26,27,32,33	pCi/liter	21	<2.97 E-1	1.41 E-1
SW	Ra-228	23,24,25,26,27,32,33	pCi/liter	21	<1.15	1.13
SW	U	23,24,25,26,27,32,33	pCi/liter	21	<1.75	1.06
SW	Total Calcium	23,24,25,26,27,32,33	gm/liter	7	8.96 E-1	2.60 E-4

Table III-D  
Radiogas Film Badges  
Scheduled Collection Period

June 1, 1979 through November 30, 1979

Collection Date		6-25-79	7-23-79	8-20-79		Three Month Total	9-17-79	10-15-79	11-12-79		Three Month Total	Six Month Total
Station	Unit											
1	Millirem	0	18	0		18	8	0	0		8	26
T1	Millirem	0	0	0		0	8	0	0		8	8
2	Millirem	0	0	0		0	4	0	0		4	4
3	Millirem	0	0	0		0	4	0	0		4	4
4	Millirem	0	0	0		0	0	0	0		0	0
5	Millirem	0	9	0		9	Lost	0	0		0	9
6	Millirem	0	0	0		0	4	0	0		4	4
7	Millirem	0	0	0		0	0	0	0		0	0
8	Millirem	0	0	0		0	4	0	0		4	4
9	Millirem	0	0	0		0	0	0	0		0	0
10	Millirem	0	0	0		0	0	0	0		0	0
11	Millirem	0	0	0		0	4	0	0		4	4
12	Millirem	0	0	0		0	4	0	0		4	4
13	Millirem	0	0	0		0	4	0	0		4	4
14	Millirem	0	0	0		0	4	0	0		4	4
15	Millirem	0	0	0		0	0	0	0		0	0
16	Millirem	0	0	0		0	4	0	0		4	4
17	Millirem	0	0	0		0	0	0	0		0	0
A	Millirem	0	0	0		0	4	0	0		4	4
C	Millirem	0	0	0		0	0	0	0		0	0
H	Millirem	0	0	0		0	0	0	0		0	0

Table III-E  
 Environmental Monitoring - Semi-annual Summary  
 Scheduled Collection Period  
 June 1, 1979 through November 30, 1979

Medium	Analysis	Unit	Location with Highest Average	Number of Samples	Maximum	Average	Minimum
RG	Exposure	Millirem	1	6	18	4	0
AP	Gross $\alpha$	pCi/m <sup>3</sup>	A	2	2.55 E-3	2.31 E-3	2.06 E-3
AP	Gross $\beta$	pCi/m <sup>3</sup>	3	13	9.08 E-2	2.93 E-2	1.51 E-2
AP	I-131 Charcoal	pCi/m <sup>3</sup>	5	13	<8.53 E-2	<2.99 E-2	<1.55 E-2
RW	Gross $\beta$ Insoluble	nCi/m <sup>2</sup>	C	6	6.8 E-1	<3.1 E-1	1.0 E-1
RW	Gross $\beta$ Soluble	nCi/m <sup>2</sup>	4	6	7.0 E-1	<3.8 E-1	1.1 E-1
V	Gross $\beta$	pCi/gram-wet	5	6	4.75	3.40	2.00
E	Gross $\beta$	pCi/gram-dry	5	6	2.90 E 1	1.3 E 1	3.62
FPV	Gross $\beta$	pCi/gram	30	2	4.04	4.04	3.96
FPV	Sr-90	pCi/gram	30	2	2.75 E-1	2.33 E-1	1.91 E-1
FPV	Total Calcium	mgram/gram	29	2	5.68	2.93	1.81 E-1
AQS	Gross $\alpha$	pCi/gram	23	2	1.28 E 1	8.59	4.37
AQS	Gross $\beta$	pCi/gram	31	2	1.47 E 1	1.29 E 1	1.10 E 1
AQL	Gross $\alpha$	pCi/gram	23	6	2.79 E-1	<1.43 E-1	<8.89 E-2
AQL	Gross $\beta$	pCi/gram	31	6	2.53	1.66	1.00
AQL	K-40	pCi/gram	24	2	2.3	2.2	2.0
AQL	Co-58	pCi/gram	23	2	<1.6 E-2	<1.6 E-2	<1.6 E-2
AQL	Co-60	pCi/gram	25	2	3.3 E-2	<2.2 E-2	<1.1 E-2
AQL	Zn-65	pCi/gram	23	2	<3.3 E-2	<3.3 E-2	<3.3 E-2
AQL	Sr-90	pCi/gram	23	2	<3.72 E-3	<1.11 E-2	<1.85 E-2
AQL	I-131	pCi/gram	23	2	<8.4 E-2	<8.4 E-2	<8.3 E-2
AQL	Cs-137	pCi/gram	23	2	<1.4 E-2	<1.4 E-2	<1.4 E-2
AQL	Total Calcium	mgram/gram	31	2	1.61	1.00	3.95 E-1
WW	Gross $\alpha$ Insoluble	pCi/liter	22	6	9.82 E-1	<4.29 E-1	<2.01 E-1
WW	Gross $\alpha$ Soluble	pCi/liter	20	6	<1.08 E-1	<7.31	<4.61

Table III-E Continued  
 Environmental Monitoring - Semi-annual Summary  
 Scheduled Collection Period  
 June 1, 1979 through November 30, 1979

Medium	Analysis	Unit	Location with Highest Average	Number of Samples	Maximum	Average	Minimum
WW	Gross $\beta$ Insoluble	pCi/liter	18	6	$< 5.87 \text{ E-1}$	$< 5.36 \text{ E-1}$	$< 4.90 \text{ E-1}$
WW	Gross $\beta$ Soluble	pCi/liter	20	6	1.82 E 1	1.44 E 1	1.29 E 1
WW	H-3	pCi/liter	18	6	$< 2.60 \text{ E 2}$	$< 2.50 \text{ E 2}$	$< 2.39 \text{ E 2}$
WW	K-40	pCi/liter	20	6	2.44 E 1	2.30 E 1	2.15 E 1
WW	Ra-226	pCi/liter	20	6	8.26 E-1	6.65 E-1	5.04 E-1
WW	Ra-228	pCi/liter	22	6	$< 2.02$	$< 1.61$	$< 1.01$
WW	U	pCi/liter	18	6	$< 5.00 \text{ E-1}$	$< 4.75 \text{ E-1}$	$< 4.50 \text{ E-1}$
SW	Gross $\alpha$ Insoluble	pCi/liter	26	6	2.61	$< 5.98 \text{ E-1}$	$< 9.61 \text{ E-2}$
SW	Gross $\alpha$ Soluble	pCi/liter	33	5	4.38	2.92	1.50
SW	Gross $\beta$ Insoluble	pCi/liter	26	6	3.36	$< 5.68 \text{ E-1}$	$< 5.01 \text{ E-1}$
SW	Gross $\beta$ Soluble	pCi/liter	23	6	$1.68 \text{ E 2}$	$1.48 \text{ E 2}$	$1.32 \text{ E 2}$
SW	H-3	pCi/liter	25, 26 & 31	6	$< 2.66 \text{ E 2}$	$< 2.09 \text{ E 2}$	$< 8.46 \text{ E 1}$
SW	K-40	pCi/liter	31	6	$3.3 \text{ E 2}$	$2.2 \text{ E 2}$	$1.7 \text{ E 2}$
SW	Co-58	pCi/liter	31 & 33	6	$< 9.0$	$< 7.4$	$< 7.3$
SW	Co-60	pCi/liter	33	6	$< 7.8$	$< 7.3$	$< 6.3$
SW	Zn-65	pCi/liter	23	6	$< 1.6 \text{ E 1}$	$< 1.5 \text{ E 1}$	$< 1.3 \text{ E 1}$
SW	Sr-90	pCi/liter	32	6	1.78	$< 7.57 \text{ E-1}$	$< 3.60 \text{ E-1}$
SW	I-131	pCi/liter	33	6	$< 4.9 \text{ E 1}$	$< 3.8 \text{ E 1}$	$< 2.7 \text{ E 1}$
SW	Cs-137	pCi/liter	27 & 33	6	$< 7.8$	$< 7.0$	$< 6.2$
SW	Ra-226	pCi/liter	26	6	$5.68 \text{ E-1}$	$< 3.81 \text{ E-1}$	$< 2.13 \text{ E-1}$
SW	Ra-228	pCi/liter	33	6	$< 1.53$	$< 1.16$	$7.22 \text{ E-1}$
SW	U	pCi/liter	31	6	3.03	$< 2.52$	1.67
SW	Total Calcium	gm/liter	24	2	2.55	$1.45 \text{ E-1}$	$3.43 \text{ E-1}$

Table III-F  
Thermoluminescent Dosimeters  
Scheduled Collection Period

June 1, 1979 through November 30, 1979

Collection Date		6-25-79	7-23-79	8-20-79		Three Month Total	9-17-79	10-15-79	11-12-79		Three Month Total	Six Month Total
Station	Unit											
1	Millirem	9.51	9.89	7.93		27.33	9.57	11.16	7.43		28.16	55.49
T1	Millirem	9.23	9.82	8.44		27.49	10.04	11.32	8.57		29.93	57.42
2	Millirem	5.55	4.68	3.72		13.95	4.00	5.00	4.74		13.74	27.69
3	Millirem	5.00	5.50	3.73		14.23	4.06	5.55	4.94		14.55	28.78
4	Millirem	4.99	4.59	4.25		13.83	4.32	4.92	4.64		13.88	27.71
5	Millirem	5.54	4.99	4.65		15.18	Lost	5.99	4.91		10.90	26.08
6	Millirem	5.56	5.11	4.43		15.10	5.38	5.86	4.88		16.12	31.22
7	Millirem	5.06	4.63	4.44		14.13	4.14	5.14	5.30		14.58	28.71
8	Millirem	5.10	4.21	4.12		13.43	3.68	4.77	4.41		12.86	26.29
9	Millirem	5.63	4.60	5.74		15.97	4.22	6.03	5.67		15.92	31.89
10	Millirem	4.98	4.73	3.66		13.37	4.16	5.38	5.46		15.00	28.37
11	Millirem	4.49	4.44	4.09		13.02	3.45	4.35	5.09		12.89	25.91
12	Millirem	4.38	4.47	3.90		12.75	3.03	4.23	3.78		11.04	23.79
13	Millirem	5.27	5.19	3.78		14.24	3.84	5.02	4.60		13.46	27.70
14	Millirem	5.92	6.13	4.89		16.94	5.05	6.15	5.26		16.46	33.40
15	Millirem	5.35	4.95	5.63		15.93	4.13	4.88	4.36		13.37	29.30
16	Millirem	4.59	4.93	4.00		13.52	4.58	4.51	4.76		13.85	27.37
17	Millirem	5.28	5.10	3.87		14.25	3.80	5.07	4.78		13.65	27.90
A	Millirem	5.30	6.61	5.44		17.35	5.38	6.08	5.26		16.72	34.07
C	Millirem	4.90	5.78	4.77		15.45	5.47	5.29	4.41		15.17	30.62
H	Millirem	5.00	5.32	3.98		14.30	4.62	5.07	4.56		14.25	28.55

Table III-G  
Charcoal Filter Analysis from Air Sampling Stations  
Scheduled Collection Period  
June 1, 1979 through November 30, 1979

Station	Unit	Number of Samples	Maximum	Average	Minimum
1	pCi/m <sup>3</sup>	13	<2.76 E-2	< 1.82 E-2	<1.21 E-2
2	pCi/m <sup>3</sup>	13	<3.95 E-2	< 2.08 E-2	<1.13 E-2
3	pCi/m <sup>3</sup>	13	<3.31 E-2	< 1.88 E-2	<1.01 E-2
4	pCi/m <sup>3</sup>	13	<3.98 E-2	< 2.16 E-2	<1.22 E-2
5	pCi/m <sup>3</sup>	13	<8.53 E-2	< 2.99 E-2	<1.55 E-2

TABLE III-H  
 Air Particulate Isotopic Analysis (pCi/m<sup>3</sup>)  
 Scheduled Collection Period - June 1, 1979 through November 30, 1979

Station #	Nuclide	Number of Times Detected	Maximum	Average	Minimum
1	Be-7	1	-	1.5 E-1	-
2	Be-7	1	-	2.4 E-1	-
3	Be-7	2	1.4 E-1	1.4 E-1	1.3 E-1
4	Be-7	2	1.2 E-1	1.2 E-1	1.1 E-1
5	Co-60	1	-	1.4 E-1	-
A (Background)	None detected				
C (Background)	None detected				
H (Background)	None detected				

Table III-J  
Background Station Analyses  
Scheduled Collection Period  
June 1, 1979 through November 30, 1979

Medium	Station	Analysis	Unit	Number of Samples	Maximum	Average	Minimum
AP	A	Gross $\alpha$	pCi/m <sup>3</sup>	2	2.55 E-3	2.31 E-3	2.06 E-3
AP	A	Gross $\beta$	pCi/m <sup>3</sup>	13	3.59 E-2	2.55 E-2	1.60 E-2
AP	A	I-131	pCi/m <sup>3</sup>	13	<4.01 E-2	<2.38 E-2	<1.33 E-2
AP	C	Gross $\alpha$	pCi/m <sup>3</sup>	2	1.57 E-3	1.50 E-3	1.43 E-3
AP	C	Gross $\beta$	pCi/m <sup>3</sup>	13	3.34 E-2	2.06 E-2	1.09 E-2
AP	C	I-131	pCi/m <sup>3</sup>	13	<4.07 E-2	<2.23 E-2	<1.07 E-2
AP	H	Gross $\alpha$	pCi/m <sup>3</sup>	2	1.45 E-3	1.18 E-3	9.10 E-4
AP	H	Gross $\beta$	pCi/m <sup>3</sup>	13	2.67 E-2	1.88 E-2	1.15 E-2
AP	H	I-131	pCi/m <sup>3</sup>	13	<5.45 E-2	<2.23 E-2	<1.19 E-2
RW	A	Gross $\beta$ Insoluble	nCi/m <sup>2</sup>	6	4.5 E-1	<2.8 E-1	<1.0 E-1
RW	A	Gross $\beta$ Soluble	nCi/m <sup>2</sup>	6	3.0 E-1	<2.1 E-1	1.5 E-1
RW	C	Gross $\beta$ Insoluble	nCi/m <sup>2</sup>	6	6.8 E-1	<3.1 E-1	<1.0 E-1
RW	C	Gross $\beta$ Soluble	nCi/m <sup>2</sup>	6	3.8 E-1	<2.6 E-1	1.0 E-1
RW	H	Gross $\beta$ Insoluble	nCi/m <sup>2</sup>	6	8.1 E-1	<2.9 E-1	<1.0 E-1
RW	H	Gross $\beta$ Soluble	nCi/m <sup>2</sup>	6	4.6 E-1	<3.2 E-1	<1.0 E-1
AQS	31	Gross $\alpha$	pCi/gram	2	6.22	5.20	4.17
AQS	31	Gross $\beta$	pCi/gram	2	1.47 E 1	1.29 E 1	1.10 E 1
AQL	31	Gross $\alpha$	pCi/gram	6	2.30 E-1	<1.06 E-1	<7.43 E-2
AQL	31	Gross $\beta$	pCi/gram	6	2.53	1.66	1.00
AQL	31	K-40	pCi/gram	2	1.5	1.2	9.4 E-1
AQL	31	Co-58	pCi/gram	2	<1.2 E-2	<1.1 E-2	<1.0 E-2
AQL	31	Co-60	pCi/gram	2	<1.1 E-2	<1.0 E-2	<9.4 E-3
AQL	31	Zn-65	pCi/gram	2	<1.7 E-2	<1.7 E-2	<1.7 E-2
AQL	31	S-90	pCi/gram	2	<4.49 E-3	<4.22 E-3	<3.94 E-3
AQL	31	I-131	pCi/gram	2	<8.4 E-2	<8.0 E-2	<7.6 E-2

Table III-J Continued  
 Background Station Analyses  
 Scheduled Collection Period

June 1, 1979 through November 30, 1979

Medium	Station	Analysis	Unit	Number of Samples	Maximum	Average	Minimum
AOL	31	Cs-137	pCi/gram	2	<9.3 E-3	<9.3 E-3	<9.3 E-3
AOL	31	Total Calcium	mg/gram	2	1.61	1.00	3.95 E-1
SW	31	Gross $\alpha$ Insoluble	pCi/liter	6	1.03	<3.66 E-1	<1.45 E-1
SW	31	Gross $\alpha$ Soluble	pCi/liter	6	3.43	<2.89	<2.10
SW	31	Gross $\beta$ Insoluble	pCi/liter	6	6.48 E-1	<5.84 E-1	<5.01 E-1
SW	31	Gross $\beta$ Soluble	pCi/liter	6	1.41 E 2	1.04 E 2	4.78 E 1
SW	31	H-3	pCi/liter	6	<2.66 E 2	<2.09 E 2	<8.46 E 1
SW	31	K-40	pCi/liter	6	3.3 E 2	2.2 E 2	1.7 E 2
SW	31	Co-58	pCi/liter	6	<9.0	<7.7	<7.3
SW	31	Co-60	pCi/liter	6	<7.8	<6.8	<6.3
SW	31	Zn-65	pCi/liter	6	<1.5 E 1	<1.4 E 1	<1.2 E 1
SW	31	Sr-90	pCi/liter	6	<7.71 E-1	<5.18 E-1	3.37 E-1
SW	31	I-131	pCi/liter	6	<4.9 E 1	<3.7 E 1	<2.7 E 1
SW	31	Cs-137	pCi/liter	6	<7.8	<6.7	<6.2
SW	31	Ra-226	pCi/liter	6	2.11 E-1	<1.46 E-1	<7.65 E-2
SW	31	Ra-228	pCi/liter	6	<1.16	<8.00 E-1	<5.95 E-1
SW	31	U	pCi/liter	6	3.03	<2.52	1.67
SW	31	Total Calcium	gm/liter	2	1.02	6.87 E-1	3.53 E-1

TABLE III-K  
Isotopic Silt Analysis (pCi/gm)  
Scheduled Collection Period - June 1, 1979 through November 30, 1979

Station #	Nuclide	Times Detected	Maximum	Average	Maximum
23	K-40	5	1.8	1.1	6.4 E-1
	Co-60	1	-	3.3 E-2	-
	Cs-137	2	2.2 E-2	2.2 E-2	2.2 E-2
	Ra-226	6	3.3 E-1	2.6 E-1	2.2 E-1
	Th-232	6	2.4 E-1	1.8 E-1	1.1 E-1
24	Be-7	1	-	3.8 E-1	-
	K-40	6	8.2	4.1	1.7
	Co-60	3	4.2 E-2	3.5 E-2	3.1 E-2
	Cs-137	5	4.8 E-2	3.5 E-2	1.7 E-2
	Ra-226	6	3.6 E-1	2.5 E-1	1.9 E-1
	Th-232	6	4.9 E-1	3.2 E-1	1.7 E-1
25	Be-7	1	-	2.2 E-1	-
	K-40	4	2.6	1.2	5.2 E-1
	Co-60	1	-	3.2 E-2	-
	Cs-137	3	5.3 E-2	3.2 E-2	2.1 E-2
	Ce-141	1	-	3.4 E-2	-
	Ra-226	6	4.9 E-1	3.9 E-1	3.0 E-1
	Th-232	6	5.2 E-1	3.2 E-1	1.9 E-1
31 (Background)	K-40	6	1.4 E 1	1.1 E 1	7.5
	Cs-137	2	3.9 E-2	3.1 E-2	2.2 E-2
	Ra-226	6	4.8 E-1	3.5 E-1	2.6 E-1
	Th-232	6	6.6 E-1	4.4 E-1	2.8 E-1
32	Be-7	1	-	2.6 E-1	-
	K-40	6	1.1 E 1	4.2	9.2 E-1
	Co-60	4	7.5 E-1	2.2 E-1	1.8 E-2
	Cs-137	6	1.2 E-1	5.2 E-2	1.6 E-2
	Ra-226	6	4.8 E-1	3.1 E-1	1.8 E-1
	Th-232	6	4.8 E-1	3.6 E-1	2.3 E-1
33	Be-7	5	1.9	1.3	5.1 E-1
	K-40	6	1.4 E 1	8.9	3.5
	Mn-54	2	6.2 E-2	5.3 E-2	4.4 E-2
	Co-58	1	-	4.6 E-2	-
	Co-60	6	9.2 E-1	5.1 E-1	1.1 E-1
	Ru-106	2	5.8 E-1	5.3 E-1	4.8 E-1
	Sb-125	1	-	1.2 E-1	-
	Cs-137	6	3.9 E-1	2.4 E-1	5.2 E-2
	Ce-144	3	6.9 E-1	4.7 E-1	3.5 E-1
	Ra-226	6	7.1 E-1	5.2 E-1	3.7 E-1
	Th-232	6	6.5 E-1	4.9 E-1	2.9 E-1

TABLE III-L  
Vegetable Isotopic Analyses

Location	Sample Type	Isotopes Detected	Analyses Result (pCi/gm-wet)
Forked River, N.J.	Tomatoes	K-40	2.1 + 0.27
	Peppers	K-40	1.5 + 0.29
	Cucumber	K-40	1.0 + 0.17
Toms River, N.J.	Corn	K-40	2.6 + 0.49
Barnegat, N.J.	Tomatoes	K-40	2.0 + 0.26
	Peppers	K-40	1.6 + 0.35
	Eggplant	K-40	2.3 + 0.35
Forked River, N.J.	Tomatoes	K-40	4.5 + 0.59
	Cucumbers	K-40	8.1 + 0.15
Farmingdale, N.J.	Tomatoes	K-40	1.9 + 0.34
	Peppers	K-40	1.6 + 0.53
	Corn	K-40	2.4 + 0.38
Cookstown, N.J.	Tomatoes	K-40	1.7 + 0.34
	Cucumbers	K-40	1.2 + 0.18
	Corn	K-40	3.3 + 0.63
Hammonton, N.J.	Tomatoes	K-40	2.5 + 0.28
	Corn	K-40	1.9 + 0.57
	Peppers	K-40	2.7 + 0.46