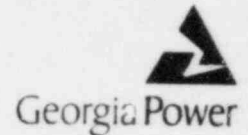


GEORGIA POWER COMPANY  
EDWIN I. HATCH NUCLEAR PLANT  
ANNUAL ENVIRONMENTAL SURVEILLANCE REPORT  
CALENDAR YEAR 1983

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Edwin I. Hatch Nuclear Plant

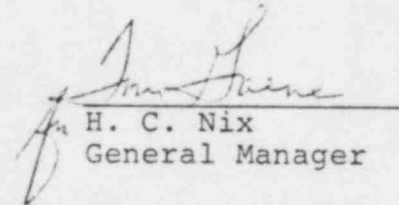
March 30, 1984  
GM-84-199

PLANT E. I. HATCH  
Annual Environmental Surveillance Report, 1983

Director, Office of Nuclear Reactor Regulation  
c/o Distribution Services Branch, DDC, ADM  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

Gentlemen:

Pursuant to section 5.7 of the Hatch Unit 1 and Unit 2  
Environmental Technical Specifications, please find attached  
the Annual Environmental Surveillance Report for 1983.

  
H. C. Nix  
General Manager

HCN/WHR/jce

Xc: J. T. Beckham - letter only  
File: M84-4



Georgia Power Company  
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Edwin I. Hatch Nuclear Plant

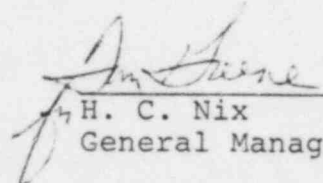
March 30, 1984  
GM-84-198

PLANT E. I. HATCH  
Annual Environmental Surveillance Report, 1983

United States Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
Region II  
Suite 3100  
101 Marietta Street  
Atlanta, Georgia 30303

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Pursuant to section 5.7 of the Hatch Unit 1 and Unit 2 Environmental Technical Specifications, please find attached the Annual Environmental Surveillance Report for 1983.

  
H. C. Nix  
General Manager

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File: M84-4

GEORGIA POWER COMPANY  
EDWIN I. HATCH NUCLEAR PLANT  
ANNUAL ENVIRONMENTAL SURVEILLANCE REPORT  
CALENDAR YEAR 1983

HNP  
ANNUAL REPORT

INTRODUCTION

This annual report is submitted pursuant to paragraph 5.7.1 (a) of the Environmental Technical Specifications (ETS), which is Appendix B to the operating licenses for Edwin I. Hatch Nuclear Plant (HNP), Units I and II, DPR-57 and NPF-5, respectively. This report includes summaries, analyses, interpretation, and statistical evaluation of the results of the environmental monitoring at and in the environs of HNP during 1983.

HNP  
ANNUAL REPORT

TABLE OF CONTENTS

CHAPTER 1

RADIOLOGICAL MONITORING

<u>Section</u>	<u>Title</u>	<u>Page</u>
1.1	<u>INTRODUCTION</u>	1-1
1.2	<u>DISCHARGES TO THE ATMOSPHERE</u>	1-1
1.2.1	AIRBORNE DUST	1-2
1.2.2	AIRBORNE IODINE	1-4
1.2.3	THERMOLUMINESCENT DOSIMETERS	1-6
1.2.4	MILK	1-6
1.2.5	GRASS	1-11
1.3	<u>DISCHARGES TO THE RIVER</u>	1-13
1.3.1	RIVER WATER	1-14
1.3.2	CLAMS	1-14
1.3.3	AMERICAN SHAD	1-16
1.3.4	SEDIMENT	1-16
1.4	<u>DISCHARGES TO THE GROUND</u>	1-16
1.4.1	CST-1 AREA	1-18
1.4.2	AREA ABOUT THE NORTHSIDE OF THE UNIT 1 TURBINE BUILDING	1-20
1.4.3	OTHER LOCATIONS AND OTHER RESULTS	1-24
1.5	<u>CROSSCHECK PROGRAM</u>	1-26
1.6	<u>CONCLUSIONS</u>	1-32

CHAPTER 2

METEOROLOGICAL MONITORING

<u>Section</u>	<u>Title</u>	<u>Page</u>
2.1	<u>INTRODUCTION</u>	2-1
2.2	<u>1983 DATA</u>	2-1
2.2.1	DATA RECOVERY	2-1
2.2.2	WIND ROSES	2-1
2.2.3	TEMPERATURE DATA	2-1
2.2.4	JOINT FREQUENCY TABLES	2-2
2.2.5	PRECIPITATION	2-2

HNP  
ANNUAL REPORT

TABLE OF CONTENTS

CHAPTER 3

ADMINISTRATIVE CONTROLS

<u>Section</u>	<u>Title</u>	<u>Page</u>
3.1	<u>SPECIFICATIONS</u>	3-1
3.2	<u>DISCUSSION</u>	3-1

HNP  
ANNUAL REPORT

CHAPTER 1

RADIOLOGICAL MONITORING

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
1.1	INTRODUCTION	1-1
1.2	<u>DISCHARGES TO THE ATMOSPHERE</u>	1-1
1.2.1	AIRBORNE DUST	1-2
1.2.2	AIRBORNE IODINE	1-4
1.2.3	THERMOLUMINESCENT DOSIMETERS	1-6
1.2.4	MILK	1-6
1.2.5	GRASS	1-11
1.3	<u>DISCHARGES TO THE RIVER</u>	1-13
1.3.1	RIVER WATER	1-14
1.3.2	CLAMS	1-14
1.3.3	AMERICAN SHAD	1-16
1.3.4	SEDIMENT	1-16
1.4	<u>DISCHARGES TO THE GROUND</u>	1-16
1.4.1	CST-1 AREA	1-18
1.4.2	AREA ABOUT THE NORTH SIDE OF THE UNIT 1 TURBINE BUILDING	1-20
1.4.3	OTHER LOCATIONS AND OTHER RESULTS	1-24
1.5	<u>CROSSCHECK PROGRAM</u>	1-26
1.6	<u>CONCLUSIONS</u>	1-32

HNP  
ANNUAL REPORT

CHAPTER 1

RADIOLOGICAL MONITORING

LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Page</u>
1.2-1	ANNUAL SUMMARY OF GROSS BETA ACTIVITY IN AIRBORNE DUST	1-3
1.2-2	ANNUAL SUMMARY OF SPECIFIC RADIONUCLIDES DETECTED IN AIRBORNE DUST COMPOSITES	1-5
1.2-3	LOCATIONS OF TLD STATIONS	1-7
1.2-4	ANNUAL SUMMARY OF ON-STATION DOSE ACQUIRED BY TLDs REQUIRED BY ETS	1-8
1.2-5	ANNUAL SUMMARY OF ON-STATION DOSE ACQUIRED BY TLDs AT SITE BOUNDARY AND AT 4-5 MILES	1-9
1.2-6	ANNUAL SUMMARY OF SPECIFIC RADIONUCLIDES DETECTED IN GRASS	1-12
1.4-1	ANNUAL SUMMARY OF TRITIUM LEVELS IN GROUND- WATER SAMPLES FROM CST-1 AREA	1-19
1.4-2	ANNUAL SUMMARY OF TRITIUM LEVELS IN GROUNDWATER SAMPLES FROM AREA ABOUT THE NORTH SIDE OF THE UNIT 1 TURBINE BUILDING	1-21
1.4-3	ANNUAL SUMMARY OF TRITIUM LEVELS IN GROUNDWATER SAMPLES FROM OTHER AREAS	1-25
1.5-1	CROSSCHECK PROGRAM RESULTS FOR AIR FILTERS	1-27
1.5-2	CROSSCHECK PROGRAM RESULTS FOR MILK SAMPLES	1-28
1.5-3	CROSSCHECK PROGRAM RESULTS FOR WATER SAMPLES	1-29
1.5-4	CROSSCHECK PROGRAM RESULTS FOR FOOD SAMPLES	1-30

HNP  
ANNUAL REPORT

CHAPTER 1

RADIOLOGICAL MONITORING

LIST OF FIGURES

Figure

Title

1.4-1

TEST HOLES AND THE DRAINAGE SYSTEM



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1.1 RADIOLOGICAL MONITORING

1.1 Introduction

The objectives of the Radiological Environmental Monitoring Program are to ascertain the levels of radiation and concentrations of radioactivity in the environment which are due to plant operations and to evaluate the impact to the environment from these radiological levels. Assurance is provided in achieving these objectives by following the program's requirements as described in Section 3.2 of the Environmental Technical Specifications (ETS). Provided herein are the program's results for calendar year 1983 which include an assessment of the radiological impact upon the environment, as well as reports on various related activities.

A summary, interpretation and evaluation of the analytical results obtained from the samples utilized for the environmental monitoring of discharges of radioactive materials to the atmosphere, river and ground are provided, as appropriate, in Sections 1.2, 1.3 and 1.4, respectively. The data on samples required by the ETS are tabulated by station or group of stations. As practical, each tabulation consists of: the maximum, minimum and average values of the radiological level; the number of samples (n); and the standard deviation (s). Nominally, summaries are provided for the control and indicator stations on an annual basis; they may also be provided for other periods of exposure as feasible. The calculated minimum detectable difference (MDD) at the 99% confidence level between these two groups is provided for comparison with the difference in their average values,  $L_i - L_c$ .

Deviations are permitted from the sampling schedule required by Table 3.2-1 of the ETS if specimens are unobtainable due to hazardous conditions, seasonable unavailability, malfunction of automatic sampling equipment or other legitimate reasons. Any deviations from the required sampling schedule are included in the discussions for each particular type sample.

In Section 1.5, the results of the EPA Crosscheck Program are provided. In Section 1.6, the chief conclusions are presented.

1.2 Discharges To The Atmosphere

The media or pathways sampled to monitor discharges to the atmosphere consisted of: airborne dust, airborne iodine, external radiation, milk and grass. Airborne dust and iodine were collected at air monitoring stations. In accordance with the ETS, thermoluminescent dosimeters (TLDs) for measuring external radiation were placed at each of the air stations and at three other locations as shown below. Starting with the 1st quarter of 1980, additional TLDs were placed in the site environs to conform with Revision 1 of the Technical Position of the Radiation Assessment Branch of the NRC, dated November 1979. The locations of these new TLDs are described in Section 1.2.3. The locations of the milk sampling stations are provided in Section 1.2.4. Grass samples were collected from plots maintained at Air Stations

5, 17 and 21. The sector location and distance as reckoned from the main stack to each of the air stations and to each of the TLD stations required by the ETS are as follows:

#### Air Stations

No. 1	State Prison	ENE	11.2 miles
No. 5	Baxley	S	10.0 miles
No. 9	Dead River Road	NE	1.8 miles
No. 15	Roadside Park	WNW	0.8 miles
No. 17	Site Boundary	SE	1.2 miles
No. 21	Site Boundary	WSW	1.0 miles

#### TLD Stations

(same as air stations plus)

No. 119	East Boundary	ESE	1.1 miles
No. 126	South Boundary	S	0.9 miles
No. 133	West Boundary	W	1.1 miles

Stations 1 and 5 are the control stations; the other stations are indicator stations.

All required laboratory analyses of the samples collected to monitor discharges to the atmosphere are contracted to Teledyne Isotopes, Inc. of Westwood, New Jersey except for: the gross beta counting of airborne particulates which is performed by the plant; the reading of the TLDs which is done by Teledyne Isotopes Midwest Laboratory at Northbrook, Illinois; and the gamma scan of grass which is provided by the Center for Applied Isotope Studies at the University of Georgia in Athens, Georgia.

During the first half of 1983, the TLDs were read by Hazleton Environmental Sciences, Inc. (HES) of Northbrook, Illinois. Effective July 1, 1983, Teledyne Isotopes acquired all assets and business of HES and thenceforth the Nuclear Science Department of HES began operation under the name of Teledyne Isotopes Midwest Laboratory.

#### 1.2.1 Airborne Dust

The annual summary of the gross beta activities for the airborne dust samples which were collected weekly is presented in Table 1.2-1. There is no discernable difference between the average activity of the control stations and of the indicator stations as  $(L_i - L_c)$  is  $1 \text{ fCi/m}^3$  and this is less than the MDD of  $7 \text{ fCi/m}^3$ .

The average gross beta activity for all stations during 1983 was  $31 \text{ fCi/m}^3$ ; it was  $33 \text{ fCi/m}^3$  during 1982. Going back to 1976 for several years, it was 4 to 8 times greater than that for 1983. Those high values were shown to be the result of fallout from the numerous nuclear weapons tests conducted on mainland China from 1976 through 1980.

TABLE 1.2-1

## ANNUAL SUMMARY OF GROSS BETA ACTIVITY IN AIRBORNE DUST

fCi/m <sup>3</sup>					
Station No.	n	Maximum	Minimum	Average s	
<u>Data for Control Stations</u>					
1	52	82	2	32	15
5	52	66	6	29	12
Summary	2	32	29	30	3
<u>Data for Indicator Stations</u>					
9	50	65	3	31	14
15	52	69	9	31	14
17	52	69	4	29	14
21	52	60	7	31	13
Summary	4	31	29	31	1
L <sub>i</sub> - L <sub>c</sub> = 1		MDD = 7			

Due to mechanical failures, valid data were unavailable on one occasion at each of the stations except for Station 9 where valid data were unavailable on three occasions. Of these eight failures, three were due to the failure of the air pump itself, two were due to a blown fuse, and three were due to damaged air dust filters -- one of the filters was partially eaten by bees, the other two were broken in handling.

The activities of specific radionuclides detected in quarterly composites of airborne dust filters by gamma spectral analyses are summarized in Table 1.2-2 for the entire year. Only three different radionuclides were detected of which only one, Cs-137, is manmade; the Cs-137 was detected in only one sample. Several years ago during the height of the impact of the weapons tests, nine different manmade radionuclides were detected annually from a few hundred positive results.

The Cs-137 was found at a level of  $0.7 \text{ fCi/m}^3$ . Typically it has been found in one to two dozen samples each year at levels a few times greater. The maximum Lower Limit of Detection (LLD) allowed by Table 3.2-2 of the ETS is  $10 \text{ fCi/m}^3$  although an LLD of  $0.3 \text{ fCi/m}^3$  is generally achieved; the Reporting Level (RL) required by Table 3.2-3 of the ETS is  $20,000 \text{ fCi/m}^3$ . The RL for a given radionuclide in a given medium is the concentration for which it has been conservatively estimated to be equivalent to the appropriate annual dose limit of Appendix I to 10 CFR 50 for an individual when so exposed for one year.

The levels and frequencies of occurrences of the two naturally occurring radionuclides, Be-7 and K-40, are typical of those seen in previous years.

#### 1.2.2 Airborne Iodine

The charcoal cartridge used for adsorbing iodine from the atmosphere were collected weekly and analyzed for I-131 by Ge(Li) spectroscopy. I-131 was not detected in any of the samples during 1983.

The only positive measurement of I-131 attributable to plant releases during nearly 10 years of operations occurred for the sample collected on April 26, 1982 at Station 15 which is located about 0.3 miles inside the site boundary. This sample showed a level of  $37.2 \text{ fCi/m}^3$ . The maximum allowed LLD is  $70 \text{ fCi/m}^3$ ; the LLDs achieved during 1982 never exceeded  $40 \text{ fCi/m}^3$ .

During 1976, 1977 and 1978 detectable levels of I-131 were found for periods of a few weeks after the arrival of the cloud from each of the nuclear weapons tests. The highest level ever found was  $217 \text{ fCi/m}^3$  in 1977. The RL is  $900 \text{ fCi/m}^3$ .

TABLE 1.2-2

ANNUAL SUMMARY OF SPECIFIC RADIONUCLIDES  
DETECTED IN AIRBORNE DUST COMPOSITES

fCi/m <sup>3</sup>							
<u>Radionuclide</u>	<u>n</u>	<u>Max</u>	<u>Min</u>	<u>Avg</u>	<u>s</u>	<u>Li-Lc</u>	<u>MDD</u>
Control Stations							
Be-7	8	75.0	22.8	54.6	19		
K-40	0						
Cs-137	0						
Indicator Stations							
Be-7	16	91.8	27.1	60.0	19	5.4	23
K-40	1	4.8	4.8	4.8			
Cs-137	1	0.7	0.7	0.7			



### 1.2.3 Thermoluminescent Dosimeters

The nominal location of each of the TLDs by sector and by distance from the main stack in miles is provided in Table 1.2-3. Two badges are placed at each station; each badge contains five LiF chips. At the beginning of 1980, an attempt was made to establish two TLD stations in each sector (in accordance with Revision 1 to the Technical Position of the Radiological Assessment Branch of the NRC, dated November 1979), one near the site boundary and the other at a distance of about four or five miles. Suitable locations were not found in the East Sector. In addition to the locations for these two rings of TLD stations, the table provides for the locations of the control stations and the stations of special interest.

The annual summary of the on-station doses acquired by the TLDs which are required by the ETS is presented in Table 1.2-4. There is no discernable difference between the average values at the indicator and control stations.

The annual summary of the on-station doses acquired at the site boundary and at 4-5 miles is presented in Table 1.2-5. Again, there is no discernable difference between the average values at the site boundary and the 4-5 mile ring. The on-station quarterly doses acquired by the TLDs placed at Station 31 (Toombs Central School) ranged from 9.1 to 12.5 mrem with 10.1 mrem as an average.

TLDs are frequently lost due to theft and are frequently damaged by vandalism. At monthly intervals the TLD stations are checked for missing or damaged badges; replacements are provided as needed. In the 4th quarter at Stations 13, 14 and 27, both badges were missing at the end of the quarter, so no data were obtained at these locations for the 4th quarter. A total of 14 badges from 8 different stations were found to be missing during the year. To diminish the frequency of missing or damaged badges, TLDs are placed in less conspicuous places wherever this is practical.

### 1.2.4 Milk

Milk samples are collected biweekly as available at three stations. Gamma isotopic and I-131 analyses are performed on each sample. This is the sixth consecutive year for performing the gamma scans.

The locations of the milk sampling stations and the number of samples analyzed were as follows:

<u>Station</u>	<u>Sector</u>	<u>Distance</u>	<u>No</u>
State Prison	ENE	10.8 miles	25
Johnson Brothers	SW	9.1 miles	25
Williamsons	NNE	3.2 miles	17

The samples collected at all stations on January 3 and the samples collected at the State Prison and Johnson Brothers on June 20 were lost in transit to the contract lab. The cow at Williamsons became pregnant; her milk production diminished; subsequently, no milk samples were available after August 15 except for the one collected on September 26.

TABLE 1.2-3

## LOCATIONS OF TLD STATIONS

<u>Sector</u>	<u>Site Boundary</u>		<u>4-5 Miles</u>	
	<u>No.</u>	<u>Miles</u>	<u>No.</u>	<u>Miles</u>
N	19	1.9	25	5.0
NNE	26	2.5	28	4.9
NE	9	1.8	29	5.0
ENE	27	1.7	30	4.9
ESE	119	1.1	12	5.0
SE	17	1.2	11	4.3
SSE	13	1.6	10	4.7
S	126	0.9	8	4.4
SSW	14	1.1	7	4.3
SW	16	0.9	6	4.5
WSW	21	1.0	4	4.4
W	133	1.1	3	4.3
WNW	2	1.2	23	5.4
NW	18	1.1	22	4.5
NNW	20	1.7	24	4.8

## Additional TLD Stations

N	No. 31 at 8.2 miles, Toombs Central School
ENE	No. 1 at 11.3 miles, Control Station
S	No. 5 at 10.0 miles, Control Station
WNW	No. 15 at 0.8 miles, Roadside Park

TABLE 1.2-4

## ANNUAL SUMMARY OF ON-STATION DOSE ACQUIRED BY TLDs REQUIRED BY ETS

mrem/13 weeks

<u>Station No.</u>	<u>n</u>	<u>Maximum</u>	<u>Minimum</u>	<u>Average</u>	<u>s</u>
<u>Data for Control Stations</u>					
1	4	13.0	10.2	11.1	1.3
5	4	13.9	9.7	11.6	1.7
Summary	2	11.6	11.1	11.3	0.3
<u>Data for Indicator Stations</u>					
9	4	12.1	9.2	10.4	1.2
15	4	11.5	8.2	9.4	1.5
17	4	15.2	10.6	12.6	2.1
21	4	11.8	8.7	9.8	1.4
119	4	13.1	9.0	10.9	1.8
126	4	16.1	8.6	11.1	3.5
133	4	18.7	13.6	15.6	2.4
Summary	7	15.6	9.4	11.4	2.1

$$L_i - L_c = 0.1$$

$$MDD = 5.6$$



TABLE 1.2-5

ANNUAL SUMMARY OF ON-STATION DOSE ACQUIRED BY TLDs AT SITE  
BOUNDARY AND AT 4-5 MILES

mrem/13 weeks					
<u>Station No.</u>	<u>n</u>	<u>Maximum</u>	<u>Minimum</u>	<u>Average</u>	<u>s</u>
<u>4-5 Miles</u>					
25	4	10.4	7.6	9.0	1.2
28	4	11.1	8.4	9.4	1.2
29	4	17.7	12.9	15.1	2.0
30	4	17.1	12.9	14.6	1.8
12	4	11.6	8.6	10.0	1.3
11	4	14.0	10.0	11.6	1.7
10	4	11.5	8.0	9.4	1.5
8	4	10.7	7.6	8.8	1.4
7	4	10.1	6.9	8.1	1.5
6	4	13.1	9.4	11.4	1.6
4	4	9.5	7.2	8.6	1.1
3	4	12.9	9.5	10.7	1.5
23	4	13.4	10.0	11.2	1.5
22	4	13.4	9.8	11.2	1.5
24	4	11.9	8.4	9.6	1.7
Summary	15	15.1	8.1	10.6	2.1
<u>Site Boundary</u>					
19	4	12.7	9.7	10.8	1.4
26	4	12.3	9.0	10.2	1.5
9	4	12.1	9.2	10.4	1.2
27	3	11.4	7.0	9.1	2.2
119	4	13.1	9.0	10.9	1.8
17	4	15.2	10.6	12.6	2.1
13	3	11.0	9.2	10.1	0.9
126	4	16.1	8.6	11.1	3.5
14	3	11.6	10.4	10.9	0.7
16	4	12.0	8.9	10.2	1.3
21	4	11.8	8.7	9.8	1.4
133	4	18.7	13.6	15.6	2.4
2	4	12.7	9.8	10.9	1.3
18	4	13.6	9.5	11.2	2.0
20	4	13.5	9.6	10.8	1.8
Summary	15	15.6	9.1	11.0	1.5

L<sub>SB-L4-5</sub> = 0.4

MMD = 1.8

The State Prison is the control station and Williamsons is the indicator station. Johnson Brothers Dairy is a bit too far away to be considered as an indicator station: however, it is the closest location in the sector into which the wind blows most frequently.

There were no positive indications of I-131 in any of the milk samples during the year. This is the third straight year that this has occurred. Previous levels ranged from 0.095 to 88 pCi/l. All significant readings were generally attributed to the weapons tests. The LLD required by the ETS is 0.8 pCi/l; the RL is 3 pCi/l.

As usual, the gamma scans showed naturally occurring K-40 present in each sample at levels which varied between 671 and 1540 pCi/l. These levels are slightly lower than those found in previous years.

The gamma scans also showed positive indications of the fission product Cs-137 in about a quarter of the samples collected. The levels were found to be about the same as those found previously. The results in pCi/l for each station are summarized as follows:

<u>Station</u>	<u>n/n<sub>0</sub></u>	<u>Maximum</u>	<u>Minimum</u>	<u>Average</u>	<u>s</u>
Prison	2/25	7.7	6.7	7.2	0.7
Johnson Brothers	10/25	34.2	6.9	15.5	9.1
Williamsons	6/17	13.8	8.0	12.0	2.2

The ratio,  $n/n_0$ , is the number of positive results to the number of analyses performed. As usual, positive results were found more frequently and the levels were higher at Johnson Brothers. The minimum LLD required by the ETS is 15 pCi/l; in practice, however, a LLD of 7 pCi/l is usually achieved; the RL is 70 pCi/l. The positive levels found during the past five years ranged from 6.7 to 57.1 pCi/l with the average values for the stations ranging from 10.2 to 20.9 pCi/l. During preoperations, Cs-137 was measured in milk by a chemical separation technique; the levels ranged from 2 to 60 pCi/l with an average value of 19.3 pCi/l. All of these positive indications of Cs-137 in milk, those during preoperations, as well as those during operations, are attributed to the weapons tests. The quantity of Cs-137 released from operation of the plant would have to be increased by a few orders of magnitude before it could be detected in the milk samples.

The ETS require that a survey be conducted annually to determine the location of all milk animals within 3 miles of the plant stack in each of the 16 azimuthal sectors. For any of the 16 sectors in which milk animals are not found within 3 miles, the annual survey is expanded to locate the nearest milk animal within 5 miles in that sector. A milk animal is a cow or goat which is producing milk for human consumption. On May 16 and 17, the milk animal survey was conducted. The only milk producing animal found was the cow at Williamsons which is presently being sampled.

#### 1.2.5 Grass

Gamma isotopic analyses were performed on each of the grass samples collected monthly from the three sampling stations. Positive indication for several radionuclides were determined. These have been separated into four groups as follows:

- (1) Be-7 and K-40;
- (2) Cs-134 and Cs-137;
- (3) Pb-214, Bi-214; and Ra-228; and
- (4) Tl-208, Pb-212, Bi-212, and Ac-228

Only in the second group are there manmade radionuclides. Each of the radionuclides detected except for Be-7, Cs-134 and Bi-212 was found in soil samples taken at each of these plots several years ago. An annual summary of the activities of these radionuclides is provided in Table 1.2-6. It is seen that there are no discernable differences between the average values of the indicator stations and the control station.

As usual, Be-7 and K-40 were detected in every sample. The levels are on the same order of magnitude as those found previously. The overall average for Be-7 is about 50% higher than that found last year while that for K-40 is about 40% lower.

Usually Cs-137 is found in about 70% of the samples but this year it was found in all but one sample. The levels, however, were well within the range of those found in previous years.

The 17 pCi/kg wet value for the single reading of Cs-134 may be compared with the 1981 value of 15 pCi/kg wet which is the only positive reading obtained previously. The ETS requirements for LLD and RL are 80 and 1000 pCi/kg wet, respectively. During the year the LLD ranged from 10 to 41 pCi/kg wet.

Each of the radionuclides in the third and fourth groups is a primordial nuclide. The radionuclides in the third group are from the Uranium Series. Those in the fourth group are from the Thorium Series. The levels were typical of those found previously except for Bi-212. Bi-212 had not been previously detected; the detected value was about twice its LLD.

TABLE 1.2-6

ANNUAL SUMMARY OF SPECIFIC RADIONUCLIDES  
DETECTED IN GRASS

pCi/kg wet							
<u>Radionuclide</u>	<u>n</u>	<u>Max</u>	<u>Min</u>	<u>Avg</u>	<u>s</u>	<u>Li-Lc</u>	<u>MDD</u>
Control Station							
Be-7	12	4960	283	2113	1540		
K-40	12	9020	1010	5017	2538		
Cs-134	0						
Cs-137	12	913	45	211	272		
Tl-208	1	18	18	18			
Pb-212	2	78	42	60	25		
Bi-212	0						
Pb-214	8	186	24	62	52		
Bi-214	9	105	25	66	29		
Ra-226	0						
Ac-228	3	110	76	95	17		
Indicator Stations							
Be-7	22	3460	251	1730	981	-383	1183
K-40	22	8240	933	4394	2410	-623	2414
Cs-134	1	17	17	17			
Cs-137	21	432	12	95	122	-116	246
Tl-208	10	42	13	27	9	9	
Pb-212	11	105	30	62	22	2	291
Bi-212	1	281	281	281			
Pb-214	15	208	23	74	51	12	64
Bi-214	20	159	27	73	32	7	35
Ra-226	2	431	327	379	74		
Ac-228	14	251	43	126	62	31	109

The ETS requires a LLD of not greater than 25 pCi/kg wet for I-131. This limit was exceeded on eleven occasions as follows:

<u>Station</u>	<u>5</u>	<u>17</u>	<u>21</u>
July	36	31	47
August	44	52	48
September	28	34	35
December	66		36

Iodine has a strong affinity for water; the moisture content in these samples was low due to very dry weather. The wet to dry ratio for these samples averaged 2.26; it is typically two to three times higher at other times. The December samples were not received by the contract lab until two weeks after their collection.

Adequate samples were not available at Station 17 in April and December. A lot of difficulties have been encountered in obtaining adequate samples from Station 17. Besides rather poor growth due to sandy soil and scant sunshine (it is located in a wooded area), the meager crop is depleted by the grazing of deer; then dry weather further compounds the difficulty in obtaining an adequate sample. Consideration is being given to relocating this grass plot and to the growing of collards.

### 1.3 Discharges to the River

The ETS require the sampling of water, clams and sediment from River Stations 170 and 172 which are about 1 mile upstream and 2 1/2 miles downstream, respectively. The upstream station serves as the control station and the downstream station serves as the indicator station. The ETS also require the sampling of American shad from the area of the discharge structure.

The ETS require a gamma spectral analysis of each sample. This analysis is performed on only the edible portion of the fish and clam samples. A tritium analysis is also required on quarterly composites of river water for each station. All of these analyses are performed by Teledyne Isotopes, Incorporated of Westwood, New Jersey.



### 1.3.1 River Water

River water is collected using automatic sampling machines; small samples are collected at intervals which are on the order of an hour. Water thus collected is picked up monthly; quarterly composites are composed of the monthly collections.

As usual, there were no positive results for the entire year on the gamma scans of the monthly collections. Only scant results have been obtained in the past with this analysis. The only manmade radionuclide ever detected was Ce-141; this occurred only once at an indicator station in the 4th quarter of 1975.

The positive results in units of pCi/l for the tritium analysis of the quarterly composites are summarized as follows for the control and indicator stations, respectively.

<u>n</u>	<u>Max</u>	<u>Min</u>	<u>Avg</u>	<u>s</u>	<u>Li-Lc</u>	<u>MDD</u>
4	400	160	328	113		
4	420	110	265	137	-63	329

These values are typical of and within the range of those found previously.

In accordance with the ETS, a survey was conducted downstream of the plant on October 12-13 to determine if water from the Altamaha River was being used for drinking purposes. As in all previous surveys, no intakes for drinking water were observed. If river water should become used for drinking, the ETS require sampling and analyses of the drinking water.

### 1.3.2 Clams

The ETS require a semiannual sampling of asiatic clams from the two river stations; if clams become unavailable, samples of a commercially or recreationally important species of fish will be collected.

Clams were sought on three occasions during the year but sufficient quantities were not available on any of these occasions. Consequently, on May 23-24 redbreast sunfish and largemouth bass were collected, then on November 29 redear sunfish and largemouth bass were collected. The gamma spectral analyses detected K-40 and Cs-137 in each sample collected during the year and Cs-134 in the November collections at Station 172.

The levels for the naturally occurring ever-present K-40 ranged from 2.78 to 6.05 pCi/gm wet. The readings were typical of those found previously except for the maximum reading which was about 25% higher than the previous maximum found in fish; this reading was from a redbreast sunfish collected at Station 170 in May.

The levels for the fission product, Cs-134, in the redear sunfish and the largemouth bass were 0.0547 and 0.149 pCi/gm wet, respectively. The ETS require a LLD of 0.13 pCi/gm wet and a RL of 1.00 pCi/gm wet. The LLD experienced was 0.01 pCi/gm wet. Cs-134 had not been previously detected in fish samples.

The Cs-137 levels in units of pCi/gm wet for all of the fish samples are summarized as follows for the control and indicator stations, respectively:

<u>n</u>	<u>Max</u>	<u>Min</u>	<u>Avg</u>	<u>s</u>	<u>Li-Lc</u>	<u>MDD</u>
4	0.0919	0.0480	0.0675	0.0182		
4	0.310	0.0635	0.1386	0.1167	0.0711	0.3274

It is seen that there is no discernable difference between the average values at the indicator and control stations. These readings are within the range of those found previously except for the maximum value which is from a largemouth bass collected in November; the previous maximum of 0.23 pCi/gm wet was from a redbreast sunfish collected upstream during preoperations. The ETS require a LLD of 0.13 pCi/gm wet and a RL of 2.00 pCi/gm wet; generally a LLD of 0.03 pCi/gm wet is achieved.

The largemouth bass sample collected at Station 172 in November had both the highest Cs-134 and Cs-137 levels for the year. The maximum annual dose to an individual from consuming fish for a year with these concentrations would be 1.21 mrem to the liver of a teenager; it would consist of 0.47 mrem due to the Cs-134 and 0.74 mrem due to Cs-137. This calculated dose is well below the design objective of 10 mrem per year to any organ for liquid releases as specified by Appendix I to 10 CFR 50. Assumed values for the dose factors and uptakes were taken from Revision 1 of Regulatory Guide 1.109, October 1977.

Both Cs-134 and Cs-137 are usually amongst the radionuclides comprising the liquid releases. An estimate of the average concentrations of these two radionuclides in fish at the indicator station due to the 4th quarter releases was an order of magnitude below the measured levels.

In past years, radionuclides were detected in fish samples by gamma spectral analyses as follows: K-40 in nearly every sample; Co-60 in one sample during preoperations; Cs-137 in a substantial fraction of the samples; and Ra-226 in a total of 4 samples during preoperations and 2 during operations.

### 1.3.3 American Shad

Because of its commercial importance, the ETS require that American shad be collected annually during the spring spawning period. The collection was made on March 31. Naturally occurring K-40 was the only radionuclide detected in this single sample. The level was 2.64 pCi/gm wet which is about the same as that found previously. Only K-40 has been found in previous samples of American shad.

### 1.3.4 Sediment

The annual collection of sediment samples took place on May 17. The positive results of the gamma scan on each sample are presented below in units of pCi/gm dry.

<u>Radionuclide</u>	<u>Station 170</u>	<u>Station 172</u>
K-40	9.56	10.6
Cs-137	0.365	0.384
Ra-226	2.15	2.65
Th-228	1.58	1.68

The levels of each of these radionuclides are typical of those found in past years. Each of these radionuclides appears regularly in sediment samples. All are naturally occurring except for the fission product Cs-137.

### 1.4 Discharges to the Ground

As reported in previous annual reports and also by LER No. 50-321/1979-21 (including its revisions, quarterly updates and other supplements) groundwater with high tritium levels has been found to be present in two separate areas of the plant yard, namely, an area centered just south of the Condensate Storage Tank for Unit 1 (CST-1) and an area about the north side of the Unit 1 turbine building. These areas appear to be essentially unrelated to each other in that the causes of the high tritium levels are different and there appears not to be a good hydraulic connection between the two areas.

A portion of the tritiated groundwater slowly makes its way to the river via the drainage systems; the tritium levels in these continuous releases are generally a few orders of magnitude below the high levels found in the plant yard and that permitted by regulation. The offsite doses due to these releases are small.



There are three distinct water zones underlying the site; a water table, a local aquifer and a regional aquifer. Aquicludes separate and hydraulically isolate these zones from each other. The vast regional aquifer whose top is a few hundred feet below plant grade is not hydraulically connected to surface waters in the vicinity of the site. The shallow local aquifer is separated from the regional aquifer by an aquiclude which is about 100 feet thick; the top of the local aquifer is roughly 65 feet below the grade of the plant yard; it is hydraulically connected to surface waters in the plant environs. The aquiclude between the local aquifer and the water table is 40 to 50 feet thick. The water table which is charged by the percolation of precipitation through the soil is unconfined. In the plant yard the water table more or less extends from 10 to 20 feet below grade.

The water table, according to the natural terrain, will drain both in a northerly direction (toward the river) and also in an easterly (downstream) direction toward a swamp area which drains to the river. An analysis of the water levels from various shallow test holes about the plant yard shows that groundwater flow in the water table has a strong local flavor. This phenomenon is attributed to the excavations performed during construction of the plant and the field routing of water pipes and electrical conduit runs. These pipe and conduit runs are supported by compacted sand; any water introduced nearby will follow a path along the run, as this is the path of least resistance. Moreover, it is likely that some of the excavations formed pockets in the aquiclude between the water table and the local aquifer in which groundwater accumulates.

Two separate subsurface drainage ditches, whose outfalls are at about 25 feet below grade, provide a system for controlling the level of the water table. This network of subsurface ditches encircles the complex of the main plant buildings - the service, turbine, reactor, control, and radwaste buildings for each unit. Roughly 70% of this encirclement is serviced by Subsurface Ditch No. 1 (SS1) whose outfall is about midway between the intake and discharge structures. The eastern side of this encirclement is serviced by SS2 whose outfall is on the east side of the protected area.

The surface drainage system includes a network of catch basins connected by underground ditches. Runoff from the building roofs and the plant yard flow into these catch basins. The outfall for the surface drainage system in the vicinity of the discharge structure is referred to as Yard Drain No. 1 (YD1). YD2 which services the east side of the plant yard has its outfall near that for SS2. The outfall for YD3 which services the NW portion of the plant yard has its outfall from beneath warehouse No. 6; the effluent would subsequently reach the river near the intake structure. These surface ditches are separated from each other.

Groundwater samples are sent to the Center for Applied Isotope Studies (CAIS) at the University of Georgia in Athens, Georgia. A liquid scintillation detector is used to determine the tritium content. Results are usually obtained within a few weeks; LLDs of 100 pCi/l are regularly attained.

In the early fall CAIS determined in reviewing their procedures that their values for tritium in water had been in error as a result of not correcting for decay of the tritium standard. This made the results reported previously higher than they should have been -- up to 36%. The corrective action taken was to modify the computer program used to reduce the data. All results reported herein for calendar year 1983 have been corrected.

In subsequent subsections, data summaries for the year are presented for the groundwater samples taken from the locations associated with each of the two key areas and for other locations. These locations are shown on Figure 1.4-1. For each sampling location, the maximum and minimum tritium levels are presented along with an annual average value of the positive readings and the ratio of the number of positive readings to the total number of readings. The annual average was determined by averaging the quarterly averages. Other information or data associated with the particular area may also be presented as warranted.

There have been no ETS requirements for the sampling of groundwater since 1978, at the time when HNP-2 began operation. The high tritium levels being found in groundwater samples onsite have little impact offsite. At a meeting on December 19, 1983 with NRC Region II, it was agreed that the reporting in the annual environmental surveillance report of onsite tritium levels in groundwater was inappropriate and that such reporting in this annual report was to stop after the report for calendar year 1983. The reporting to the NRC is to continue, as long as appropriate, by other means.

#### 1.4.1 CST-1 Area

The CST-1 area is centered about test hole Pl6 which is located about 5 yards south of the CST-1 dyke and several yards east of the condensate transfer pumps. A pool of tritiated water appears to be trapped in a pocket of the aquiclude which underlies this area. The source of the tritium in this area is the leakage from the condensate transfer pumps and associated plumbing which occurred in prior years as has been previously reported.

Sampling locations affected are: test holes N7A, Tl0 through Tl6 and Tl8; outfalls SS2 and YD2; and catch basin PY24. Test hole N7A taps the local aquifer; all other locations tap the water table. A data summary of the tritium levels for each of these locations is presented in Table 1.4-1.

Over the past five years the tritium levels in groundwater samples from test hole Pl6 have exceeded the RL ( $3.0 \text{ E4 pCi/l}$ ). Attempts were made to sample test hole Pl6 monthly; each time the test hole was found to be dry. Catch basins PY12 and PY16 were also found to be dry in each attempt at sampling.

The tritium levels in the samples from the test holes during 1983 were generally substantially lower than those found during 1982. The levels at test hole Tl8 have been reportable for four years. The single sample obtained at this test hole on June 7 had a reading of  $6.05 \text{ E3 pCi/l}$ ; this reading is about 20 times less than expected. This test hole was found to be dry on other monthly attempts to sample it.

TABLE 1.4-1

ANNUAL SUMMARY OF TITANIUM LEVELS IN GROUNDWATER  
SAMPLES FROM CST-1 AREA

<u>Location</u>	<u>n/n<sub>o</sub></u>	<u>pCi/l</u>		
		<u>Max</u>	<u>Min</u>	<u>Avg</u>
N7A	2/2	4.41 E3	4.15 E3	4.28 E3
PY24	2/2	1.68 E4	1.07 E4	1.38 E4
SS2	14/17	8.20 E3	< 9.20 E1	1.51 E3
T10	12/12	1.34 E4	4.09 E3	7.80 E3
T11	11/11	9.70 E3	1.62 E3	4.29 E3
T12	13/13	2.37 E4	3.77 E3	1.34 E4
T13	6/6	8.30 E3	8.68 E2	4.93 E3
T14	3/3	2.24 E3	1.24 E3	1.83 E3
T15	3/3	1.18 E3	8.09 E2	9.62 E2
T16	5/5	1.23 E3	4.33 E2	7.77 E2
T18	1/1	6.05 E3	6.05 E3	6.05 E3
YD2	4/5	3.70 E2	< 1.00 E2	2.82 E2

Levels of 1.07 and 1.68 E4 pCi/l were found in the two samples taken at catch basin PY24. Levels of this order had on occasion been found at this location in past years.

#### 1.4.2 Area About the North Side of the Unit 1 Turbine Building

An early cause of the high tritium levels in this area was eliminated in March 1979 as has been previously reported. It was discovered that process water had been entering the ground a few yards from test hole P17B through an open ended half-inch line buried to a depth of about 8 inches. Sampling locations which became affected by this extraneous source of tritium include: test holes N9B, P15B, P17A, P17B, T2, T3, T4 and T8; and outfall SS1. Test hole P17A taps the local aquifer, all other locations tap the water table. A data summary of the tritium levels for each of these locations is presented in Table 1.4-2.

Judging by the rise and subsequent decline of readings in succession at P17B, T4 and N9B and by the results of dye tests, the main body of this tritiated water which had entered the ground near P17B appeared to have migrated to the vicinity of the NE corner of the Unit 1 turbine building. Test Hole N9B is located at this corner. The readings at P17B and T4 subsequently dropped below the RL and are not of current interest.

The reported readings at N9B reached a preliminary peak of 2.08 E5 pCi/l in May of 1980 then gradually decreased to 8.17 E4 pCi/l in June of 1981. Increases followed, a level of 1.15 E5 pCi/l was reached in December 1981. Increases became rapid during the early months of 1982; a new maximum of 4.80 E5 pCi/l was reported for the April 21 collection. Increases were also rapid at test hole T3 which is located a few yards west of N9B. These rapid increases triggered an investigation which led to the discovery in early May of 1982 of another extraneous tritium source.

This source, as previously reported, was the leakage from the Unit 1 precoat tank of the condensate polisher system which is located near the north wall of the turbine building on the 130-foot level. Spillage to the floor flowed to the north wall and then under the wall panel to the outside of the building; it then collected in the pipe chase for the auxiliary steam boiler. Open joints between the pipe chase and the turbine building basement wall allowed water to enter the ground and flow along the basement wall. This likely provided an easy path to the area of N9B and T3. The open portion of the turbine building north wall which provided this path to the outside of the building was promptly sealed.

A sump pump removes the water from the pipe chase to the drain lines of the turbine building roof which joins the yard drain system further downstream at manhole PY1. Subsequently, this portion of the yard drain system passes through several catch basins to outfall YD3 which emerges from under Warehouse No. 6, and then to an open ditch leading to a culvert from which discharge is made near the river. Samples are being taken regularly from PY5 which is the first catch basin downstream of manhole PY1 and from outfall YD3, as well as from the pipe chase; the results are included in Table 1.4-2.

TABLE 1.4-2

ANNUAL SUMMARY OF TRITIUM LEVELS IN  
GROUNDWATER SAMPLES FROM AREA ABOUT THE NORTH SIDE  
OF THE UNIT 1 TURBINE BUILDING

pCi/l

<u>Location</u>	<u>n/n<sub>o</sub></u>	<u>Max</u>	<u>Min</u>	<u>Avg</u>
N9B	26/26	3.69 E5	1.53 E5	2.80 E5
P15B	20/20	2.19 E4	1.06 E4	1.65 E4
P17A	2/2	2.54 E2	2.43 E2	2.49 E2
P17B	3/3	5.72 E3	2.78 E3	4.73 E3
Pipe Chase	35/35	3.05 E4	2.91 E2	3.50 E3
PY5	26/28	2.94 E4	< 1.00 E2	9.05 E3
SS1	26/26	4.82 E3	2.85 E2	2.64 E3
T2	22/22	1.75 E4	9.54 E2	2.77 E3
T3	27/27	8.40 E4	1.34 E3	4.03 E4
T4	5/5	4.90 E3	9.58 E2	2.77 E3
T8	8/8	5.94 E3	2.14 E3	3.15 E3
YD3	9/12	3.29 E4	< 1.00 E2	6.55 E3



The levels at N9B were fairly steady during 1983; the average level of  $2.80 \text{ E5 pCi/l}$  was about three quarters of that reported for the previous year; the levels continued to be reportable each quarter as they have been since the first quarter of 1979. The levels at T3 decreased during the first half of the year but rose during the latter half of the year; the average level of  $4.03 \text{ E4 pCi/l}$  decreased by almost a factor of 2 to that reported for the previous year; except for the first and second quarter of 1983, the levels have been reportable since the second quarter of 1980.

It was noted in last year's report that the tritium levels during 1982 at test hole P15B, which is on the west side of the Unit 1 turbine building, had averaged more than 2.5 times those in 1981. The annual average value for 1983 of  $1.65 \text{ E4 pCi/l}$  is about 4.8 times that reported for 1982. There was a step increase in the levels early in the year, then each quarter the levels diminished slightly. A gamma scan was run on a sample collected on May 18; there was no gamma activity above background.

The levels at T2 were fairly constant throughout the year except for the reading of  $1.75 \text{ E4 pCi/l}$  for the sample collected on March 15. This reading was more than three times any found previously at this location. This reading is out of line with all others taken at this location; the next highest reading during 1983 was  $2.20 \text{ E3 pCi/l}$ . The annual average reading of  $2.77 \text{ E3 pCi/l}$  was about the same as that reported for the previous year.

The tritium levels in the samples taken from the pipe chase and catch basin PY5 were found to be erratic ranging over two orders of magnitude with sudden drastic changes, up or down, in the readings. For the pipe chase, both the maximum value of  $2.94 \text{ E4 pCi/l}$  and the annual average value of  $3.50 \text{ E3 pCi/l}$  were nearly an order of magnitude less than those reported for the previous year. For catch basin PY5, the maximum value of  $2.94 \text{ E4 pCi/l}$  was less than half of that reported for the previous year while the annual average value of  $2.64 \text{ E3 pCi/l}$  was about 40% less than that reported for the previous year.

The readings on June 7 at YD3 were  $3.29 \text{ E4 pCi/l}$ ; this reading is out of line with any other taken at this location as it is 4.7 times higher than the next highest reading. Nevertheless, this established a new maximum level for a sample collected at the outfall of one of the drainage systems; it also helped establish a new maximum quarterly average of  $1.67 \text{ E4 pCi/l}$ . The readings at outfalls are important because they measure releases to the public. The previous maxima were set last year at SS1 where the reading on December 12 was  $1.12 \text{ E4 pCi/l}$  and the 4th quarter average was  $6.55 \text{ E3 pCi/l}$ . The significant increase in 1983 is of concern. The new individual maximum reading is a factor of more than 90 below the MPC for tritium in unrestricted areas as given in 10 CFR 20. The new maximum quarterly average is equivalent to a dose of 0.43 mrem to the total body. This dose estimate is very conservative because it assumes that some individual obtains all of his drinking water directly from the outfall which is generally inaccessible. The quarterly dose limit resulting from liquid releases as established by Appendix I to 10 CFR 50 is 1.5 mrem. The average annual concentration of tritium for drinking water in community water systems is required to be less than  $2 \text{ E4 pCi/l}$  according to EPA's National Interim Primary Drinking Water Regulations, 40 CFR 141.16.

Inspections of the exterior walls of the turbine buildings for both units were made to determine if there were pathways which would allow liquids to escape the buildings and enter the groundwater table. On June 29, all exterior walls except those in the condensate demineralizer/ion exchange tank rooms were visually inspected. In October the condensate demineralizer pits were inspected. Yet to be inspected are the polishing demineralizer backwash collection tank room and the clean radwaste (CRW) and dirty radwaste (DRW) sumps below the 112 foot elevation.

On the June 29 inspection, one penetration through the exterior walls, a 6" diameter sleeve at elevation 112' 09", was found to have calcite deposits on the concrete wall directly below the sleeve. This indicates groundwater had leaked into the building between the sleeve and the concrete. This penetration goes through a 3" expansion joint and the Unit 2 radwaste building exterior wall. This penetration and other exterior wall penetrations which were inspected are higher than known spills for those areas.

On the October inspection, several of the condensate demineralizer/ion exchange tank rooms were found to have cracks in their exterior walls and several of the pits had water stains on the walls indicating the height of previous floods which had occurred. The findings indicative of potential or actual pathways to the groundwater table were as follows:

#### Unit 1

Vessel 1A - a fine crack in the northeast corner running the height of the corner, water stains on the walls to a height of approximately one foot;

Vessel 1B - a thin crack extending from the northeast upper corner to the bottom of the north wall - calcite deposits extending the length of the crack indicated inleakage, water stains on the walls to the height of the condensate demineralizer valve nest penetrations;

Vessels 1C, 1D and 1G - no pertinent cracks, standing water to a depth of one foot or so.

#### Unit 2

Vessel 2A - no pertinent cracks and no water stains on the walls;

Vessel 2B - two cracks on the south wall, one extending from the floor to a height of 12 feet, the other from the floor to halfway up the wall, both had calcite deposits, no water stains on the walls;

Vessel 2C - a crack on the south wall extended from the floor to approximately 10 feet, no water stains on the walls;

Vessel 2D - no cracks and no water stains on the walls;

Vessel 2G - no pertinent cracks, standing water to a depth of one foot.

All of the pits inspected contain floor drains which should allow any standing water to flow to the turbine building floor drain sumps. The drains for Vessels 1C, 1D, 1G and 2G were found to be clogged; attempts to unclog them at that time were unsuccessful.

It might be noted that due to the penetration which runs between the pits and the condensate demineralizer valve nest, no flooding will occur above the height of the penetrations which are not sealed. These penetrations are located approximately two feet from the floor of each pit allowing only two feet of standing water in the pits.

Actions to be taken include: the sealing of all pertinent cracks in the exterior walls of the condensate demineralizer/ion exchange tank rooms with an elastic epoxy material, and inspection of the exterior walls in the polishing demineralizer backwash collection tank room and the CRW and DRW sumps below the 112 foot level.

#### 1.4.3 Other Locations and Other Results

Tritium contamination of a lesser degree was found in some of the groundwater samples at most of the other locations. The causes of the contamination at these locations generally differed from those for the two key areas. A data summary of the tritium levels for each of these locations is presented in Table 1.4-3. All of these locations tap the water table except for test hole P15A which taps the local aquifer. The levels were generally lower in 1983 than those reported previously.



TABLE 1.4-3

ANNUAL SUMMARY OF TRITIUM LEVELS IN GROUNDWATER  
SAMPLES FROM OTHER AREAS

pCi/l				
<u>Location</u>	<u>n/n<sub>o</sub></u>	<u>Max.</u>	<u>Min.</u>	<u>Avg.</u>
A2	2/2	1.21 E3	3.75 E2	7.93 E2
N2B	3/3	6.44 E2	2.08 E2	4.59 E2
N3B	2/5	1.92 E2	< 1.00 E2	1.56 E2
N8B	3/3	5.34 E2	2.28 E2	3.33 E2
N10B	3/3	1.05 E3	6.60 E2	8.25 E2
P13B	1/4	1.01 E2	< 1.00 E2	1.01 E2
P15A	0/1	< 8.80 E1	< 8.80 E1	
T6	0/1	< 1.20 E2	< 1.20 E2	
T7	1/1	1.29 E2	1.29 E2	1.29 E2
YD1	8/9	3.06 E3	< 1.00 E2	1.36 E3

### 1.5 Crosscheck Program

Laboratories performing the analyses required by the radiological environmental monitoring program as delineated in Table 3.2-1 of the ETS participate in EPA's Environmental Radioactivity Laboratory Intercomparison Studies (Crosscheck) Program conducted by the Environmental Monitoring and Support Laboratory in Las Vegas, Nevada or in an equivalent program. Not all of the sample media/analyses combinations listed in the ETS are covered by the Crosscheck Program. Reported herein are the results of relevant participation in the Crosscheck Program by these laboratories. Relevant participation is considered to consist of those analyses for sample media covered by the EPA Crosscheck Program which are the same as those required by the ETS to be a part of the radiological environmental monitoring program. HNP conducted the gross beta analysis of air filters; all other relevant media/analysis combinations were conducted by Teledyne. Because of the time lag involved in obtaining results from the EPA and the subsequent reporting of these results by the contract laboratories, not all of the 1983 results were available. The results reported herein also include the 1982 results which were not available last year.

Any results of determinations in the Crosscheck Program for which disagreement can be established using the NRC's "Criteria for Comparing Analytical Measurements" as described in Attachment 1, are investigated to determine the cause of the disagreement. Corrective actions are taken as warranted. The results of any such investigations and corrective actions are reported in this section.

Since all of the results reported herein are presented in the same tabular format, an explanation of the column headings is provided. "Date" means the collection date given by the EPA. "Known" refers to the EPA known value  $\pm$  one standard deviation, s. "Result" is the average value measured by the laboratory  $\pm$  experimental s. "Resolution" is determined by dividing the known value by its s value. "Ratio" equals the "result" (value determined by the laboratory) divided by the "known" (value determined by EPA). An explanation would have been provided in the text had any of the comparisons shown "Disagreement". It should be noted that whenever the EPA known value is zero or the laboratory determined result is a "less than" value, a comparison by the NRC criteria cannot be made since the ratio cannot be determined.

The results of the gross beta and Cs-137 analyses of air filters are given in Table 1.5-1. Listed in Table 1.5-2 are the results of the I-131 and gamma analyses of milk samples. Table 1.5-3 presents the results of the gamma and tritium analyses of water. Shown in Table 1.5-4 are the results of gamma analyses of food samples. All comparisons show agreement with known values.

TABLE 1.5-1

## CROSSCHECK PROGRAM RESULTS FOR AIR FILTERS

pCi/filter

<u>Date</u>	<u>Known</u>	<u>Result</u>	<u>Resolution</u>	<u>Ratio</u>
Gross Beta				
11/26/82	59 + 5	50.0 + 2.1	11.8	0.85
3/25/83	68 + 5	55.0 + 0.6	7.8	0.80
8/26/83	36 + 5	31.0 + 1.0	4.1	0.86
Cs-137				
11/26/82	27 + 5	24 + 3	5.4	0.88
3/25/83	27 + 5	26 + 1	5.4	0.96
8/26/83	15 + 5	12 + 1	3.0	0.80

TABLE 1.5-2

## CROSSCHECK PROGRAM RESULTS FOR MILK SAMPLES

pCi/l				
<u>Date</u>	<u>Known</u>	<u>Result</u>	<u>Resolution</u>	<u>Ratio</u>
I-131				
10/22/82	42 + 6	40 + 5	7	0.95
2/25/83	54.5 + 6.0	41 + 5	9.08	0.75
6/10/83	30 + 6	18 + 0.7	5.0	0.60
Cs-137				
10/22/82	34 + 5	40 + 5	6.8	1.18
2/25/83	25.6 + 5	27.3 + 4	5.12	1.07
6/10/83	47.0 + 5	55 + 3.8	9.4	1.17
Ba-140				
10/22/82	0.0	< 10		
2/25/83	0.0	< 8		

TABLE 1.5-3

## CROSSCHECK PROGRAM RESULTS FOR WATER SAMPLES

pCi/l				
<u>Date</u>	<u>Known</u>	<u>Result</u>	<u>Resolution</u>	<u>Ratio</u>
Cr-51				
2/04/83	45 $\pm$ 5	< 90	9	
6/03/83	60 $\pm$ 5	< 53	12	
10/07/83	51 $\pm$ 5	< 87	10.2	
Co-60				
2/04/83	22 $\pm$ 5	22 $\pm$ 3	4.4	1.00
6/03/83	13 $\pm$ 5	14 $\pm$ 1	2.6	1.08
10/07/83	19 $\pm$ 5	21 $\pm$ 2	3.8	1.11
Zn-65				
2/04/83	21 $\pm$ 5	34 $\pm$ 5	4.2	1.62
6/03/83	36 $\pm$ 5	40 $\pm$ 3	7.2	1.11
10/07/83	40 $\pm$ 5	47 $\pm$ 4	8.0	1.18
Ru-106				
2/04/83	48 $\pm$ 5	< 57	9.6	
6/03/83	40 $\pm$ 5	34 $\pm$ 7	8.0	0.85
10/07/83	52 $\pm$ 5	< 50	10.4	
Cs-134				
2/04/83	20 $\pm$ 5	19 $\pm$ 2	4	0.95
6/03/83	47 $\pm$ 5	45 $\pm$ 2	9.4	0.96
10/07/83	15 $\pm$ 5	14 $\pm$ 1	3.0	0.93
Cs-137				
2/04/83	19 $\pm$ 5	21 $\pm$ 2	3.8	1.11
6/03/83	26 $\pm$ 5	29 $\pm$ 2	5.2	1.12
10/07/83	22 $\pm$ 5	25 $\pm$ 5	4.4	1.14
H-3				
12/10/82	1990 $\pm$ 345	1953 $\pm$ 46	5.77	0.98
2/11/83	2560 $\pm$ 353	2473 $\pm$ 55	7.25	0.97
4/08/83	3330 $\pm$ 362	3210 $\pm$ 72	9.20	0.96
6/10/83	1529 $\pm$ 337	1523 $\pm$ 23	4.54	1.00
10/14/83	1210 $\pm$ 329	1260 $\pm$ 61	3.68	1.05

TABLE 1.5-4

## CROSSCHECK PROGRAM RESULTS FOR FOOD SAMPLES

pCi/kg

<u>Date</u>	<u>Known</u>	<u>Result</u>	<u>Resolution</u>	<u>Ratio</u>
I-131				
11/05/82	25 + 6	30 + 1	4.2	1.2
03/04/83	36.9 ± 6.0	36.0 ± 4.6	6.2	1.0
Cs-137				
11/05/82	27 + 5	42 + 3	5.4	1.6
03/04/83	31.3 ± 5	38.3 ± 0.6	6.3	1.2
Ba-140				
11/05/82	0 + 0	< 10		
03/04/83	0 ± 0	< 8		



## ATTACHMENT 1

### Criteria for Comparing Analytical Measurements

This attachment provides criteria for comparing results of capability tests and verification measurements. The criteria are based on an empirical relationship which combines prior experience and the accuracy needs of this program.

In these criteria, the judgement limits are variable in relation to the comparison of the Reference laboratory's value to its associated one sigma uncertainty. As this comparison, referred to as "Resolution" increases, the acceptability of a licensee's measurement should be more selective. Conversely, poorer agreement should be considered acceptable as the resolution decreases. The values in the ratio criteria may be rounded to fewer significant figures to maintain statistical consistency with the number of significant figures reported by the Reference Laboratory, unless such rounding will result in a narrowed category of acceptance. The acceptance category reported will be the narrowest into which the ratio fits for the resolution being used.

#### RESOLUTION

#### RATIO + LICENSEE VALUE/REFERENCE VALUE

	<u>Agreement</u>	<u>Possible Agreement "A"</u>	<u>Possible Agreement "B"</u>
< 3	No Comparison	No Comparison	No Comparison
≥ 3 and < 4	0.4 - 2.5	0.3 - 3.0	No Comparison
≥ 4 and < 8	0.5 - 2.0	0.4 - 2.5	0.3 - 3.0
≥ 8 and < 16	0.6 - 1.67	0.5 - 2.0	0.4 - 2.5
≥ 16 and < 51	0.75 - 1.33	0.6 - 1.67	0.5 - 2.0
≥ 51 and < 200	0.80 - 1.25	0.75 - 1.33	0.6 - 1.67
≥ 200	0.85 - 1.18	0.80 - 1.25	0.75 - 1.33

"A" criteria are applied to the following analyses:

Gamma spectrometry where principal gamma energy used for identification is greater than 250 keV.

Tritium analyses of liquid samples

"B" criteria are applied to the following analyses:

Gamma spectrometry where principal gamma energy used for identification is less than 250 keV.

Sr-89 and Sr-90 determination.

Gross beta where samples are counted on the same date using the same reference nuclide.

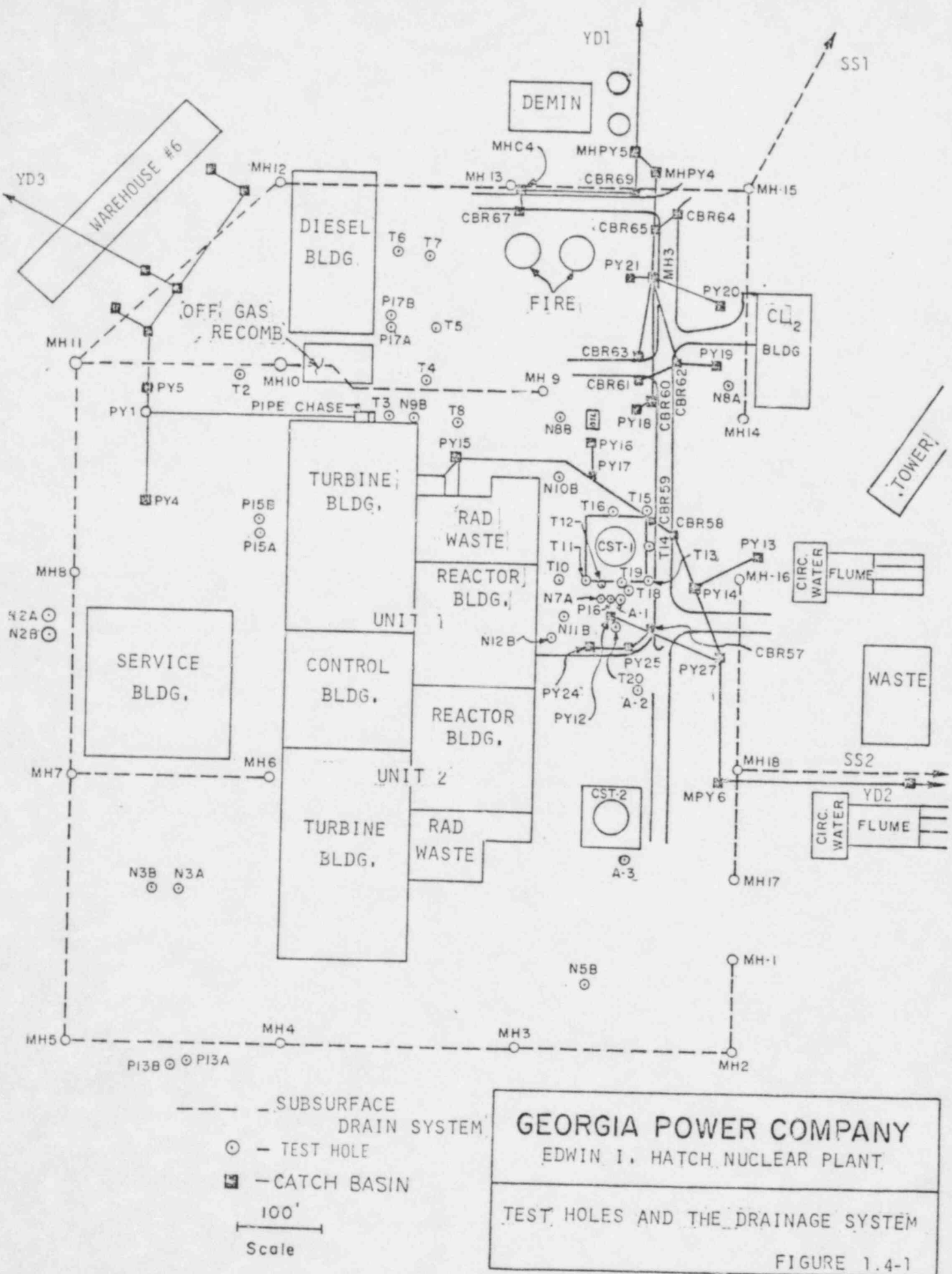
## 1.6 Conclusions

This chapter has shown the licensee's conformance with the radiological portions of the ETS. It has shown that all data were carefully examined. A summary, an interpretation and an evaluation (where warranted) of the results of the laboratory analyses for each type sample collected have been presented.

No measurable radiological impact upon the environment as a consequence of discharges to the atmosphere nor to the river was established.

There continues to be problems with high tritium levels in some of the groundwater samples taken at onsite locations; the environmental impact continues to be small.

The relevant comparisons of the analytical measurements made by HNP and contract laboratories with those made by EPA in the Crosscheck Program showed no disagreements.



HNP  
ANNUAL REPORT

CHAPTER 2

METEOROLOGICAL MONITORING

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
2.1	<u>INTRODUCTION</u>	2-1
2.2	<u>1983 DATA</u>	2-1
2.2.1	DATA RECOVERY	2-1
2.2.2	WIND ROSES	2-1
2.2.3	TEMPERATURE DATA	2-1
2.2.4	JOINT FREQUENCY TABLES	2-2
2.2.5	PRECIPITATION	2-2

HNP  
ANNUAL REPORT

CHAPTER 2

METEOROLOGICAL MONITORING

LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Page</u>
2.2-1	DATA RECOVERY - 1983	2-3
2.2-2	JOINT FREQUENCY TABLE WIND SPEED AND WIND DIRECTION 23m vs DELTA TEMPERATURE 46m - 10m (1/1/83- 4/30/83)	2-4
2.2-3	JOINT FREQUENCY TABLE WIND SPEED AND WIND DIRECTION 46m vs DELTA TEMPERATURE 46m - 10m (1/1/83- 4/30/83)	2-12
2.2-4	JOINT FREQUENCY TABLE WIND SPEED AND WIND DIRECTION 10m vs DELTA TEMPERATURE 60m - 10m (5/1/83 - 12/31/83)	2-20
2.2-5	JOINT FREQUENCY TABLE WIND SPEED AND WIND DIRECTION 60m vs DELTA TEMPERATURE 60m - 10m (5/1/83 - 12/31/83)	2-28
2.2-6	JOINT FREQUENCY TABLE WIND SPEED AND WIND DIRECTION 100m vs DELTA TEMPERATURE 100m - 10m (5/1/83 - 12/31/83)	2-36
2.2-7	MONTHLY AND ANNUAL PRECIPITATION - 1983	2-44

HNP  
ANNUAL REPORT

CHAPTER 2

METEOROLOGICAL MONITORING

LIST OF FIGURES

<u>Figure</u>	<u>Title</u>
2.2-1	10/23m WIND ROSE (1/1/83 - 12/31/83)
2.2-2	23m WIND ROSE (1/1/83 - 3/31/83)
2.2-3	10/23m WIND ROSE (4/1/83 - 6/30/83)
2.2-4	10m WIND ROSE (7/1/83 - 9/30/83)
2.2-5	10m WIND ROSE (10/1/83 - 12/31/83)
2.2-6	60/46m WIND ROSE (1/1/83 - 12/31/83)
2.2-7	46m WIND ROSE (1/1/83 - 3/31/83)
2.2-8	60/46m WIND ROSE (4/1/83 - 6/30/83)
2.2-9	60m WIND ROSE (7/1/83 - 9/30/83)
2.2-10	60m WIND ROSE (10/1/83 - 12/31/83)
2.2-11	100m WIND ROSE (5/1/83 - 12/31/83)
2.2-12	100m WIND ROSE (7/1/83 - 9/30/83)
2.2-13	100m WIND ROSE (10/1/83 - 12/31/83)
2.2-14	AMBIENT TEMPERATURE - 1983
2.2-15	DEW POINT TEMPERATURE - 1983



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2. METEOROLOGICAL MONITORING

2.1 Introduction

During 1983, many changes occurred regarding the Plant Hatch meteorological tower and its subsequent data collection program. In April a new 100m meteorological tower was put into operation. This tower has three levels: 10m, 60m, and 100m. Data collection continued through April using the old tower now designated as "backup" tower. Two levels of data were collected at the 23m and 46m levels. For the purposes of running wind roses, data from both towers were combined (10m and 23m, 46m and 60m). However, due to the differences in elevation in delta-temperature between the two sites, the tables for different portions of the year could not be readily combined.

2.2 1983 Data

2.2.1 Data Recovery

Data recovery for all parameters was quite good for the year considering all of the changes made. For individual parameters, data recovery averaged about 96% with composite totals averaging about 94% for the lower levels and 87% for the upper levels (Table 2.2-1).

2.2.2 Wind Roses

The wind roses (Figure 2.2-1 through 2.2-13) agree quite well between levels both annually and seasonally. There are some differences between the 100m level and the lower two levels. This can be attributed to the different time periods of the 100m wind roses versus the 10m and 60m levels. A comparison of the 1983 wind roses with previous years shows some significant differences particularly when compared with 1982. There were many more hours of northwest winds and less hours of northeast winds in 1983 compared to 1982 data. These changes can be attributed to normal year-to-year climatic variations.

2.2.3 Temperature Data

The temperature data (Figures 2.2-14 and 2.2-15) show good agreement with previous years. Overall, both the ambient and dew point temperatures were somewhat cooler than in previous years. This was particularly true during November and December when temperatures across the country were quite cold. The temperatures during the summer months were considered to be above normal in the eastern U.S. Temperatures at Plant Hatch were lower than some previous years. This may be attributed to local conditions related to the moving of the meteorological equipment.

#### 2.2.4 Joint Frequency Tables

The joint frequency tables (Tables 2.2-2 through 2.2-6) agree very well with previous years. The table below shows joint frequency data for the last five years using wind speed and direction 46m vs delta temperature 46-10m. With the installation of the new meteorological tower during 1983 the level used in the table has changed to wind speed and direction 60m vs delta temperature 60-10m beginning May 1, 1983.

#### PLANT HATCH STABILITY CLASSIFICATION

Stability Group	% Stability Year					5- Year Average
	1983	1982	1981	1980	1979	
A	14.7	16.2	21.7	25.2	19.5	19.5
B	5.2	3.8	4.6	3.0	4.0	4.1
C	3.8	2.3	2.0	1.2	2.2	2.3
D	21.9	20.8	19.0	14.2	20.7	19.3
E	33.8	34.3	29.1	31.3	27.2	31.1
F	11.3	14.8	11.7	13.3	13.6	12.9
G	9.3	7.8	11.9	11.8	12.8	10.4
TOTAL HOURS	7468	7725	7944	8361	7320	

In 1983, the changing of the tower location has made little difference. With the increased difference between delta temperature levels one would expect to see less unstable and stable hours and more neutral hours during coming years. This would be caused by a higher rate of surface heating during the day and cooling at night at the 10m level but a small relative difference in ambient temperature between the 46m and 60m levels. The additional height of normalization will cause more hours to be categorized as neutral than in the past.

#### 2.2.5 Precipitation

The precipitation total for 1983 was about 35 inches (Table 2.2-7). While this is still considerably below the climatic normal of 45 inches, it seems reasonable considering the dry conditions experienced in much of the eastern U.S. during the summer and early fall months.

TABLE 2.2-1

## DATA RECOVERY - 1983

<u>Parameter</u>	<u>Recovery (percent)</u>
Wind Speed 10m <sup>+</sup>	98.2
Wind Direction 10m <sup>+</sup>	99.5
Wind Speed 60m*	95.7
Wind Direction 60m*	89.2
Wind Speed 100m <sup>++</sup>	95.4
Wind Direction 100m <sup>++</sup>	93.0
Delta Temperature 60-10m*	95.8
Delta Temperature 100-10m <sup>++</sup>	93.5
Temperature 10m	99.0
Dew Point Temperature 10m	97.9
Precipitation 2m	99.6
<u>Composite</u>	
Wind speed and direction 10m <sup>+</sup> , delta temperature 60-10m*	94.2
Wind speed and direction 60m* delta temperature 60-10m*	85.3
Wind speed and direction 100m <sup>++</sup> , delta temperature 100-10m <sup>++</sup>	87.7

<sup>+</sup>23m 1/1/83 - 4/30/83

\*46m 1/1/83 - 4/30/83

<sup>++</sup>Operational 5/1/83 - 12/31/83

TABLE 2.2-2

JOINT FREQUENCY TABLE WIND SPEED AND  
WIND DIRECTION 23m vs DELTA TEMPERATURE  
46m - 10m (1/1/83 - 4/30/83)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
PERIOD OF RECORD = 83010101-83043024  
STABILITY CLASS: A DT/DZ  
ELEVATION: SPEED:SPD 1 DIRECTION:DIR 1 LAPSE:DT 1

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	2	3	2	0	0	7
NNE	1	0	2	0	0	0	3
NE	0	0	0	0	0	0	0
ENE	0	0	2	0	0	0	2
E	3	13	15	4	1	0	36
ESE	3	17	10	0	0	0	30
SE	1	12	8	3	1	0	25
SSE	0	19	20	8	0	0	47
S	2	21	12	1	0	0	36
SSW	2	16	7	1	0	0	26
SW	2	20	9	2	3	0	36
WSW	1	7	4	2	0	0	14
W	2	14	14	6	0	0	36
WNW	3	29	70	28	0	0	130
NW	1	14	71	5	0	0	91
NNW	0	3	13	7	1	0	24
TOTAL	21	187	260	69	6	0	543

PERIODS OF CALM(HOURS): 10  
VARIABLE DIRECTION 17  
HOURS OF MISSING DATA: 93

TABLE 2.2-2 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83010101-83043024  
 STABILITY CLASS: B DT/DZ  
 ELEVATION: SPEED:SPD 1 DIRECTION:DIR 1 LAPSE:DT 1

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	0	1	0	0	1
NNE	0	0	0	0	0	0	0
NE	0	0	0	0	0	0	0
ENE	1	1	0	0	0	0	2
E	0	4	10	4	0	0	18
ESE	2	4	4	0	0	0	10
SE	1	1	4	2	0	0	8
SSE	0	3	4	1	0	0	8
S	1	2	2	0	0	0	5
SSW	0	2	0	0	0	0	2
SW	2	3	1	1	0	0	7
WSW	2	1	2	2	0	0	7
W	2	3	5	2	0	0	12
WNW	0	11	10	4	0	0	25
NW	1	4	5	1	0	0	11
NNW	0	0	2	0	0	0	2
TOTAL	12	39	49	18	0	0	118

PERIODS OF CALM(HOURS): 10  
 VARIABLE DIRECTION 3  
 HOURS OF MISSING DATA: 93

TABLE 2.2-2 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83010101-83043024  
 STABILITY CLASS: C DT/DZ  
 ELEVATION: SPEED:SPD 1 DIRECTION:DIR 1 LAPSE:DT 1

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	1	0	1	0	0	0	2
NNE	0	0	1	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	2	2	2	0	0	0	6
SE	1	1	0	0	0	0	2
SSE	1	3	3	1	0	0	8
S	0	0	1	0	0	0	1
SSW	2	0	0	0	0	0	2
SW	2	2	1	1	0	0	6
WSW	0	0	0	0	0	0	0
W	1	0	0	1	0	0	2
WNW	0	4	1	3	0	0	8
NW	0	2	3	1	2	0	8
NNW	0	0	2	0	0	0	2
TOTAL	10	16	15	7	2	0	50

PERIODS OF CALM(HOURS): 10  
 VARIABLE DIRECTION 1  
 HOURS OF MISSING DATA: 93



TABLE 2.2-2 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83010101-83043024  
 STABILITY CLASS: D DT/DZ  
 ELEVATION: SPEED:SPD 1 DIRECTION:DIR 1 LAPSE:DT 1

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	2	4	0	0	0	6
NNE	0	1	3	0	0	0	4
NE	0	1	5	2	0	0	8
ENE	2	2	8	3	0	0	16
E	5	19	75	17	0	0	116
ESE	7	30	17	1	0	0	55
SE	2	17	17	3	0	0	40
SSE	7	23	25	10	1	0	66
S	8	11	3	1	0	0	23
SSW	3	10	3	0	0	0	16
SW	5	9	4	1	0	0	19
WSW	2	8	12	3	1	0	26
W	1	12	16	2	0	0	31
WNW	0	18	28	4	0	0	50
NW	3	20	63	8	0	0	94
NNW	0	6	24	15	0	0	45
TOTAL	45	189	307	70	2	0	615

PERIODS OF CALM(HOURS): 10

VARIABLE DIRECTION 3

HOURS OF MISSING DATA: 93

TABLE 2.2-2 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83010101-83043024  
 STABILITY CLASS: E DT/DZ  
 ELEVATION: SPEED:SPD 1 DIRECTION:DIR 1 LAPSE:DT 1

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	1	5	8	0	0	0	14
NNE	1	2	8	0	0	0	11
NE	1	4	9	1	0	0	15
ENE	1	5	16	11	1	0	34
E	3	25	28	4	0	0	60
ESE	14	31	12	0	0	0	57
SE	11	38	11	1	0	0	61
SSE	13	47	13	1	1	0	75
S	15	31	9	7	0	0	62
SSW	8	18	7	3	0	0	36
SW	9	14	11	0	0	0	34
WSW	8	30	19	4	0	0	61
W	4	30	23	6	0	0	63
WNW	5	77	19	2	0	0	103
NW	2	55	72	4	0	0	134
NNW	2	6	18	8	0	0	34
TOTAL	98	418	283	52	2	0	854

PERIODS OF CALM(HOURS): 10  
 VARIABLE DIRECTION 8  
 HOURS OF MISSING DATA: 93

TABLE 2.2-2 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83010101-83043024  
 STABILITY CLASS: F DT/DZ  
 ELEVATION: SPEED:SPD 1 DIRECTION:DIR 1 LAPSE:DT 1

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	7	8	0	0	0	15
NNE	0	4	4	0	0	0	8
NE	0	4	8	1	0	0	13
ENE	0	11	16	5	1	0	33
E	2	9	7	0	0	0	19
ESE	8	14	1	0	0	0	23
SE	8	12	0	0	0	0	20
SSE	3	9	0	0	0	0	12
S	4	7	0	0	0	0	11
SSW	4	6	0	0	0	0	11
SW	9	11	3	0	0	0	23
WSW	2	16	8	0	0	0	26
W	5	22	6	0	0	0	33
WNW	2	23	2	0	0	0	27
NW	2	17	14	1	0	0	34
NNW	0	10	7	1	0	0	18
TOTAL	49	182	84	8	1	0	326

PERIODS OF CALM(HOURS): 10  
 VARIABLE DIRECTION 7  
 HOURS OF MISSING DATA: 93

TABLE 2.2-2 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83010101-83043024  
 STABILITY CLASS: G DT/DZ  
 ELEVATION: SPEED:SPD 1 DIRECTION:DIR 1 LAPSE:DT 1

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	1	5	2	1	0	0	9
NNE	0	2	2	0	0	0	4
NE	1	4	5	0	0	0	10
ENE	1	1	11	0	0	0	13
E	2	3	1	0	0	0	6
ESE	4	7	0	0	0	0	11
SE	4	3	0	0	0	0	8
SSE	13	13	0	0	0	0	27
S	7	5	0	0	0	0	13
SSW	5	5	0	0	0	0	10
SW	9	13	2	0	0	0	24
WSW	10	27	4	0	0	0	43
W	13	30	1	0	0	0	44
WNW	7	20	0	0	0	0	27
NW	6	9	9	0	0	0	24
NNW	2	3	3	0	0	0	8
TOTAL	85	150	40	1	0	0	281

PERIODS OF CALM(HOURS): 10  
 VARIABLE DIRECTION 11  
 HOURS OF MISSING DATA: 93

TABLE 2.2-2 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83010101-83043024  
 STABILITY CLASS: ALL DT/DZ  
 ELEVATION: SPEED:SPD 1 DIRECTION:DIR 1 LAPSE:DT 1

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	3	21	26	4	0	0	54
NNE	2	9	20	0	0	0	31
NE	2	14	27	4	0	0	47
ENE	5	20	53	19	2	0	100
E	15	74	136	29	1	0	256
ESE	40	105	46	1	0	0	192
SE	28	84	40	9	1	0	164
SSE	37	117	65	21	2	0	243
S	37	77	27	9	0	0	151
SSW	24	57	17	4	0	0	103
SW	38	72	31	5	0	0	149
WSW	25	89	49	11	1	0	177
W	28	111	65	17	0	0	221
WNW	17	182	130	41	0	0	370
NW	15	121	237	20	2	0	396
NNW	4	28	69	31	1	0	133
TOTAL	320	1181	1038	225	13	0	2787

PERIODS OF CALM(HOURS): 10  
 VARIABLE DIRECTION 50  
 HOURS OF MISSING DATA: 93

TABLE 2.2-3

JOINT FREQUENCY TABLE WIND SPEED AND WIND  
DIRECTION 46m vs DELTA TEMPERATURE  
46m - 10m (1/1/83 - 4/30/83)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
PERIOD OF RECORD = 83010101-83043024  
STABILITY CLASS: A DT/DZ  
ELEVATION: SPEED:SPD 2 DIRECTION:DIR 2 LAPSE:DT 1

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	2	7	4	1	0	14
NNE	1	0	4	6	1	0	12
NE	0	1	0	2	0	0	3
ENE	0	1	4	1	0	0	6
E	1	6	10	5	1	1	24
ESE	0	6	3	0	0	0	9
SE	2	4	7	5	0	0	18
SSE	0	13	14	8	0	0	35
S	2	11	11	3	0	0	27
SSW	0	13	8	2	0	0	23
SW	0	18	10	0	0	0	28
WSW	2	4	6	4	2	0	18
W	3	11	8	8	0	3	33
WNW	1	24	24	44	1	0	94
NW	0	9	38	50	6	1	104
NNW	1	7	37	21	12	1	79
TOTAL	13	130	191	163	24	6	527

PERIODS OF CALM(HOURS): 3  
VARIABLE DIRECTION 0  
HOURS OF MISSING DATA: 149



TABLE 2.2-3 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD = 83010101-83043024

STABILITY CLASS: B DT/DZ

ELEVATION: SPEED:SPD 2 DIRECTION:DIR 2 LAPSE:DT 1

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	1	1	2	1	0	0	5
NNE	0	0	0	0	0	0	0
NE	0	1	0	0	0	0	1
ENE	0	1	1	4	1	0	7
E	1	2	4	4	0	0	11
ESE	2	1	5	0	0	0	8
SE	0	0	4	2	0	0	6
SSE	0	1	2	2	0	0	5
S	0	0	1	1	0	0	2
SSW	0	3	0	0	0	0	3
SW	1	5	2	0	0	0	8
WSW	1	0	1	0	0	0	2
W	2	4	6	3	2	1	18
WNW	0	1	8	2	1	0	12
NW	0	3	5	5	1	0	14
NNW	0	2	1	5	1	0	9
TOTAL	8	25	42	29	6	1	111

PERIODS OF CALM(HOURS): 3

VARIABLE DIRECTION 1

HOURS OF MISSING DATA: 149

TABLE 2.2-3 (CONTINUED)

SITE: PLANT HATCH

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD = 83010101-83043024

STABILITY CLASS: C DT/DZ

ELEVATION: SPEED:SPD 2 DIRECTION:DIR 2 LAPSE:DT 1

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	0	3	1	0	0	4
NNE	0	0	1	1	0	0	2
NE	0	0	0	0	0	0	0
ENE	0	0	0	0	0	0	0
E	0	1	0	0	0	0	1
ESE	0	2	2	1	0	0	5
SE	0	1	0	1	0	0	2
SSE	0	1	1	1	0	0	3
S	1	0	3	0	0	0	4
SSW	1	0	0	1	0	0	2
SW	0	2	0	0	0	0	2
WSW	1	1	1	0	0	0	3
W	0	1	0	1	0	0	2
WNW	2	2	2	1	0	0	7
NW	0	2	2	6	2	0	12
NNW	0	0	1	3	1	0	5
TOTAL	5	13	16	17	3	0	54

PERIODS OF CALM(HOURS): 3

VARIABLE DIRECTION 1

HOURS OF MISSING DATA: 149

TABLE 2.2-3 (CONTINUED)

SITE: PLANT HATCH

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD = 83010101-83043024

STABILITY CLASS: D DT/DZ

ELEVATION: SPEED:SPD 2 DIRECTION:DIR 2 LAPSE:DT 1

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	6	15	10	5	0	36
NNE	0	1	2	2	0	0	5
NE	0	2	7	1	1	0	11
ENE	2	2	14	20	0	0	38
E	2	9	58	26	2	0	97
ESE	3	17	21	4	0	0	45
SE	1	7	19	15	4	0	46
SSE	1	10	18	7	0	1	37
S	4	15	4	1	0	0	24
SSW	3	10	0	1	0	0	14
SW	3	13	3	2	0	0	21
WSW	1	3	13	5	2	0	24
W	0	7	20	9	1	0	37
WNW	0	4	29	17	2	1	53
NW	1	9	40	23	1	0	74
NNW	0	4	22	17	6	0	49
TOTAL	21	119	285	160	24	2	611

PERIODS OF CALM(HOURS): 3

VARIABLE DIRECTION 2

HOURS OF MISSING DATA: 149

TABLE 2.2-3 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83010101-83043024  
 STABILITY CLASS: E DT/DZ  
 ELEVATION: SPEED:SPD 2 DIRECTION:DIR 2 LAPSE:DT 1

			WIND SPEED (MPH)					
WIND DIRECTION			1-3	4-7	8-12	13-18	19-24	>24 TOTAL
N			0	1	32	9	0	0 42
NNE			0	2	14	1	0	0 17
NE			1	3	11	6	3	0 24
ENE			1	3	33	13	2	0 52
E			1	6	26	8	1	0 42
ESE			1	15	18	4	0	0 38
SE			4	26	13	6	4	0 53
SSE			1	33	28	3	0	0 65
S			7	23	18	2	0	0 50
SSW			4	10	12	0	0	0 26
SW			2	13	11	3	0	0 29
WSW			5	10	26	10	3	0 54
W			1	9	38	7	5	0 60
WNW			2	14	55	13	0	0 84
104	22	0	0	139				
NNW			1	5	41	10	1	0 58
TOTAL			31	186	480	117	19	0 833

PERIODS OF CALM(HOURS): 3  
 VARIABLE DIRECTION 4  
 HOURS OF MISSING DATA: 149

TABLE 2.2-3 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83010101-83043024  
 STABILITY CLASS: F DT/DZ  
 ELEVATION: SPEED:SPD 2 DIRECTION:DIR 2 LAPSE:DT 1

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	2	3	16	1	0	0	22
NNE	0	1	17	1	0	0	19
NE	2	0	14	6	5	0	27
ENE	0	3	15	6	1	0	25
E	0	1	6	0	0	0	7
ESE	1	3	8	0	0	0	12
SE	1	6	3	3	0	0	13
SSE	0	5	2	0	0	0	7
S	2	7	3	1	1	0	14
SSW	0	4	3	0	0	0	7
SW	1	4	11	0	0	0	16
WSW	2	7	20	5	0	0	34
W	3	5	12	4	0	0	24
WNW	2	5	23	1	0	0	31
NW	2	1	32	5	0	0	40
NNW	0	4	10	2	0	0	16
TOTAL	18	59	195	35	7	0	314

PERIODS OF CALM(HOURS): 3  
 VARIABLE DIRECTION 4  
 HOURS OF MISSING DATA: 149

TABLE 2.2-3 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83010101-83043024  
 STABILITY CLASS: G DT/DZ  
 ELEVATION: SPEED:SPD 2 DIRECTION:DIR 2 LAPSE:DT 1

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	5	3	8	3	0	0	19
NNE	0	5	7	1	0	0	13
NE	0	2	11	4	0	0	17
ENE	1	3	6	1	0	0	11
E	0	2	1	0	0	0	3
ESE	0	6	5	0	0	0	11
SE	2	4	5	1	0	0	12
SSE	1	7	3	0	0	0	11
S	2	9	8	0	0	0	19
SSW	5	1	1	0	0	0	8
SW	3	5	0	0	0	0	9
WSW	2	2	13	1	0	0	19
W	5	8	28	1	0	0	42
WNW	2	13	19	1	0	0	35
NW	2	11	24	0	0	0	37
NNW	1	4	8	2	0	0	15
TOTAL	31	85	147	15	0	0	281

PERIODS OF CALM(HOURS): 3  
 VARIABLE DIRECTION 5  
 HOURS OF MISSING DATA: 149



TABLE 2.2-3 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83010101-83043024  
 STABILITY CLASS: ALL DT/DZ  
 ELEVATION: SPEED:SPD 2 DIRECTION:DIR 2 LAPSE:DT 1

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	8	16	83	29	6	0	142
NNE	1	9	45	12	1	0	68
NE	3	9	43	19	9	0	83
ENE	4	13	73	45	4	0	139
E	5	27	105	43	4	1	185
ESE	7	50	62	9	0	0	128
SE	10	48	51	33	8	0	150
SSE	3	70	68	21	0	1	163
S	18	65	48	8	1	0	140
SSW	13	41	24	4	0	0	83
SW	10	60	37	5	0	0	113
WSW	14	27	80	25	7	0	154
W	14	45	112	33	8	4	216
WNW	9	63	160	79	4	1	316
NW	5	48	245	111	10	1	420
NNW	3	26	120	60	21	1	231
TOTAL	127	617	1356	536	83	9	2731

PERIODS OF CALM (HOURS): 3  
 VARIABLE DIRECTION 17  
 HOURS OF MISSING DATA: 149

TABLE 2.2-4

JOINT FREQUENCY TABLE WIND SPEED AND WIND  
DIRECTION 10m vs DELTA TEMPERATURE  
60m - 10m (5/1/83 - 12/31/83)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
PERIOD OF RECORD = 83050101-83123124  
STABILITY CLASS: A DT/DZ  
ELEVATION: SPEED:SPD 1 DIRECTION:DIR 1 LAPSE:DT 2

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	4	11	0	0	0	0	15
NNE	1	25	10	0	0	0	36
NE	1	84	14	0	0	0	99
ENE	3	76	19	0	0	0	98
E	2	27	6	0	0	0	35
ESE	2	17	6	0	0	0	25
SE	1	21	4	0	0	0	26
SSE	1	21	6	0	0	0	28
S	5	14	5	0	0	0	24
SSW	0	19	8	1	0	0	29
SW	2	25	10	0	0	0	37
WSW	1	22	9	0	0	0	32
W	0	26	15	0	0	0	41
WNW	1	35	10	0	0	0	46
NW	4	26	8	0	0	0	38
NNW	1	15	5	0	0	0	21
TOTAL	29	464	135	1	0	0	630

PERIODS OF CALM(HOURS): 432

VARIABLE DIRECTION 0

HOURS OF MISSING DATA: 411

TABLE 2.2-4 (CONTINUED)

SITE: PLANT HATCH

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD = 83050101-83123124

STABILITY CLASS: B DT/DZ

ELEVATION: SPEED:SPD 1 DIRECTION:DIR 1 LAPSE:DT 2

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	7	3	0	0	0	10
NNE	7	14	0	0	0	0	21
NE	3	27	5	0	0	0	35
ENE	1	23	1	0	0	0	25
E	1	9	1	0	0	0	11
ESE	1	7	0	0	0	0	8
SE	6	16	2	0	0	0	24
SSE	1	14	2	0	0	0	17
S	2	13	4	0	0	0	19
SSW	1	12	10	0	0	0	23
SW	3	11	3	0	0	0	17
WSW	2	14	2	0	0	0	18
W	0	15	5	0	0	0	20
WNW	1	21	6	0	0	0	28
NW	3	20	4	0	0	0	27
NNW	1	13	2	0	0	0	16
TOTAL	33	236	50	0	0	0	319

PERIODS OF CALM(HOURS): 432

VARIABLE DIRECTION 0

HOURS OF MISSING DATA: 411

TABLE 2.2-4 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83050101-83123124  
 STABILITY CLASS: C DT/DZ  
 ELEVATION: SPEED:SPD 1 DIRECTION:DIR 1 LAPSE:DT 2

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	7	14	0	0	0	0	21
NNE	3	15	1	0	0	0	19
NE	3	21	2	0	0	0	26
ENE	3	16	5	0	0	0	24
E	5	6	0	0	0	0	11
ESE	3	7	2	0	0	0	12
SE	2	8	0	0	0	0	10
SSE	2	5	3	0	0	0	10
S	1	10	3	0	0	0	14
SSW	0	18	4	0	0	0	22
SW	3	8	6	0	0	0	17
WSW	2	9	3	1	0	0	15
W	3	10	3	0	0	0	16
WNW	3	16	5	0	0	0	24
NW	2	11	0	0	0	0	13
NNW	1	17	1	0	0	0	19
TOTAL	43	191	38	1	0	0	273

PERIODS OF CALM(HOURS): 432  
 VARIABLE DIRECTION 0  
 HOURS OF MISSING DATA: 411

TABLE 2.2-4 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83050101-83123124  
 STABILITY CLASS: D DT/DZ  
 ELEVATION: SPEED:SPD 1 DIRECTION:DIR 1 LAPSE:DT 2

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	8	40	10	0	0	0	58
NNE	9	39	1	0	0	0	50
NE	32	102	10	0	0	0	145
ENE	24	72	6	0	0	0	105
E	16	33	2	0	0	0	52
ESE	8	24	5	0	0	0	37
SE	12	55	3	0	0	0	72
SSE	17	43	11	0	0	0	71
S	12	54	6	0	0	0	73
SSW	15	62	10	0	0	0	87
SW	7	58	11	0	0	0	79
WSW	14	43	7	1	0	0	65
W	24	51	6	0	0	0	83
WNW	13	43	13	0	0	0	75
NW	11	44	15	1	0	0	73
NNW	10	33	5	0	0	0	50
TOTAL	232	802	121	2	0	0	1175

PERIODS OF CALM(HOURS): 432

VARIABLE DIRECTION 0

HOURS OF MISSING DATA: 411

TABLE 2.2-4 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83050101-83123124  
 STABILITY CLASS: E DT/DZ  
 ELEVATION: SPEED:SPD 1 DIRECTION:DIR 1 LAPSE:DT 2

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	12	24	6	0	0	0	46
NNE	18	41	2	0	0	0	66
NE	52	131	14	0	0	0	199
ENE	73	68	4	0	0	0	152
E	44	34	1	0	0	0	87
ESE	43	48	2	0	0	0	103
SE	49	108	7	0	0	0	169
SSE	36	105	21	0	0	0	170
S	41	106	7	1	0	0	158
SSW	37	101	10	0	0	0	153
SW	48	119	7	1	0	0	181
WSW	38	40	4	0	0	0	90
W	31	46	5	0	0	0	85
WNW	20	44	20	0	0	0	86
NW	23	57	30	2	0	0	113
NNW	15	37	14	0	0	0	73
TOTAL	580	1109	154	4	0	0	1931

PERIODS OF CALM(HOURS): 432  
 VARIABLE DIRECTION 0  
 HOURS OF MISSING DATA: 411



TABLE 2.2-4 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83050101-83123124  
 STABILITY CLASS: F DT/DZ  
 ELEVATION: SPEED:SPD 1 DIRECTION:DIR 1 LAPSE:DT 2

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	10	5	0	0	0	0	18
NNE	13	3	4	0	0	0	20
NE	26	27	8	0	0	0	71
ENE	28	20	1	0	0	0	57
E	17	10	0	0	0	0	46
ESE	28	6	1	0	0	0	50
SE	22	13	0	0	0	0	44
SSE	13	9	0	0	0	0	25
S	19	14	0	0	0	0	40
SSW	19	15	1	0	0	0	51
SW	22	33	0	0	0	0	67
WSW	16	8	1	0	0	0	33
W	13	8	1	0	0	0	27
WNW	13	13	1	0	0	0	29
NW	6	12	0	0	0	0	21
NNW	12	7	1	0	0	0	25
TOTAL	277	203	19	0	0	0	624

PERIODS OF CALM(HOURS): 432  
 VARIABLE DIRECTION 0  
 HOURS OF MISSING DATA: 411

TABLE 2.2-4 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83050101-83123124  
 STABILITY CLASS: G DT/DZ  
 ELEVATION: SPEED:SPD 1 DIRECTION:DIR 1 LAPSE:DT 2

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	7	0	0	0	0	0	15
NNE	6	1	0	0	0	0	12
NE	5	1	1	0	0	0	13
ENE	14	5	0	0	0	0	24
E	6	4	0	0	0	0	16
ESE	13	4	0	0	0	0	32
SE	17	0	0	0	0	0	28
SSE	9	1	0	0	0	0	13
S	11	5	1	0	0	0	27
SSW	26	11	0	0	0	0	58
SW	44	18	0	0	0	0	84
WSW	29	4	0	0	0	0	55
W	25	7	0	0	0	0	45
WNW	20	7	0	0	0	0	41
NW	10	11	2	0	0	0	27
NNW	12	3	3	0	0	0	27
TOTAL	254	82	7	0	0	0	517

PERIODS OF CALM(HOURS): 432  
 VARIABLE DIRECTION 0  
 HOURS OF MISSING DATA: 411

TABLE 2.2-4 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83050101-83123124  
 STABILITY CLASS: ALL DT/DZ  
 ELEVATION: SPEED:SPD 1 DIRECTION:DIR 1 LAPSE:DT 2

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	48	101	19	0	0	0	183
NNE	57	138	18	0	0	0	224
NE	122	393	54	0	0	0	588
ENE	146	280	36	0	0	0	485
E	91	123	10	0	0	0	258
ESE	98	113	16	0	0	0	267
SE	109	221	16	0	0	0	373
SSE	79	198	43	0	0	0	334
S	91	216	26	1	0	0	355
SSW	98	238	43	1	0	0	423
SW	129	272	37	1	0	0	482
WSW	102	140	26	2	0	0	308
W	96	163	35	0	0	0	317
WNW	71	185	55	0	0	0	329
NW	59	181	59	3	0	0	312
NNW	52	125	31	0	0	0	231
TOTAL	1448	3087	524	8	0	0	5469

PERIODS OF CALM(HOURS): 432  
 VARIABLE DIRECTION 0  
 HOURS OF MISSING DATA: 411

TABLE 2.2-5

JOINT FREQUENCY TABLE WIND SPEED AND WIND  
DIRECTION 60m vs DELTA TEMPERATURE  
60m - 10m (5/1/83 - 12/31/83)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
PERIOD OF RECORD = 83050101-83123124  
STABILITY CLASS: A DT/DZ  
ELEVATION: SPEED:SPD 2 DIRECTION:DIR 2 LAPSE:DT 2

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	6	9	0	0	0	15
NNE	0	6	13	10	0	0	29
NE	1	11	60	21	0	0	93
ENE	0	15	50	13	0	0	78
E	2	14	26	6	0	0	48
ESE	1	13	8	6	0	0	28
SE	0	13	12	1	0	0	26
SSE	2	9	7	4	0	0	22
S	0	7	8	4	1	0	20
SSW	1	7	13	3	2	0	26
SW	0	18	15	6	0	0	39
WSW	1	7	5	11	0	0	24
W	1	13	29	7	1	0	51
WNW	1	12	18	4	0	0	35
NW	1	10	15	0	0	0	26
NNW	0	5	2	1	0	0	8
TOTAL	11	166	290	97	4	0	568

PERIODS OF CALM(HOURS): 6  
VARIABLE DIRECTION 0  
HOURS OF MISSING DATA: 1143

TABLE 2.2-5 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83050101-83123124  
 STABILITY CLASS: B DT/DZ  
 ELEVATION: SPEED:SPD 2 DIRECTION:DIR 2 LAPSE:DT 2

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	1	2	8	1	0	0	12
NNE	0	5	4	0	0	0	9
NE	1	11	16	5	0	0	33
ENE	0	6	9	3	0	0	18
E	0	10	4	3	0	0	17
ESE	1	8	2	0	0	0	11
SE	2	5	8	2	0	0	17
SSE	3	6	5	0	0	0	14
S	0	8	8	0	0	0	16
SSW	1	5	9	7	0	0	22
SW	1	6	3	4	0	0	14
WSW	1	9	7	5	0	0	22
W	0	7	11	3	0	0	21
WNW	0	7	11	3	1	0	22
NW	0	9	6	2	0	0	17
NNW	1	6	4	0	0	0	11
TOTAL	12	110	115	38	1	0	276

PERIODS OF CALM (HOURS): 6  
 VARIABLE DIRECTION 0  
 HOURS OF MISSING DATA: 1143

TABLE 2.2-5 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83050101-83123124  
 STABILITY CLASS: C DT/DZ  
 ELEVATION: SPEED:SPD 2 DIRECTION:DIR 2 LAPSE:DT 2

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	7	10	0	0	0	17
NNE	0	3	6	1	0	0	10
NE	2	1	12	2	0	0	17
ENE	1	3	6	0	0	0	10
E	0	10	6	1	0	0	17
ESE	0	3	6	2	0	0	11
SE	0	6	3	0	0	0	9
SSE	1	5	6	1	0	0	13
S	2	3	9	2	0	0	16
SSW	0	10	6	3	0	0	19
SW	2	3	8	4	0	0	17
WSW	2	3	6	3	1	0	15
W	1	8	6	1	0	0	16
WNW	0	7	5	2	1	0	15
NW	1	7	7	0	0	0	15
NNW	1	5	5	0	0	0	11
TOTAL	13	84	107	22	2	0	228

PERIODS OF CALM(HOURS): 6  
 VARIABLE DIRECTION 0  
 HOURS OF MISSING DATA: 1143



TABLE 2.2-5 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83050101-83123124  
 STABILITY CLASS: D DT/DZ  
 ELEVATION: SPEED:SPD 2 DIRECTION:DIR 2 LAPSE:DT 2

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	2	18	15	5	0	0	40
NNE	2	14	10	1	0	0	27
NE	3	35	48	40	0	0	126
ENE	1	14	29	10	0	0	54
E	4	23	26	8	0	0	61
ESE	5	21	32	5	0	0	63
SE	2	19	29	2	0	0	52
SSE	2	21	33	6	1	0	63
S	2	24	27	4	0	0	57
SSW	5	24	41	8	3	0	81
SW	3	16	34	13	1	0	67
WSW	4	24	28	7	0	0	63
W	2	35	30	14	0	0	81
WNW	4	28	36	11	3	0	82
NW	0	30	20	6	2	0	58
NNW	4	30	14	4	0	0	52
TOTAL	45	376	452	144	10	0	1027

PERIODS OF CALM(HOURS): 6  
 VARIABLE DIRECTION 0  
 HOURS OF MISSING DATA: 1143

TABLE 2.2-5 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83050101-83123124  
 STABILITY CLASS: E DT/DZ  
 ELEVATION: SPEED:SPD 2 DIRECTION:DIR 2 LAPSE:DT 2

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	10	21	17	0	0	48
NNE	2	7	24	19	0	0	52
NE	3	15	86	59	1	0	164
ENE	4	16	55	7	1	0	83
E	2	34	59	6	0	0	102
ESE	2	38	70	4	0	0	114
SE	6	40	78	14	0	0	138
SSE	4	19	121	18	1	0	163
S	1	35	101	24	1	0	162
SSW	2	22	100	13	0	0	137
SW	7	24	101	16	1	0	149
WSW	4	21	49	15	5	0	94
W	1	20	45	17	0	1	84
WNW	4	19	31	28	1	0	83
NW	2	9	29	19	3	1	63
NNW	2	15	27	14	0	0	58
TOTAL	46	344	997	290	14	2	1694

PERIODS OF CALM(HOURS): 6

VARIABLE DIRECTION 0

HOURS OF MISSING DATA: 1143

TABLE 2.2-5 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83050101-83123124  
 STABILITY CLASS: F DT/DZ  
 ELEVATION: SPEED:SPD 2 DIRECTION:DIR 2 LAPSE:DT 2

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	2	6	2	0	0	10
NNE	1	5	6	3	0	0	15
NE	2	8	29	14	0	0	53
ENE	1	8	27	4	0	0	40
E	0	10	25	1	0	0	36
ESE	1	13	40	0	0	0	54
SE	4	22	26	1	0	0	53
SSE	1	16	17	0	0	0	34
S	3	9	22	3	0	0	37
SSW	0	15	22	4	0	0	41
SW	1	15	30	1	1	0	49
WSW	2	14	16	2	0	0	34
W	1	8	17	0	0	0	26
WNW	2	8	14	0	0	0	24
NW	1	3	3	0	0	0	7
NNW	0	3	12	4	0	0	19
TOTAL	20	159	312	39	1	0	532

PERIODS OF CALM(HOURS): 6  
 VARIABLE DIRECTION 0  
 HOURS OF MISSING DATA: 1143

TABLE 2.2-5 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83050101-83123124  
 STABILITY CLASS: G DT/DZ  
 ELEVATION: SPEED:SPD 2 DIRECTION:DIR 2 LAPSE:DT 2

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	1	9	10	4	0	0	25
NNE	1	11	14	0	0	0	26
NE	2	7	21	1	0	0	32
ENE	1	9	6	0	0	0	16
E	0	7	21	0	0	0	28
ESE	1	11	18	0	0	0	31
SE	3	17	20	0	0	0	40
SSE	1	11	8	0	1	0	21
S	1	3	12	2	0	0	19
SSW	1	3	8	3	0	0	15
SW	0	12	13	0	0	0	25
WSW	2	10	16	0	0	0	28
W	5	9	18	5	0	0	37
WNW	0	7	20	4	0	0	31
NW	1	11	8	1	0	0	21
NNW	2	6	5	4	0	0	17
TOTAL	22	143	218	24	1	0	412

PERIODS OF CALM(HOURS): 6  
 VARIABLE DIRECTION 0  
 HOURS OF MISSING DATA: 1143

TABLE 2.2-5 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83050101-83123124  
 STABILITY CLASS: ALL DT/DZ  
 ELEVATION: SPEED:SPD 2 DIRECTION:DIR 2 LAPSE:DT 2

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	4	54	79	29	0	0	167
NNE	6	51	77	34	0	0	168
NE	14	88	272	142	1	0	518
ENE	8	71	182	37	1	0	299
E	8	108	167	25	0	0	309
ESE	11	107	176	17	0	0	312
SE	17	122	176	20	0	0	335
SSE	14	87	197	29	3	0	330
S	9	89	187	39	2	0	327
SSW	10	86	199	41	5	0	341
SW	14	94	204	44	3	0	360
WSW	16	88	127	43	6	0	280
W	11	100	156	47	1	1	316
WNW	11	88	135	52	6	0	292
NW	6	79	88	28	5	1	207
NNW	10	70	69	27	0	0	176
TOTAL	169	1382	2491	654	33	2	4737

PERIODS OF CALM(HOURS): 6  
 VARIABLE DIRECTION 0  
 HOURS OF MISSING DATA: 1143

TABLE 2.2-6

JOINT FREQUENCY TABLE WIND SPEED AND WIND  
DIRECTION 100m vs DELTA TEMPERATURE  
100m - 10m (5/1/83 - 12/31/83)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD = 83050101-83123124

STABILITY CLASS: A DT/DZ

ELEVATION: SPEED:SPD 3 DIRECTION:DIR 3 LAPSE:DT 1

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	3	2	1	0	0	6
NNE	0	2	7	6	0	0	15
NE	0	3	39	28	0	0	70
ENE	0	3	20	8	0	0	31
E	0	2	6	3	0	0	11
ESE	0	3	3	1	0	0	7
SE	0	3	3	0	0	0	6
SSE	0	2	0	0	0	0	2
S	1	1	1	1	1	0	5
SSW	0	1	2	2	0	0	5
SW	0	1	2	3	1	0	7
WSW	0	0	3	4	1	0	8
W	0	1	7	5	0	0	13
WNW	0	6	3	2	0	0	11
NW	0	2	5	1	0	0	8
NNW	0	1	1	0	0	0	2
TOTAL	1	34	104	65	3	0	207

PERIODS OF CALM(HOURS): 9

VARIABLE DIRECTION 0

HOURS OF MISSING DATA: 726



TABLE 2.2-6 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83050101-83123124  
 STABILITY CLASS: B DT/DZ  
 ELEVATION: SPEED:SPD 3 DIRECTION:DIR 3 LAPSE:DT 1

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	3	3	1	0	0	7
NNE	0	1	9	3	0	0	13
NE	0	8	31	11	0	0	50
ENE	0	4	28	1	0	0	33
E	0	4	5	2	1	0	12
ESE	0	6	8	1	0	0	15
SE	0	4	6	1	0	0	11
SSE	0	2	4	1	0	0	7
S	0	4	4	1	0	0	9
SSW	0	3	4	3	0	0	10
SW	0	6	8	3	0	0	17
WSW	0	4	1	8	0	0	13
W	0	3	7	5	0	0	15
WNW	0	3	7	7	2	0	19
NW	0	4	12	1	0	0	17
NNW	1	1	2	1	0	0	5
TOTAL	1	60	139	50	3	0	253

PERIODS OF CALM(HOURS): 9  
 VARIABLE DIRECTION 0  
 HOURS OF MISSING DATA: 726

TABLE 2.2-6 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83050101-83123124  
 STABILITY CLASS: C DT/DZ  
 ELEVATION: SPEED:SPD 3 DIRECTION:DIR 3 LAPSE:DT 1

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	7	13	1	0	0	21
NNE	0	8	9	9	0	0	26
NE	0	10	22	7	0	0	39
ENE	0	13	18	4	0	0	35
E	0	12	6	1	0	0	19
ESE	0	10	4	2	0	0	16
SE	1	11	11	0	0	0	23
SSE	1	7	6	2	1	0	17
S	0	14	11	3	0	0	28
SSW	1	5	10	4	4	0	24
SW	0	6	9	0	1	0	22
WSW	1	12	10	7	0	0	30
W	1	10	19	6	0	0	36
WNW	0	11	12	4	1	0	28
NW	0	6	4	3	0	0	13
NNW	0	5	9	0	0	0	14
TOTAL	5	147	173	59	7	0	391

PERIODS OF CALM(HOURS): 9  
 VARIABLE DIRECTION: 0  
 HOURS OF MISSING DATA: 726

TABLE 2.2-6 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83050101-83123124  
 STABILITY CLASS: D DT/DZ  
 ELEVATION: SPEED:SPD 3 DIRECTION:DIR 3 LAPSE:DT 1

WIND DIRECTION	WIND SPEED(MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	2	25	26	26	0	0	79
NNE	1	22	38	23	2	0	86
NE	5	37	80	84	0	0	208
ENE	4	31	65	22	0	0	122
E	3	15	34	14	0	0	67
ESE	2	30	37	9	2	0	80
SE	3	31	37	8	1	0	80
SSE	3	23	36	23	5	1	91
S	2	20	50	30	2	0	104
SSW	2	24	57	28	5	0	116
SW	3	25	50	21	3	0	102
WSW	2	32	41	19	4	0	98
W	5	39	51	22	6	0	123
WNW	4	40	50	23	8	1	126
NW	2	26	39	23	6	3	99
NNW	4	33	26	9	1	0	73
TOTAL	47	453	717	384	45	5	1654

PERIODS OF CALM(HOURS): 9  
 VARIABLE DIRECTION 0  
 HOURS OF MISSING DATA: 726

TABLE 2.2-6 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83050101-83123124  
 STABILITY CLASS: E DT/DZ  
 ELEVATION: SPEED:SPD 3 DIRECTION:DIR 3 LAPSE:DT 1

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	0	7	17	17	3	0	45
NNE	1	9	30	50	7	0	97
NE	3	14	59	101	5	0	183
ENE	0	16	52	43	0	0	111
E	3	16	58	33	1	0	112
ESE	7	18	44	28	0	0	98
SE	1	27	80	12	2	0	123
SSE	0	9	55	83	8	1	156
S	1	17	59	95	9	1	182
SSW	2	16	45	72	3	0	138
SW	0	7	60	70	6	0	143
WSW	1	19	31	47	4	2	104
W	1	12	36	49	6	1	105
WNW	0	10	30	37	4	0	81
NW	0	10	30	19	10	0	69
NNW	3	8	31	5	0	0	47
TOTAL	23	215	717	761	68	5	1794

PERIODS OF CALM(HOURS): 9  
 VARIABLE DIRECTION 0  
 HOURS OF MISSING DATA: 726

TABLE 2.2-6 (CONTINUED)

SITE: PLANT HATCH

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD = 83050101-83123124

STABILITY CLASS: F DT/DZ

ELEVATION: SPEED:SPD 3 DIRECTION:DIR 3 LAPSE:DT 1

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	1	6	6	4	2	0	19
NNE	1	8	12	10	1	0	32
NE	1	6	10	14	8	0	39
ENE	1	0	17	18	0	0	36
E	0	5	18	14	0	0	37
ESE	0	8	21	15	0	0	44
SE	1	13	18	3	0	0	35
SSE	2	6	8	14	1	0	31
S	1	6	15	10	3	0	35
SSW	0	3	11	13	0	0	27
SW	0	6	17	28	1	0	52
WSW	1	7	29	14	0	1	52
W	2	10	23	5	2	0	42
WNW	1	4	6	11	1	0	23
NW	0	2	10	16	0	0	28
NNW	0	2	7	5	0	0	14
TOTAL	12	92	228	194	19	1	546

PERIODS OF CALM(HOURS): 9

VARIABLE DIRECTION 0

HOURS OF MISSING DATA: 726

TABLE 2.2-6 (CONTINUED)

SITE: PLANT HATCH

## HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD = 83050101-83123124

STABILITY CLASS: G DT/DZ

ELEVATION: SPEED:SPD 3 DIRECTION:DIR 3 LAPSE:DT 1

WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	2	3	1	3	1	0	10
NNE	2	8	19	3	1	0	33
NE	2	1	9	8	0	0	21
ENE	2	5	9	5	0	0	21
E	1	1	12	2	0	0	16
ESE	1	3	7	7	0	0	18
SE	2	6	6	11	1	0	26
SSE	0	2	2	2	10	0	16
S	0	2	2	3	0	0	7
SSW	0	2	4	6	2	0	14
SW	1	2	2	10	2	0	17
WSW	3	4	14	10	0	0	31
W	1	3	8	7	0	0	19
WNW	0	7	7	5	0	0	19
NW	0	9	8	8	0	0	25
NNW	2	6	6	2	0	0	16
TOTAL	19	64	116	92	17	0	309

PERIODS OF CALM(HOURS): 9

VARIABLE DIRECTION 0

HOURS OF MISSING DATA: 726



TABLE 2.2-6 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION  
 PERIOD OF RECORD = 83050101-83123124  
 STABILITY CLASS: ALL DT/DZ  
 ELEVATION: SPEED:SPD 3 DIRECTION:DIR 3 LAPSE:DT 1

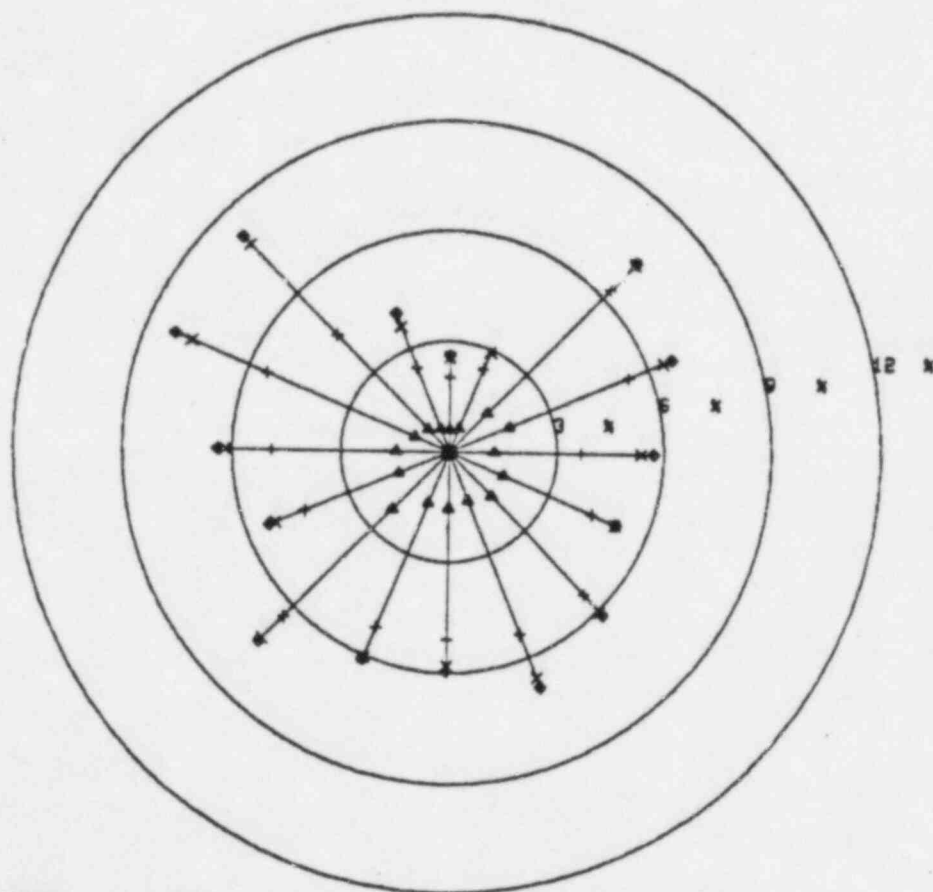
WIND DIRECTION	WIND SPEED (MPH)						TOTAL
	1-3	4-7	8-12	13-18	19-24	>24	
N	5	54	68	53	6	0	187
NNE	5	58	124	104	11	0	302
NE	11	79	250	253	13	0	610
ENE	7	72	209	101	0	0	389
E	7	55	139	69	2	0	274
ESE	10	78	124	63	2	0	278
SE	8	95	161	35	4	0	304
SSE	6	51	111	125	25	2	320
S	5	64	142	143	15	1	370
SSW	5	54	133	128	14	0	334
SW	4	53	148	141	14	0	360
WSW	8	78	129	109	9	3	336
W	10	78	151	99	14	1	353
WNW	5	81	115	89	16	1	307
NW	2	59	108	71	16	3	259
NNW	10	56	82	22	1	0	171
TOTAL	108	1065	2194	1605	162	11	5154

PERIODS OF CALM(HOURS): 9  
 VARIABLE DIRECTION 0  
 HOURS OF MISSING DATA: 726

TABLE 2.2-7

MONTHLY AND ANNUAL PRECIPITATION  
1983

<u>Month</u>	<u>Precipitation (inches)</u>
January	3.49
February	4.31
March	5.53
April	3.78
May	0.66
June	1.79
July	2.05
August	0.82
September	0.88
October	1.70
November	5.20
December	<u>4.60</u>
TOTAL	34.81 inches



WIND ROSE  
(WINDS FROM)  
N  
↑

△ WIND SPEED LESS THAN 3.5 MPH  
+ WIND SPEED LESS THAN 7.5 MPH  
x WIND SPEED LESS THAN 12.5 MPH  
• WIND SPEED GREATER THAN 12.5 MPH

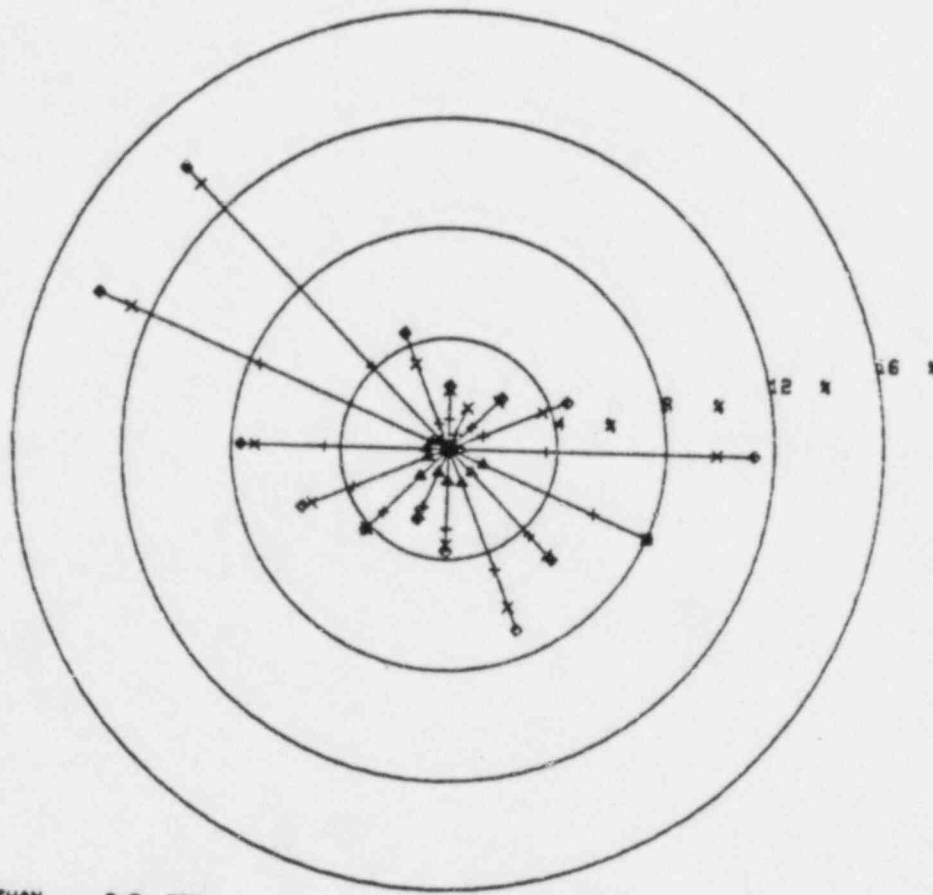
5.2 PERCENT CALMS  
(CALMS DEFINED AS SPEED LESS THAN 0.5 )

## GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT  
ANNUAL REPORT

10/23m WIND ROSE  
(1/1/83 - 12/31/83)

FIGURE 2.2-1



WIND ROSE  
(WINDS FROM)  
N  
↑

△ WIND SPEED LESS THAN 3.5 MPH  
+ WIND SPEED LESS THAN 7.5 MPH  
x WIND SPEED LESS THAN 12.5 MPH  
◊ WIND SPEED GREATER THAN 12.5 MPH

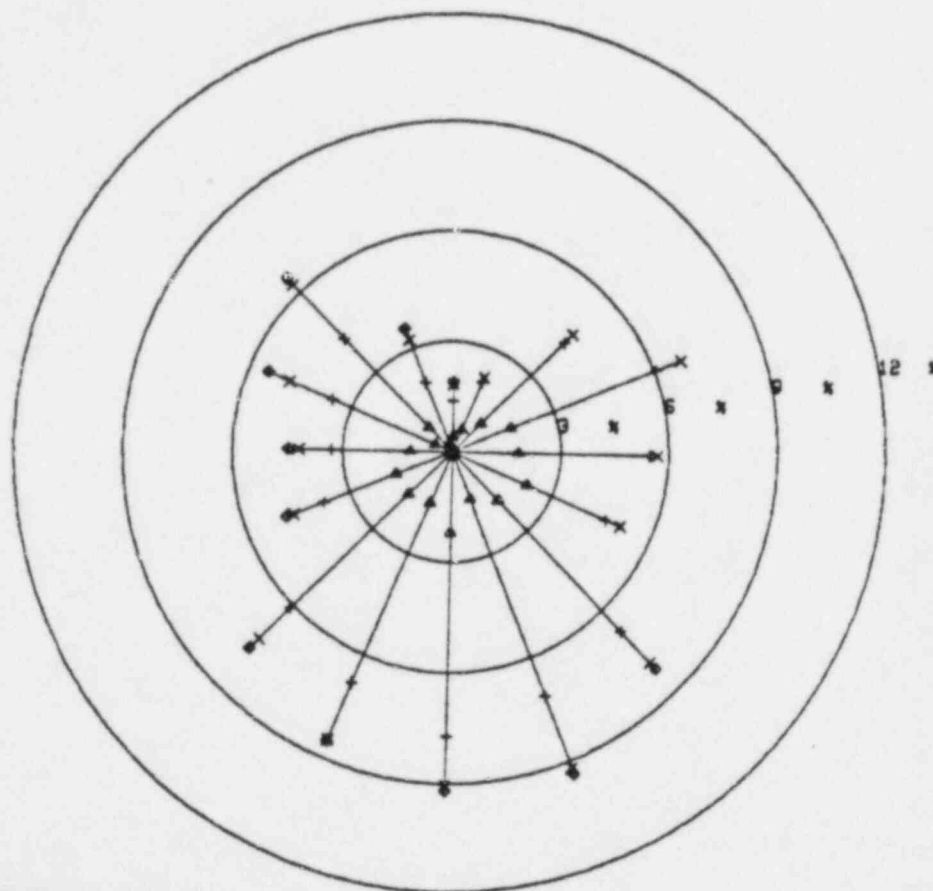
0.2 PERCENT CALMS  
(CALMS DEFINED AS SPEED LESS THAN 0.5 )

## GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT  
ANNUAL REPORT

23m WIND ROSE  
(1/1/83 - 3/31/83)

FIGURE 2.2-2



WIND ROSE  
(WINDS FROM)  
N  
↑

— WIND SPEED LESS THAN 3.5 MPH  
+ WIND SPEED LESS THAN 7.5 MPH  
x WIND SPEED LESS THAN 12.5 MPH  
○ WIND SPEED GREATER THAN 12.5 MPH

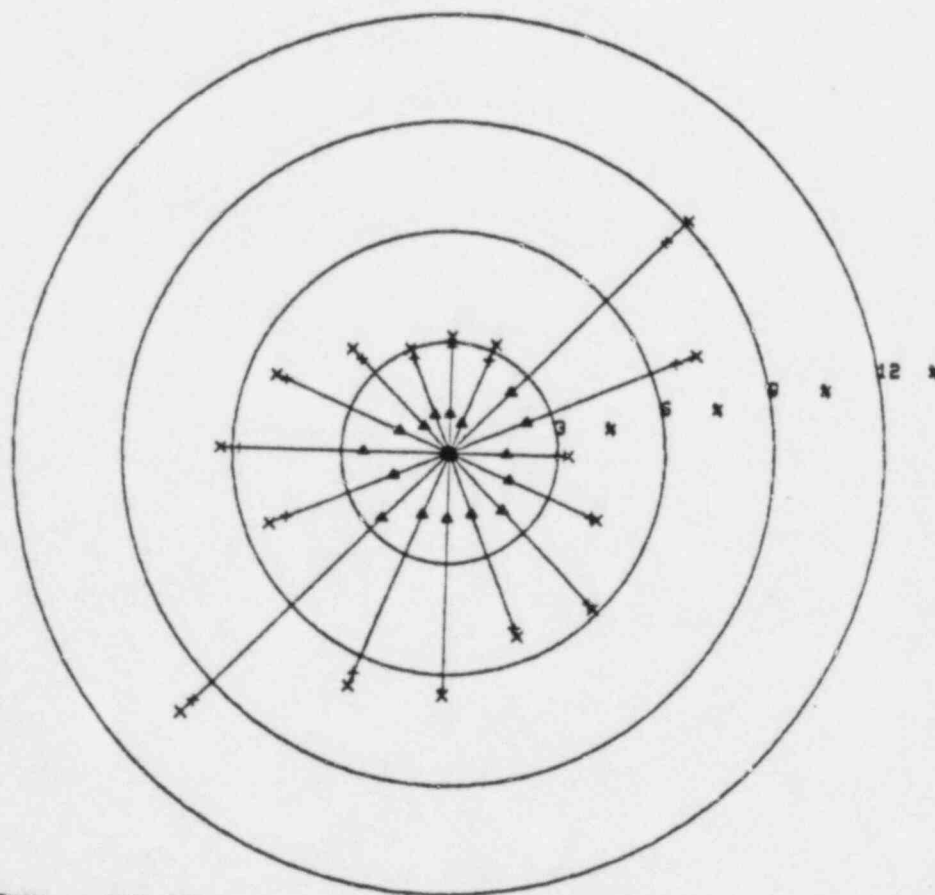
6.8 PERCENT CALMS  
(CALMS DEFINED AS SPEED LESS THAN 0.5 )

## **GEORGIA POWER COMPANY**

EDWIN I. HATCH NUCLEAR PLANT  
ANNUAL REPORT

10/23m WIND ROSE  
(4/1/83 - 6/30/83)

FIGURE 2.2-3



▲ WIND SPEED LESS THAN 3.5 MPH  
 + WIND SPEED LESS THAN 7.5 MPH  
 x WIND SPEED LESS THAN 12.5 MPH  
 ◊ WIND SPEED GREATER THAN 12.5 MPH

10.8 PERCENT CALMS  
 (CALMS DEFINED AS SPEED LESS THAN 0.5 )

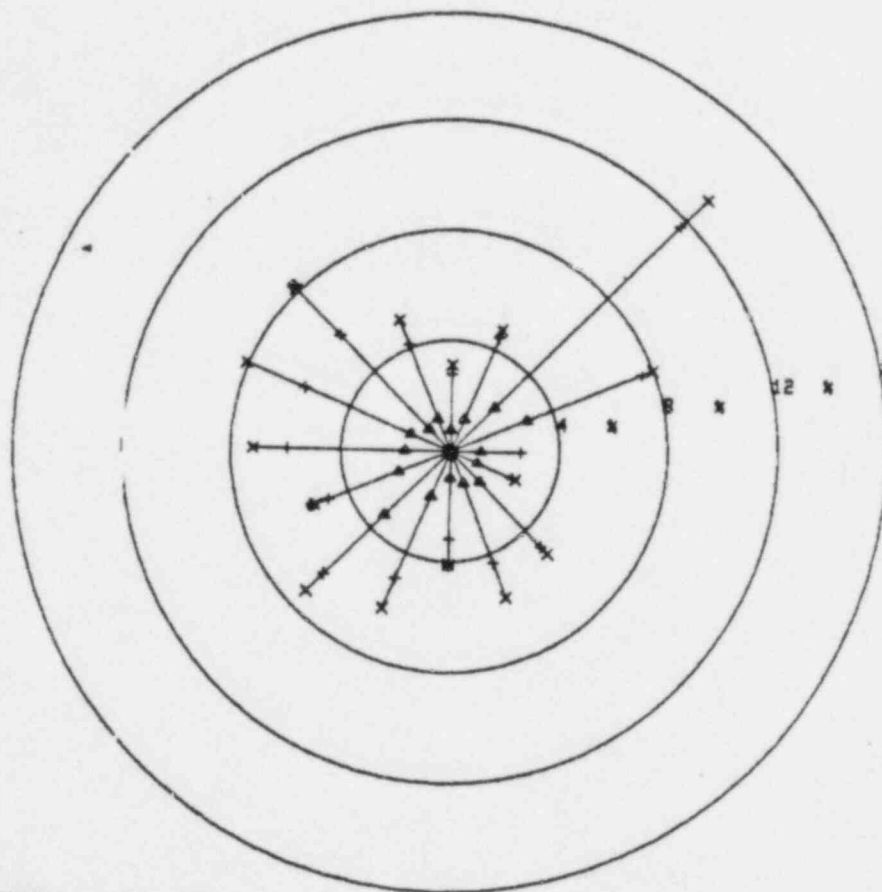
## GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT  
 ANNUAL REPORT

- 10m WIND ROSE  
 (7/1/83 - 9/30/83)

FIGURE 2.2-4





WIND ROSE  
(WINDS FROM)  
N  
↑

△ WIND SPEED LESS THAN 3.6 MPH  
+ WIND SPEED LESS THAN 7.6 MPH  
x WIND SPEED LESS THAN 12.5 MPH  
◊ WIND SPEED GREATER THAN 12.5 MPH

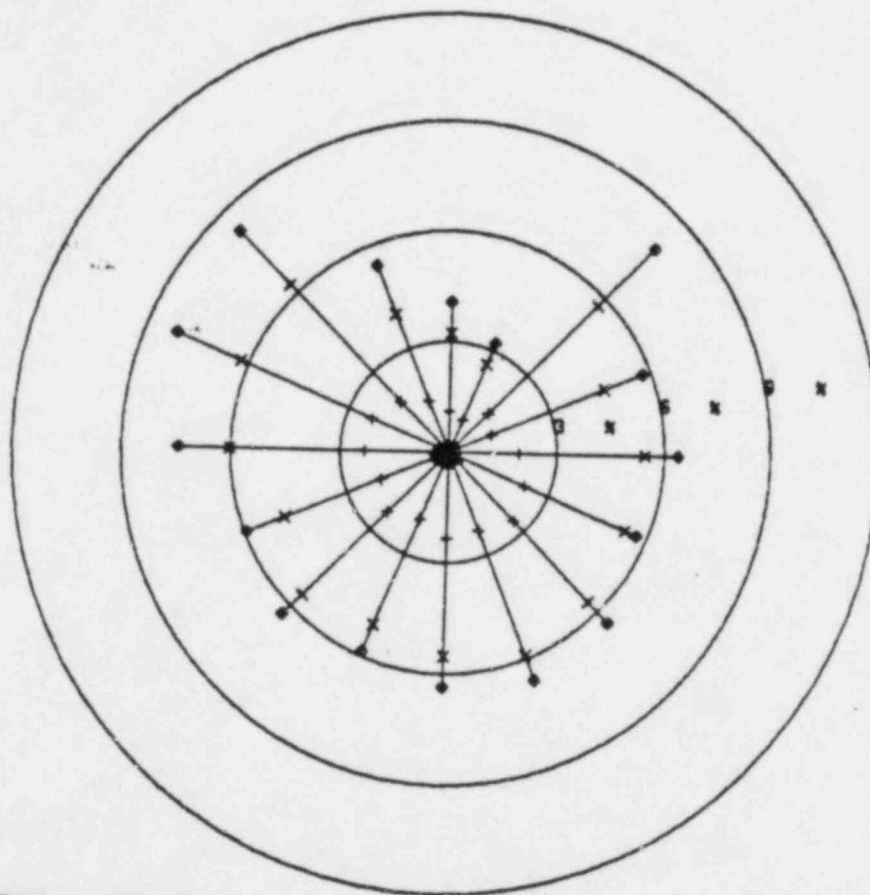
3.4 PERCENT CALMS  
(CALMS DEFINED AS SPEED LESS THAN 0.6 )

## GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT  
ANNUAL REPORT

10m WIND ROSE  
(10/1/83 - 12/31/83)

FIGURE 2.2-5



WIND ROSE  
(WINDS FROM)  
N  
↑

— WIND SPEED LESS THAN 3.5 MPH  
+ WIND SPEED LESS THAN 7.5 MPH  
x WIND SPEED LESS THAN 12.5 MPH  
• WIND SPEED GREATER THAN 12.5 MPH

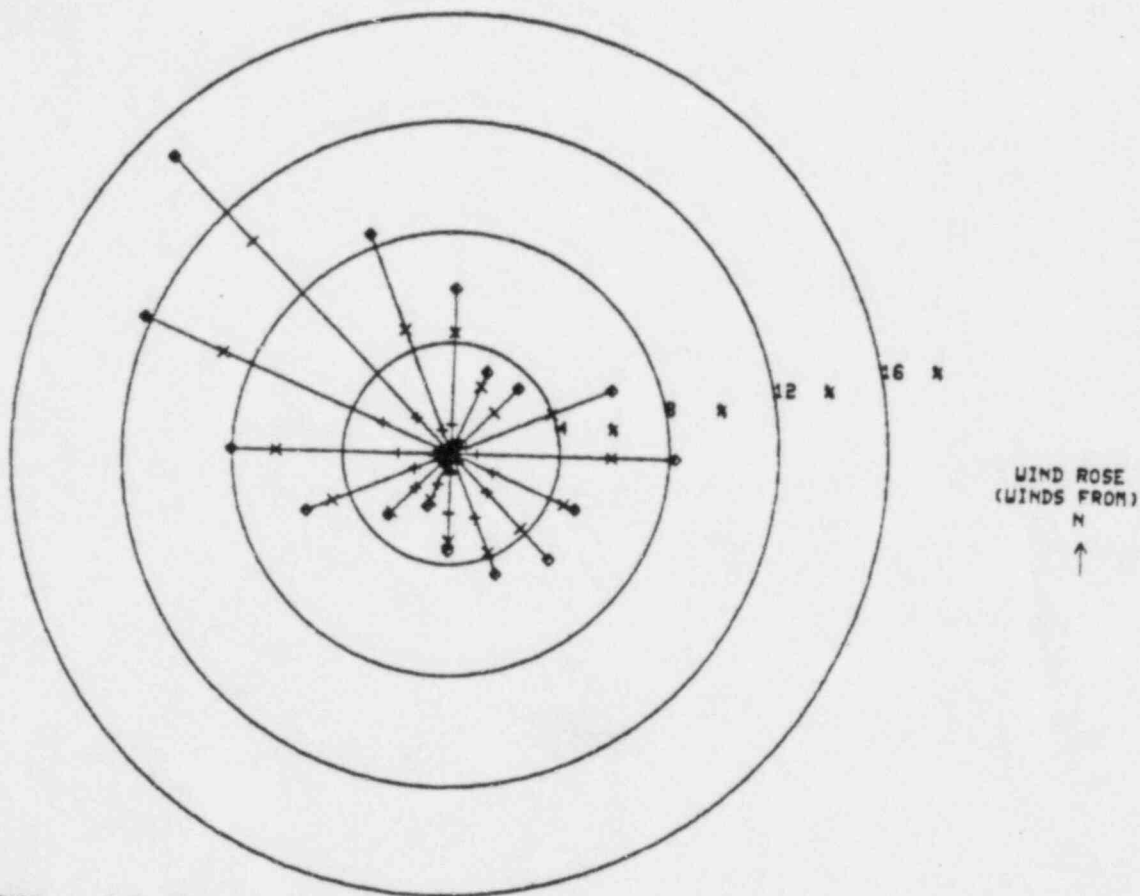
0.1 PERCENT CALMS  
(CALMS DEFINED AS SPEED LESS THAN 0.5 )

## **GEORGIA POWER COMPANY**

EDWIN I. HATCH NUCLEAR PLANT  
ANNUAL REPORT

60/46m WIND ROSE  
(1/1/83 - 12/31/83)

FIGURE 2.2-6



Δ WIND SPEED LESS THAN 3.5 MPH  
 + WIND SPEED LESS THAN 7.5 MPH  
 x WIND SPEED LESS THAN 12.5 MPH  
 ○ WIND SPEED GREATER THAN 12.5 MPH

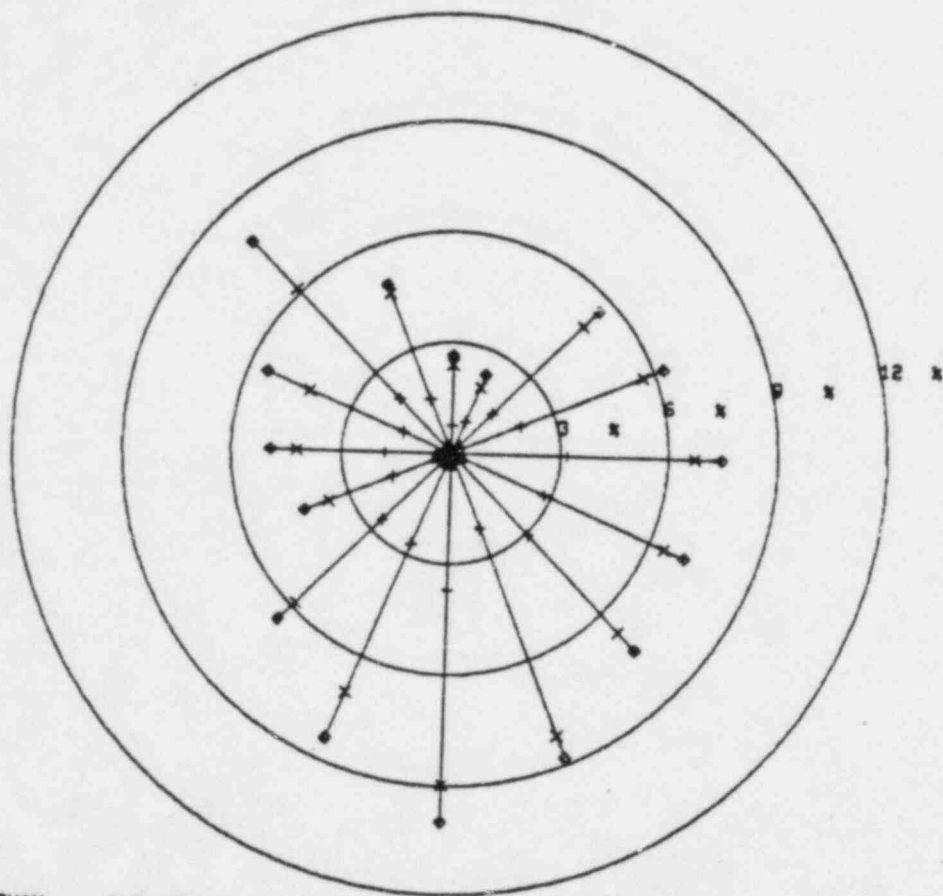
0.0 PERCENT CALMS  
 (CALMS DEFINED AS SPEED LESS THAN 0.5 )

## **GEORGIA POWER COMPANY**

EDWIN I. HATCH NUCLEAR PLANT  
 ANNUAL REPORT

46m WIND ROSE  
 (1/1/83 - 3/31/83)

FIGURE 2.2-7



WIND ROSE  
(WINDS FROM)  
N  
↑

△ WIND SPEED LESS THAN 3.5 MPH  
+ WIND SPEED LESS THAN 7.5 MPH  
x WIND SPEED LESS THAN 12.5 MPH  
◊ WIND SPEED GREATER THAN 12.5 MPH

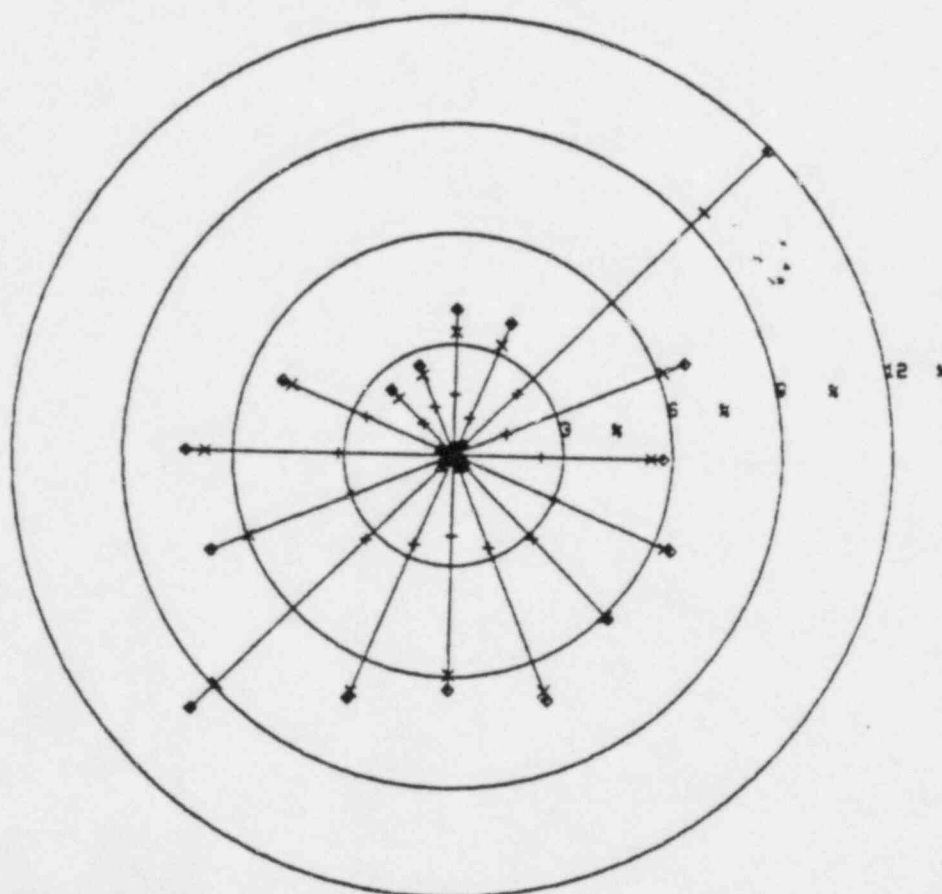
0.1 PERCENT CALMS  
(CALMS DEFINED AS SPEED LESS THAN 0.5 )

## GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT  
ANNUAL REPORT

60/46m WIND ROSE  
(4/1/83 - 6/30/83)

FIGURE 2.2-8



WIND ROSE  
(WINDS FROM)  
N  
↑

△ WIND SPEED LESS THAN 3.5 MPH  
+ WIND SPEED LESS THAN 7.5 MPH  
x WIND SPEED LESS THAN 12.5 MPH  
● WIND SPEED GREATER THAN 12.5 MPH

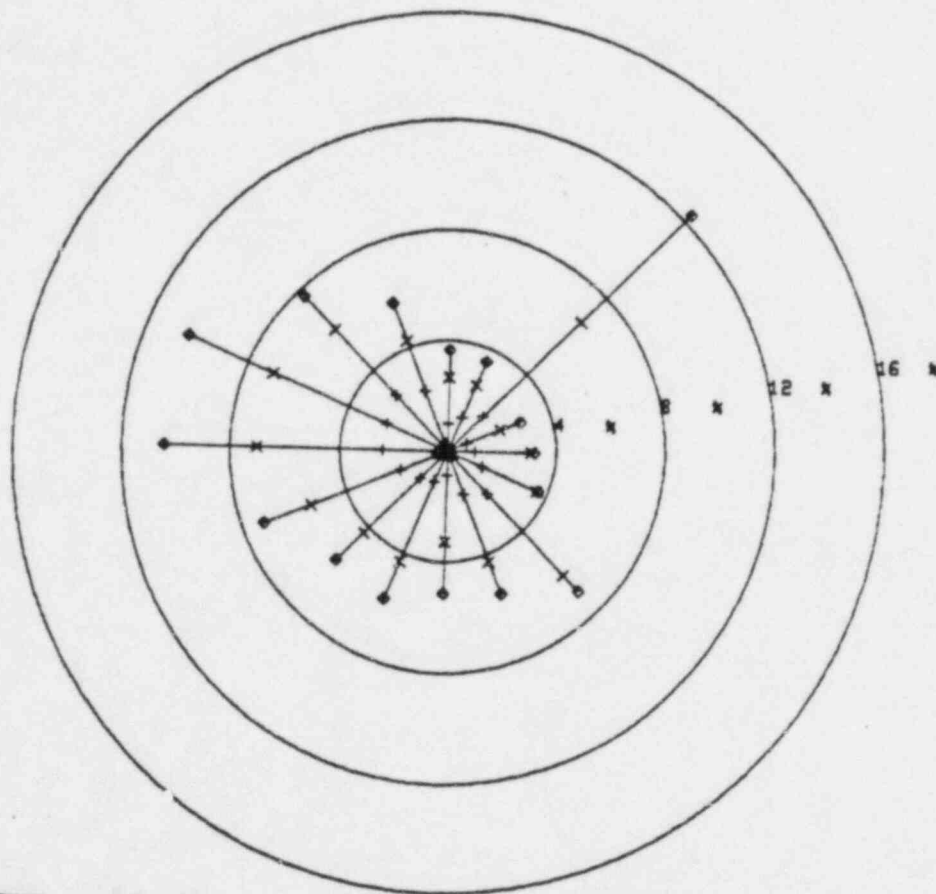
0.2 PERCENT CALMS  
(CALMS DEFINED AS SPEED LESS THAN 0.5)

## GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT  
ANNUAL REPORT

60m WIND ROSE  
(7/1/83 - 9/30/83)

FIGURE 2.2-9



WIND ROSE  
(WINDS FROM)  
N  
↑

△ WIND SPEED LESS THAN 3.5 MPH  
+ WIND SPEED LESS THAN 7.5 MPH  
x WIND SPEED LESS THAN 12.5 MPH  
○ WIND SPEED GREATER THAN 12.5 MPH

0.1 PERCENT CALMS  
(CALMS DEFINED AS SPEED LESS THAN 0.5 )

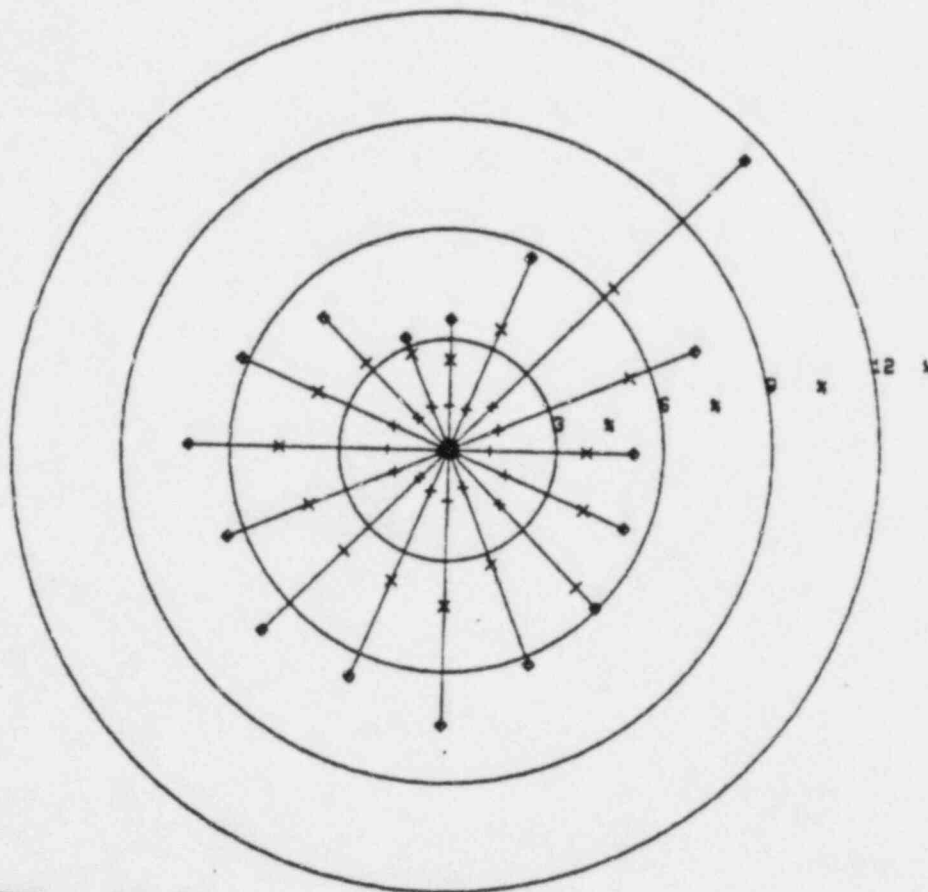
## GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT  
ANNUAL REPORT

60m WIND ROSE  
(10/1/83 - 12/31/83)

FIGURE 2.2-10





Δ WIND SPEED LESS THAN 3.5 MPH  
 + WIND SPEED LESS THAN 7.5 MPH  
 x WIND SPEED LESS THAN 12.5 MPH  
 • WIND SPEED GREATER THAN 12.5 MPH

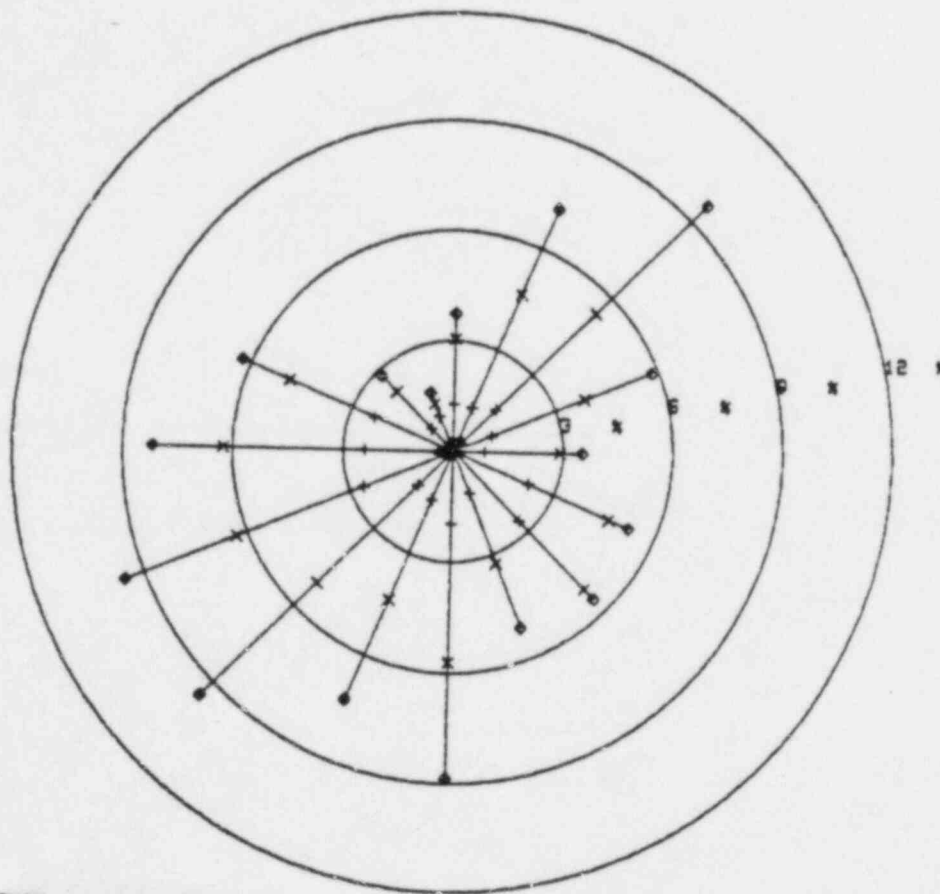
0.2 PERCENT CALMS  
 (CALMS DEFINED AS SPEED LESS THAN 0.5)

## **GEORGIA POWER COMPANY**

EDWIN I. HATCH NUCLEAR PLANT  
 ANNUAL REPORT

100m WIND ROSE  
 (5/1/83 - 12/31/83)

FIGURE 2.2-11



WIND ROSE  
(WINDS FROM)  
N  
A

△ WIND SPEED LESS THAN 3.5 MPH  
+ WIND SPEED LESS THAN 7.5 MPH  
x WIND SPEED LESS THAN 12.5 MPH  
◊ WIND SPEED GREATER THAN 12.5 MPH

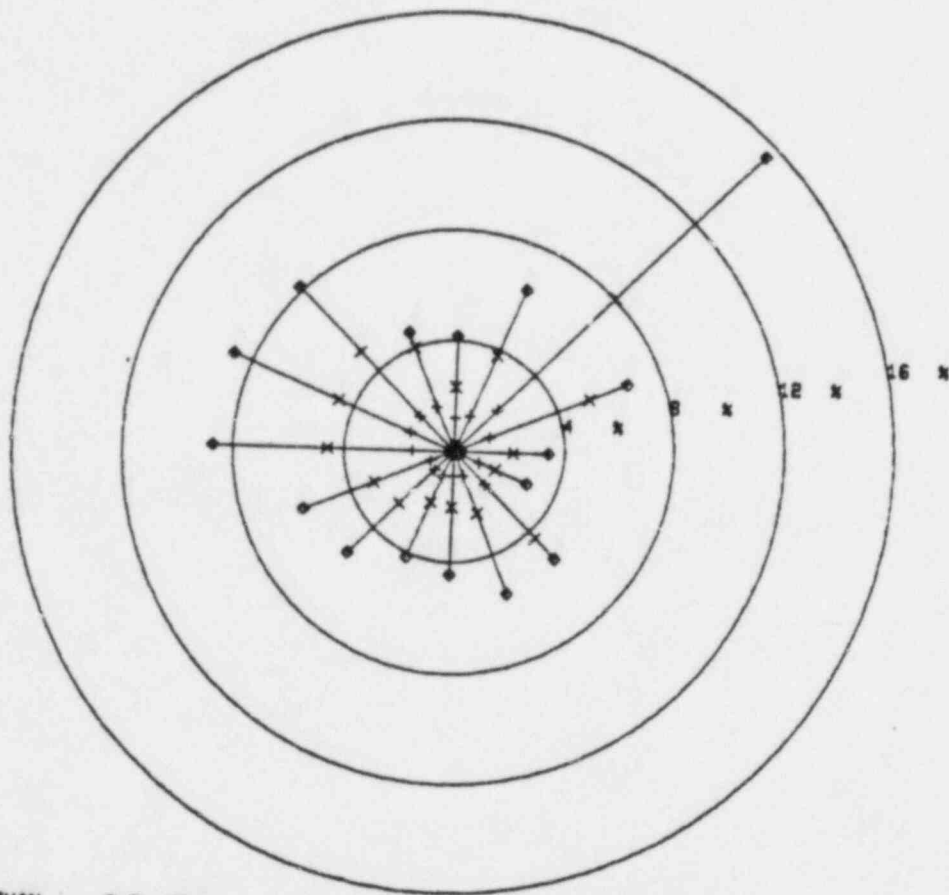
0.1 PERCENT CALMS  
(CALMS DEFINED AS SPEED LESS THAN 0.5 )

# **GEORGIA POWER COMPANY**

EDWIN I. HATCH NUCLEAR PLANT  
ANNUAL REPORT

100m WIND ROSE  
(7/1/83 - 9/30/83)

FIGURE 2.2-12



Δ WIND SPEED LESS THAN 3.5 MPH  
 + WIND SPEED LESS THAN 7.5 MPH  
 x WIND SPEED LESS THAN 12.5 MPH  
 ◊ WIND SPEED GREATER THAN 12.5 MPH

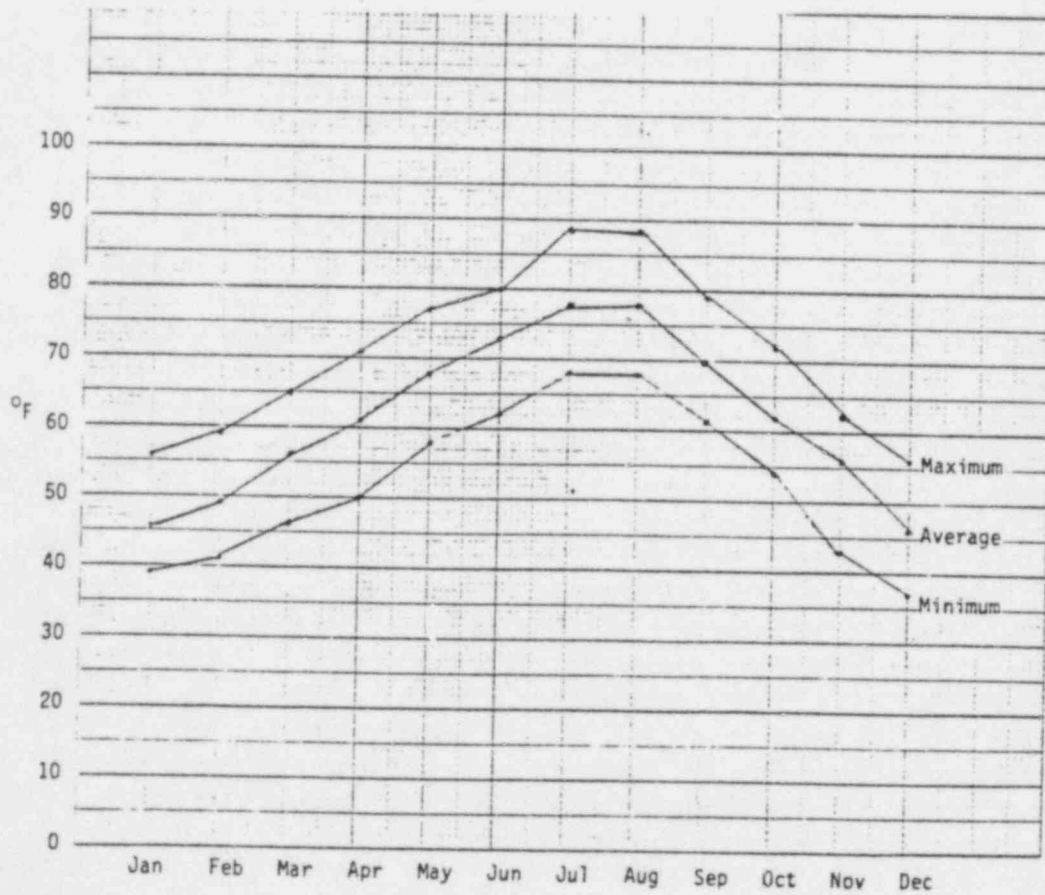
0.2 PERCENT CALMS  
 (CALMS DEFINED AS SPEED LESS THAN 0.5 )

## **GEORGIA POWER COMPANY**

EDWIN I. HATCH NUCLEAR PLANT  
 ANNUAL REPORT

100m WIND ROSE  
 (10/1/83 - 12/31/83)

FIGURE 2.2-13

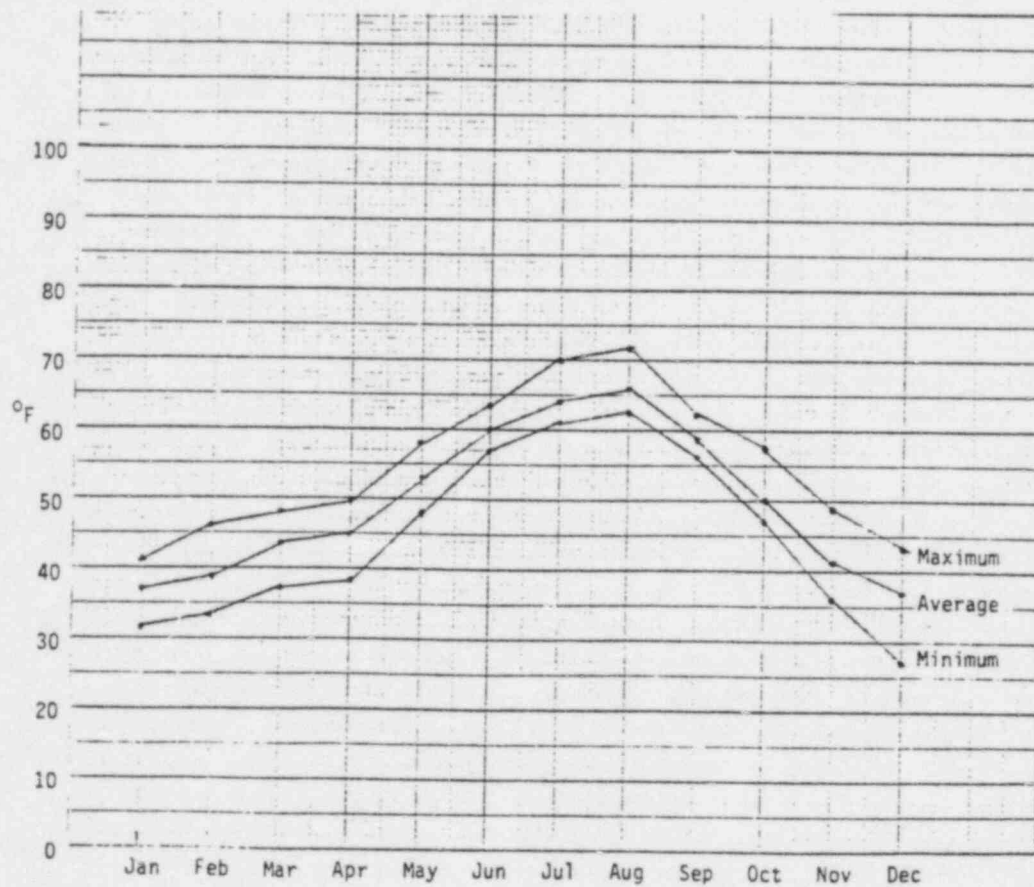


## **GEORGIA POWER COMPANY**

EDWIN I. HATCH NUCLEAR PLANT  
ANNUAL REPORT

AMBIENT TEMPERATURE - 1983

FIGURE 2.2-14



## GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT  
ANNUAL REPORT

DEW POINT TEMPERATURE - 1983

FIGURE 2.2-15

HNP  
ANNUAL REPORT

CHAPTER 3  
ADMINISTRATIVE CONTROLS

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
3.1	<u>SPECIFICATIONS</u>	3-1
3.2	<u>DISCUSSION</u>	3-1



HNP  
ANNUAL REPORT

3. ADMINISTRATIVE CONTROLS

3.1 Specification

In accordance with Section 5.7.1 of the HNP-ETS, Units 1 and 2, the HNP Annual Environmental Surveillance Report will include a summary of all instances of Environmental Technical Specifications (ETS) noncompliances and corrective action taken, changes in federal and state permits and certificates, changes in the Environmental Program Description Document (EPDD), changes in station design or operation which could involve an environmental impact, changes made to the ETS, and copies of all reports regarding station discharges made in accordance with NPDES Permit No. GA-0004120.

3.2 Discussion

The Georgia Department of Natural Resources reissued a National Pollutant Discharge Elimination System (NPDES) permit for Plant Edwin I. Hatch reflecting current EPA effluent guidelines. The effective date of the permit is August 1, 1983, and shall expire December 5, 1987.

There were no changes in station design or operation in 1983 which could involve an environmental effect.

Copies of all reports regarding station discharges made in accordance with NPDES Permit No. 0004120 are included in Appendix A.

HNP  
ANNUAL REPORT

APPENDIX

A

NPDES OPERATION MONITORING REPORTS  
PLANT EDWIN I. HATCH  
1983

100-100000-100000  
100-100000-100000  
100-100000-100000  
100-100000-100000



Georgia Power

POWER SUPPLY ENGINEERING AND SERVICES

May 9, 1983

PLANT HATCH

NPDES Quarterly Report  
Permit No. GA 0004120

Mr. Gene B. Welsh, Chief  
Water Protection Branch  
Environmental Protection Division  
270 Washington Street, S.W.  
Atlanta, Georgia 30334

Dear Mr. Welsh:

As required by the above references NPDES Permit, we hereby submit the Operation Monitoring Report for the quarter ending March 31, 1983.

If you have any questions or comments, please advise.

Sincerely,

T. E. Byerley  
Manager of Environmental Affairs

RDM:bjk

Attachment

bc: All Without Attachment

W. C. Philips  
R. H. Bohler  
File: EV911-022  
EV925-022

QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 01-01-83  
To: 03-31-83

Permit Number: GA0004120

Discharge Location: 001B Cooling Tower Blowdown

Frequency of Analysis: 1/Wk

Location: Type of Sample:	Intake In Situ	Mixing Zone In Situ	Condenser Grab
Parameter:	Temperature <u>Deg F</u>	Temperature <u>Deg F</u>	Chlorine <u>mg/l Cl2</u>
Limits:	T of 5 Max. 90	T of 5 Max. 90	Avg. 0.2 Max. 0.5
<u>Date</u>			
01-05-83	57	57	1
01-12-83	48	48	
01-19-83	44	44	
01-26-83	45	45	
02-02-83	53	53	
02-09-83	48	48	
02-16-83	48	48	
02-23-83	54	54	
03-02-83	53	53	
03-09-83	61	61	
03-16-83	61	61	
03-23-83	57	58	
03-30-83	59	58	
Number of Samples:	9	9	
Maximum Value:	61	61	
Minimum Value:	44	44	
Limits Exceeded:	0	0	

Note 1 - We are no longer required to monitor chlorine at this point

QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 01-01-83  
To: 03-31-83

Permit Number: GA0004120

Discharge Location: 001A1 Low Volume Waste (Neut Tank)  
Type of Sample: Grab  
Frequency of Analysis: 2/Mo

Parameter:	Suspended Solids mg/l	Oil and Grease mg/l
Limits:	Avg. 30 Max. 100	Avg. 15 Max. 30
<u>Date</u>		
01-04-83	0.1	5.8
01-17-83	3.7	<5.0
02-07-83	0.7	<5.0
02-21-83	367.0	<5.0
03-07-83	1.0	<5.0
03-21-83	90.7	<5.0
Number of Samples:	6	6
Average Value:	77.2	5.0
Maximum Value:	367.0	5.8
Minimum Value:	0.1	<5.0
Limits Exceeded:	2	0

QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 01-01-83  
To: 03-31-83

Permit Number: GA0004120

Discharge Location: 001A2 Low Volume Waste (Pres Filter Backwash)  
Type of Sample: Grab  
Frequency of Analysis: 1/Qtr

Parameter:	Suspended Solids mg/l	Oil and Grease mg/l
Limits:	Avg. 30 Max. 100	Avg. 15 Max. 30

<u>Location</u>	<u>Date</u>		
Filter A	02-07-83	7.0	<5.0
Filter B	02-09-83	2.4	<5.0
Filter C	02-09-83	1.5	<5.0
Filter D	02-07-83	2.7	<5.0

Number of Samples:	4	4
Average Value:	3.4	<5.0
Maximum Value:	7.0	<5.0
Minimum Value:	1.5	<5.0
Limits Exceeded:	0	0

QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 01-01-83  
To: 03-31-83

Permit Number: GA004120

Discharge Location: 001C Sewage Treatment Plant  
Type of Sample: Grab  
Frequency of Analysis: 2/Yr

Parameter:	5-Day BOD5 mg/l	Free Chlorine mg/l
Limits:	Avg. 30 Max. 45	-- --
<u>Date</u>		
01-07-83	<1	0.3
Limits Exceeded:	0	---



QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 01-01-83  
To: 03-31-83

Permit Number: GA0004120

Discharge Location: 001D1 Liquid Radwaste System Unit 1  
Type of Sample: Grab  
Frequency of Analysis: 2/Mo

Parameter:	TSS mg/l	Oil and Grease mg/l	pH
Limits:	Avg. 30 Max. 100	Avg. 15 Max. 20	
<u>Date</u>			
01-03-83	18.6	3.0	6.5
01-17-83	0.1	0.0	6.0
02-07-83	4.0	1.0	7.6
02-21-83	5.0	0.9	6.3
03-07-83	24.9	2.2	6.0
03-21-83	59.6	13.7	5.7
Number of Samples:	6	6	6
Average Value:	18.7	3.5	-
Maximum Value:	59.6	13.7	7.6
Minimum Value:	0.1	0.0	5.7
Limits Exceeded:	0	0	-

QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 01-01-83  
To: 03-31-83

Permit Number: GA0004120

Discharge Location: 001D1 Liquid Radwaste System Unit 2  
Type of Sample: Grab  
Frequency of Analysis: 2/Mo

Parameter:	TSS mg/l	Oil and Grease mg/l	pH
Limits:	Avg. 30 Max. 100	Avg. 15 Max. 20	
<u>Date</u>			
01-03-83	1.3	6.0	7.6
01-17-83	0.0	2.4	6.0
02-07-83	9.0	7.0	5.7
02-21-83	8.7	0.3	6.0
03-07-83	40.0	20.0	6.5
03-21-83	5.0	1.2	6.0
Number of Samples:	6	6	6
Average Value:	10.7	6.2	-
Maximum Value:	40.0	20.0	7.6
Minimum Value:	0.0	0.3	5.7
Limits Exceeded:	0	0	-

## QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
 Plant Hatch  
 P. O. Box 4545  
 Atlanta, Georgia 30302

From: 01-01-83  
 To: 03-31-83

Permit Number: GA0004120

Discharge Location: 001E1 Combined Plant Waste Unit 1

Frequency of Analysis: 1/Wk

Type of Sample: Parameter:	In Situ Temperature Deg F	Grab Average Free Chlorine mg/l Cl2	Grab pH
Limits:	-	-	Min. 6.0 Max. 9.0
<u>Date</u>			
01-06-83	54	<0.1	6.9
01-11-83	52	<0.1	7.1
01-20-83	45	<0.1	7.1
01-26-83	45	<0.1	7.2
02-02-83	56	<0.1	7.3
02-09-83	49	<0.1	7.3
02-16-83	52	<0.1	7.3
02-23-83	70	<0.1	6.8
03-02-83	41	<0.1	7.5
03-09-83	80	<0.1	7.0
03-16-83	82	<0.1	7.3
03-23-83	77	<0.1	7.3
03-30-83	70	<0.1	7.0
Number of Samples:	9	9	9
Average Value:	-	<0.1	-
Maximum Value:	82	<0.1	7.5
Minimum Value:	41	<0.1	6.8
Limits Exceeded:	-	-	0

QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 01-01-83  
To: 03-31-83

Permit Number: GA0004120

Discharge Location: 001E1 Combined Plant Waste Unit 2

Frequency of Analysis: 1/Wk

Type of Sample: Parameter:	In Situ Temperature Deg F	Grab Average Free Chlorine mg/l Cl2	Grab pH
Limits:	-	-	Min. 6.0 Max. 9.0
<u>Date</u>			
01-06-83	57	<0.1	6.7
01-11-83	54	<0.1	7.0
01-20-83	51	<0.1	6.5
01-26-83	58	<0.1	6.6
02-02-83	63	<0.1	6.9
02-09-83	54	<0.1	6.8
02-16-83	66	<0.1	6.6
02-23-83	68	<0.1	6.6
03-02-83	44	<0.1	6.8
03-09-83	77	<0.1	6.6
03-16-83	81	<0.1	6.9
03-23-83	72	<0.1	7.1
03-30-83	75	<0.1	6.9
Number of Samples:	9	9	9
Average Value:	-	<0.1	-
Maximum Value:	81	<0.1	7.1
Minimum Value:	44	<0.1	6.5
Limits Exceeded:	-	-	0

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.



Mr. T. E. Byerley  
Manager of Environmental Affairs

# SERVICE WATER CHLORINATION DATA

## DATA SHEET 2

WEEKLY

UNIT NO. I

DATE	FREQUENCY CYCLE/DAY	CL <sub>2</sub> INJECT MIN/CYCLE	CHLORINATORS			BIOTREND				CL <sub>2</sub>		DISCHARGE HOUR/DAY
			NO. 1	NO. 2	NO. 3	BEFORE	AFTER	FREE mg/l**		FREE mg/l*		
			#/24 HR	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	AVG.	MAX	
1/6	NA	cont	←			000						0
1/13	NA	cont	←			000						0
1/20	NA	cont	←			000						0
1/24	NA	cont	2450	450	—	1240	—	—	—	.23	.23	2
						LIMIT				0.20	0.50	2 HR/DAY

\* MEASURED AT POINT OF DISCHARGE TO RIVER DURING CHLORINATION CYCLE

\*\* MEASURED AT SERVICE WATER DISCHARGE TO CIRC WATER FLUME

DATA AND RESULTS REVIEWED	
Approved (✓)	Disapproved ( )
<u>Rod Daniel</u>	<u>1/31/83</u>
Signature	Date

CIRC WATER CHLORINATION DATA

DATA SHEET 1

UNIT NO:

WEEKLY

[illegible]

\* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

Rod Amell 2/24/85

DATA PACKAGE 1  
(DATA SHEET 1)

CIRC WATER CHLORINATION DATA

# SERVICE WATER CHLORINATION DATA

DATA SHEET 2

UNIT NO. I

WEEKLY

DATE	FREQUENCY CYCLE/DAY	CL <sub>2</sub> INJECT MIN/CYCLE	CHLORINATORS			BIOTREND				Cl <sub>2</sub>		
			NO. 1	NO. 2	NO. 3	BEFORE	AFTER	FREE mg/l**		FREE mg/l*		DISCHARGE
			#/24 HR	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	AVG.	MAX	HOURL/DAY
2/2/83	1	cont	250	NA	400	NA	NA	<1	<1	<1	<1	NONE
2/9/83	1	cont	250	250	NA	NA	NA	<1	<1	<1	<1	NONE
2/16/83	1	cont	250	250	NA	NA	NA	<1	<1	<1	<1	NONE
2/23/83	1	cont	250	550	NA	NA	NA	<1	<1	<1	<1	NONE
						LIMIT				0.20	0.50	2 HR/DAY

\* MEASURED AT POINT OF DISCHARGE TO RIVER DURING CHLORINATION CYCLE

\*\* MEASURED AT SERVICE WATER DISCHARGE TO CIRC WATER FLUME

DATA AND RESULTS REVIEWED	
Approved (✓)	Disapproved ( )
<u>Red Hamell</u>	<u>2/24/83</u>
Signature	Date



# SERVICE WATER CHLORINATION DATA

DATA SHEET 2

WEEKLY

UNIT NO. 1

			CHLORINATORS			BIOTREND				Cl <sub>2</sub>		
DATE	FREQUENCY	CL <sub>2</sub> INJECT	NO. 1	NO. 2	NO. 3	BEFORE	AFTER	FREE mg/l**		FREE mg/l*		DISCHARGE
	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	AVG.	MAX	HOUR/DAY
3-2-83	1	CONT.	250	550	005	NA	NA	<.1	<.1	<.1	<.1	NONE
3-9-83	1	CONT.	200	500	002	NA	NA	<.1	<.1	<.1	<.1	NONE
3-17-83	1	CONT.	200	500	005	NA	NA	<.1	<.1	<.1	<.1	NONE
3-22-83	1	CONT.	200	300	200	NA	NA	<.1	<.1	<.1	<.1	NONE
3-31-83	1	CONT.	150	950	005	NA	NA	.2	.3*	<.1	<.1	NONE
LIMIT										0.20	0.50	2 HR/DAY

- \* MEASURED AT POINT OF DISCHARGE TO RIVER DURING CHLORINATION CYCLE
- \*\* MEASURED AT SERVICE WATER DISCHARGE TO CIRC WATER FLUME

\* Reduced flow to total  
of 900  
#1 #2 #3  
150 750 005

DATA AND RESULTS REVIEWED

*Steve Lee* Disapproved ( )

Signature Date 4-1-83

Page 2 of 2

HNP-7606

ROS

DATA PACKAGE 2  
(DATA SHEET 2)

## CIRC WATER CHLORINATION DATA

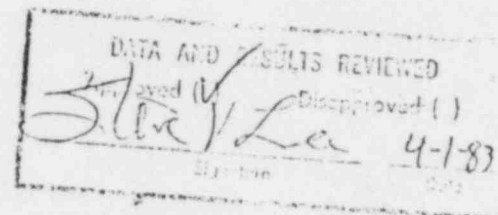
## DATA SHEET 1

WEEKLY

UNIT NO: 1

DATE	FREQUENCY CYCLE/DAY	CL <sub>2</sub> INJECT MIN/CYCLE	CHLORINATORS		BIOTREND		CL <sub>2</sub>			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l*		DISCHARGE	
			#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HOURLY/DAY	
3-28-83	3	30	005	400	NA	NA	<.1	NA	NONE	RA
3-29-83	3	30	005	400	NA	NA	<.1	NA	NONE	JH
3-17-83	3	30	005	005	NA	NA	<.1	NA	NONE	JH
3-23-83	3	30	005	005	NA	NA	<.1	NA	NONE	JH
LIMIT							0.20	0.50	2 HR/DAY	

\* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

DATA PACKAGE 1  
(DATA SHEET 1)

# SERVICE WATER CHLORINATION DATA

## DATA SHEET 2

WEEKLY

UNIT NO. II

			CHLORINATORS			BIOTREND				Cl <sub>2</sub>		
DATE	FREQUENCY	CL <sub>2</sub> INJECT	NO. 1	NO. 2	NO. 3	BEFORE	AFTER	FREE mg/l**		FREE mg/l*		DISCHARGE
	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	AVG.	MAX	HR/24
1/6	NA	cont	←			007						→
1/13			←			000						→
1/20	↓	↓	6			007						→
1/24	↓	↓	~450	~450	-	1140	-	0.23	0.23	0.23	0.23	2
						LIMIT				0.20	0.50	2 HR/DAY

\* MEASURED AT POINT OF DISCHARGE TO IVER DURING CHLORINATION CYCLE

\*\* MEASURED AT SERVICE WATER DISCHARGE TO CIRC WATER FLUME

DATA AND RESULTS REVIEWED

Approved ☒ Disapproved ☐

Red Farrell 1/31/83

DATA PACKAGE 2  
(DATA SHEET 2)

Page 2 of 2

HNP-7606 ROS

## CIRC WATER CHLORINATION DATA

## DATA SHEET 1

WEEKLY

UNIT NO: II

DATE	FREQUENCY CYCLE/DAY	CL <sub>2</sub> INJECT MIN/CYCLE	CHLORINATORS		BIOTREND		Cl <sub>2</sub>			INITIALS
			NO. 1 #/24 HR	NO. 2 #/24 HR	BEFORE TIME	AFTER TIME	FREE mg/l*		DISCHARGE HOUR/DAY	
1/6/83	3	40	-	-	-	-	-	-	-	W.B.
1/13/83	3	40	-	-	-	-	-	-	-	W.B.
1/20/83	3	40	-	-	-	-	-	-	-	W.B.
1/27/83	3	40	-	6700	1250	-	0.23	0.23	-	W.B.
							0.20	0.50	2 HR/DAY	

\* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

✓  
*Red Harrell* 1/31/83

## CIRC WATER CHLORINATION DATA

## DATA SHEET 1

WEEKLY

UNIT NO:

11

DATE	FREQUENCY CYCLE/DAY	CL <sub>2</sub> INJECT MIN/CYCLE	CHLORINATORS		BIOTREND		Cl <sub>2</sub>			INITIALS
			NO. 1 #/24 HR	NO. 2 #/24 HR	BEFORE TIME	AFTER TIME	FREE mg/l* AVG.	DISCHARGE MAX	HOUR/DAY	
2/2/83	3	40	002	5600	NA	NA	<1	.2	NONE	JPB
2/9/83	3	40	005	5600	NA	NA	<1	.2	NONE	RA
2/16/83	3	40	005	5600	NA	NA	<1	.2	NONE	RA
2/23/83	3	40	005	5600	NA	NA	<1	.2	NONE	RA
LIMIT							0.20	0.50	2 HR/DAY	

\* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

DATA AND RESULTS REVIEWED	
Approved (✓)	Disapproved ( )
<i>Red Hamell</i>	2/24/83
Signature	Date

# CIRC WATER CHLORINATION DATA

DATA PACKAGE 1  
(DATA SHEET 1)

UNIT NO: 2

DATE	FREQUENCY CYCLE/DAY	CL <sub>2</sub> INJECT MIN/CYCLE	CHLORINATORS		BIOTREND		CL <sub>2</sub>			INITIALS
			NO. 1 #/24 HR	NO. 2 #/24 HR	BEFORE TIME	AFTER TIME	FREE mg/l* DISCHARGE			
							AVG.	MAX	HOURLY/DAY	
3-28-83	3	40	005	400	NA	NA	<.1	NA	NONE	RA
3-9-83	3	40	005	400	NA	NA	<.1	NA	NONE	JH
3-17-83	3	40	005	005	NA	NA	<.1	NA	NONE	JH
3-25-83	3	40	005	005	NA	NA	<.1	NA	NONE	JH
<hr/>										
LIMIT							0.20	0.50	2 HR/DAY	

DATA AND RESULTS REVIEWED

Approved: *[Signature]* Date: 4-1-83

*[Signature]* 4-1-83



# SERVICE WATER CHLORINATION DATA

## DATA SHEET 2

WEEKLY

UNIT NO. 2

DATE	FREQUENCY	CL <sub>2</sub> INJECT	CHLORINATORS			BIOTREND				Cl <sub>2</sub>		
			NO. 1	NO. 2	NO. 3	BEFORE	AFTER	FREE mg/l**		FREE mg/l*		DISCHARGE
	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	AVG.	MAX	HOUR/DAY
3-2-83	1	CONT	250	550	005	NA	NA	<.1	<.1	<.1	<.1	NONE
3-9-83	1	CONT	200	500	005	NA	NA	<.1	<.1	<.1	<.1	NONE
3-17-83	1	CONT	200	500	005	NA	NA	<.1	<.1	<.1	<.1	NONE
3-24-83	1	CONT	200	500	200	NA	NA	<.1	<.1	<.1	<.1	NONE
LIMIT										0.20	0.50	2 HR/DAY

\* MEASURED AT POINT OF DISCHARGE TO RIVER DURING CHLORINATION CYCLE

\*\* MEASURED AT SERVICE WATER DISCHARGE TO CIRC WATER FLUME

DATA AND RESULTS REVIEWED

*John Lee* (Signature)

4-1-83 (Date)





July 22, 1983

EV925-022

Mr. Gene B. Welsh, Chief  
Water Protection Branch  
Environmental Protection Division  
270 Washington Street, S.W.  
Atlanta, Georgia 30334

Re: Plant Arkwright	NPDES Permit No. GA 0026069
Plant Bowen	NPDES Permit No. GA 0001449
Plant Branch	NPDES Permit No. GA 0026051
Plant Hammond	NPDES Permit No. GA 0001457
Plant Hatch	NPDES Permit No. GA 0004120
Plant McDonough-Atkinson	NPDES Permit No. GA 0001431
Plant McManus	NPDES Permit No. GA 0003794
Plant Mitchell	NPDES Permit No. GA 0001465
Plant Scherer	NPDES Permit No. GA 0035564
Plant Wansley	NPDES Permit No. GA 0026778
Plant Yates	NPDES Permit No. GA 0001473

Dear Mr. Welsh:

As required by the above referenced NPDES Permits, we hereby submit the Operation Monitoring Reports for each of the corresponding power plants for the quarter ending June 30, 1983. Please note that the Plant Hatch report is incomplete. As of this date, my office has not received the river temperature data for the last half of June, nor the circulating water chlorination data reports for the months of April and June. When this data is received, it will be transmitted to your office.

If you have any questions or comments, please advise.

Sincerely,

T. E. Byerley  
Manager of Environmental Affairs

RDM:bjk

Attachments

QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 04-01-83  
To: 06-30-83

Permit Number: GA0004120

Discharge Location: 001B Cooling Tower Blowdown

Frequency of Analysis: 1/Wk

Location: Type of Sample:	Intake In Situ	Mixing Zone In Situ	Condenser Grab
Parameter:	Temperature <u>Deg F</u>	Temperature <u>Deg F</u>	Chlorine <u>mg/l Cl2</u>
Limits:	T of 5 Max. 90	T of 5 Max. 90	Avg. 0.2 Max. 0.5
<u>Date</u>			
04-06-83	64	63	1
04-14-83	64	64	
04-21-83	59	59	
04-27-83	62	62	
05-04-83	69	69	
05-11-83	72	72	
05-18-83	73	73	
05-25-83	77	77	
06-01-83	79	79	
06-08-83	77	77	
Number of Samples:	10	10	
Maximum Value:	79	79	
Minimum Value:	59	59	
Limits Exceeded:	0	0	

Note 1 - We are no longer required to monitor chlorine at this point

QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 04-01-83  
To: 06-30-83

Permit Number: GA0004120

Discharge Location: 001A1 Low Volume Waste (Nent Tank)  
Type of Sample: Grab  
Frequency of Analysis: 2/Mo

Parameter:	Suspended Solids mg/l	Oil and Grease mg/l
Limits:	Avg. 30 Max. 100	Avg. 15 Max. 30
<u>Date</u>		
04-04-83	15.7	<5.0
04-18-83	0.6	<5.0
05-02-83	0.6	<5.0
05-16-83	1.0	<5.0
06-06-83	1.7	<5.0
06-21-83	18.4	3.0
Number of Samples:	6	6
Average Value:	6.3	<5.0
Maximum Value:	18.4	3.0
Minimum Value:	0.6	<5.0
Limits Exceeded:	0	0

QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 04-01-83  
To: 06-30-83

Permit Number: GA0004120

Discharge Location: 001A2 Low Volume Waste (Pres Filter Backwash)  
Type of Sample: Grab  
Frequency of Analysis: 1/Qtr

Parameter:	Suspended Solids		Oil and Grease	
	mg/l		mg/l	
Limits:	Avg.	30	Avg.	15
	Max.	100	Max.	30
<u>Location</u>	<u>Date</u>			
Filter A	05-02-83	1.2	<5.0	
Filter B	05-02-83	0.5	<5.0	
Filter C	05-02-83	0.5	<5.0	
Filter D	05-02-83	1.0	<5.0	
Number of Samples:	4		4	
Average Value:	0.8		<5.0	
Maximum Value:	1.2		<5.0	
Minimum Value:	0.5		<5.0	
Limits Exceeded:	0		0	

QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 04-01-83  
To: 06-30-83

Permit Number: GA0004120

Discharge Location: 001D1 Liquid Radwaste System Unit 1  
Type of Sample: Grab  
Frequency of Analysis: 2/Mo

Parameter:	TSS mg/l	Oil and Grease mg/l	pH
Limits:	Avg. 30 Max. 100	Avg. 15 Max. 20	
<u>Date</u>			
04-04-83	3.7	5.1	6.8
04-18-83	7.0	1.6	6.1
05-02-83	28.0	9.2	9.0
05-16-83	2.0	3.3	6.8
06-06-83	20.0	11.0	6.9
06-20-83	4.0	2.0	6.0
Number of Samples:	6	6	6
Average Value:	10.7	5.4	-
Maximum Value:	28.0	11.0	9.0
Minimum Value:	2.0	1.6	6.0
Limits Exceeded:	0	0	0

## QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
 Plant Hatch  
 P. O. Box 4545  
 Atlanta, Georgia 30302

From: 04-01-83  
 To: 06-30-83

Permit Number: GA0004120

Discharge Location: 001D1 Liquid Radwaste System Unit 2  
 Type of Sample: Grab  
 Frequency of Analysis: 2/Mo

Parameter:	TSS mg/l	Oil and Grease mg/l	pH
Limits:	Avg. 30 Max. 100	Avg. 15 Max. 20	
<u>Date</u>			
04-04-83	4.4	7.6	9.0
04-18-83	4.2	0.7	7.1
05-03-83	2.0	6.8	6.5
05-16-83	1.0	1.2	6.7
06-06-83	13.4	9.7	6.0
06-20-83	5.0	1.0	7.0
Number of Samples:	6	6	6
Average Value:	5.0	4.5	-
Maximum Value:	13.4	9.7	9.0
Minimum Value:	1.0	0.7	6.0
Limits Exceeded:	0	0	0

## QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
 Plant Hatch  
 P. O. Box 4545  
 Atlanta, Georgia 30302

From: 04-01-83  
 To: 06-30-83

Permit Number: GA00004120

Discharge Location: 001E1 Combined Plant Waste Unit 1

Frequency of Analysis: 1/Wk

Type of Sample: Parameter:	In Situ Temperature Deg F	Grab Average Free Chlorine mg/l Cl <sub>2</sub>	Grab pH
Limits:	-	-	Min. 6.0 Max. 9.0
<u>Date</u>			
04-08-83	67	<0.1	6.9
04-13-83	69	<0.1	6.7
04-20-83	61	<0.1	6.5
04-27-83	66	<0.1	7.1
05-04-83	79	<0.1	7.5
05-11-83	76	<0.1	7.5
05-18-83	84	<0.1	7.6
05-25-83	82	<0.1	7.4
06-01-83	82	0.1	7.3
06-08-83	84	0.1	7.5
06-15-83	86	0.2	7.4
06-30-83	84	0.1	7.4
Number of Samples:	12	12	12
Average Value:	--	0.1	--
Maximum Value:	86	0.2	7.6
Minimum Value:	61	<0.1	6.5
Limits Exceeded:	--	--	--



## QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
 Plant Hatch  
 P. O. Box 4545  
 Atlanta, Georgia 30302

From: 04-01-83  
 To: 06-30-83

Permit Number: GA0004120

Discharge Location: 001E1 Combined Plant Waste Unit 2

Frequency of Analysis: 1/Wk

Type of Sample: Parameter:	In Situ Temperature Deg F	Grab Average Free Chlorine mg/l Cl2	Grab pH
Limits:	-	-	Min. 6.0 Max. 9.0
<u>Date</u>			
04-08-83	68	<0.1	6.6
04-13-83	66	<0.1	6.7
04-20-83	57	<0.1	6.4
04-27-83	63	<0.1	6.9
05-04-83	70	<0.1	6.8
05-18-83	77	<0.1	6.9
05-11-83	70	<0.1	6.9
05-25-83	77	<0.1	7.1
06-01-83	78	0.1	7.3
06-08-83	78	0.1	6.9
06-15-83	83	0.1	6.9
06-23-83	84	<0.1	7.2
06-30-83	87	<0.1	7.2
Number of Samples:	13	13	13
Average Value:	--	<0.1	--
Maximum Value:	87	0.1	7.3
Minimum Value:	57	<0.1	6.4
Limits Exceeded:	--	--	--

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

Mr. T. E. Byerley  
 Manager of Environmental Affairs

GEORGIA POWER COMPANY  
PLANT HATCH  
ATTACHMENT I  
CIRC WATER CHLORINATION DATA

## DATA SHEET 1

WEEKLY

UNIT NO: 1

[illegible]

\* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

Page 10

HN2-7606 ROS

DATA PACKAGE 1  
(DATA SHEET 1)

ALL INFORMATION CONTAINED  
HEREIN IS UNCLASSIFIED  
DATE 11-11-83 BY SP-1  
J. Castellano 5-27-83

## DATA SHEET 1

WEEKLY

UNIT NO: 2

[illegible]

\* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

Page 2 of 2

HP-7606

ROS

DATA PACKAGE 1  
(DATA SHEET 1)



Georgia Power

July 28, 1983

PLANT HATCH  
NPDES Quarterly Report  
Permit No. GA 0004120

Mr. Gene B. Welsh, Chief  
Water Protection Branch  
Environmental Protection Division  
270 Washington Street, S.W.  
Atlanta, Georgia 30334

Dear Mr. Welsh:

As required by the above referenced NPDES Permit, we hereby submit the Operation Monitoring Report for the quarter ending June 30, 1983.

If you have any questions or comments, please advise.

Sincerely,

T. E. Byerley  
Manager of Environmental Affairs

RDM:bjk

Attachment

bc: All Without Attachment

W. C. Philips  
R. H. Bohler  
File: EV911-022  
EV925-022 ✓

QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 04-01-83  
To: 06-30-83

Permit Number: GA0004120

Discharge Location: 001B Cooling Tower Blowdown

Frequency of Analysis: 1/Wk

Location: Type of Sample:	Intake In Situ	Mixing Zone In Situ	Condenser Grab
Parameter:	Temperature <u>Deg F</u>	Temperature <u>Deg F</u>	Chlorine <u>mg/l Cl2</u>
Limits:	$\Delta T$ of 5 Max. 90	$\Delta T$ of 5 Max. 90	Avg. 0.2 Max. 0.5
<u>Date</u>			
04-06-83	64	63	1
04-14-83	64	64	
04-21-83	59	59	
04-27-83	62	62	
05-04-83	69	69	
05-11-83	72	72	
05-18-83	73	73	
05-25-83	77	77	
06-01-83	79	79	
06-08-83	77	77	
06-15-83	78	79	
06-23-83	80	80	
Number of Samples:	12	12	
Maximum Value:	80	80	
Minimum Value:	59	59	
Limits Exceeded:	0	0	

Note 1 - We are no longer required to monitor chlorine at this point

## CIRC WATER CHLORINATION DATA

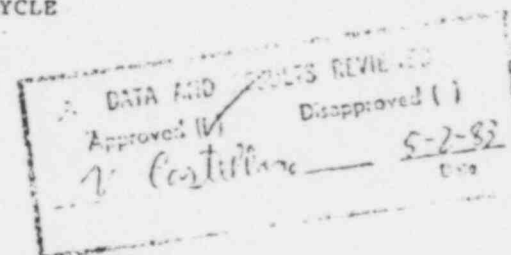
## DATA SHEET 1

WEEKLY

UNIT NO: 1

DATE	FREQUENCY CYCLE/DAY	CL <sub>2</sub> INJECT MIN/CYCLE	CHLORINATORS		BIOTREND		CL <sub>2</sub>			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l*		DISCHARGE	
			#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HR/DAY	
4-1-83	3	30	005	6850	NA	NA	<.1	<.1	0	JH
4-9-83	3	30	005	6850	NA	NA	<.1	<.1	0	K. S. J.
4-21-83	3	30	005	005	NA	NA	<.1	<.1	0	PP
4-27-83	3	30	005	005	NA	NA	<.1	<.1	0	JH
LIMIT							0.20	0.50	2 HR/DAY	

\* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

DATA PACKAGE 1  
(DATA SHEET 1)



## DATA SHEET 1

WEEKLY

UNIT NO:

			CHLORINATORS		BIOTREND		Cl <sub>2</sub>			
DATE	FREQUENCY	CL <sub>2</sub> INJECT	NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l*	DISCHARGE	INITIALS	
	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HOUR/DAY	
4-1-83	3	40	005	6850	NA	NA	<.1	<.1	0	JH
4-8	←		005							P/S
4-21-83	←		005							JH
4-27-83	←		005							JH
<hr/>										
							LIMIT	0.20	0.50	2 HR/DAY

\* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

DATA AND RESULTS REVIEWED  
Approved (✓) Disapproved ( )  
V. Castellano 5-2-82  
Signature Date

DATA PACKAGE 1  
(DATA SHEET 1)

Page 2 of 2

-HNP-7606 RO5

CIRC WATER CHLORINATION DATA

DATA SHEET 1

WEEKLY

UNIT NO: I

DATE	FREQUENCY CYCLE/DAY	CL <sub>2</sub> INJECT MIN/CYCLE	CHLORINATORS		BIOTREND		CL <sub>2</sub>			INITIALS
			NO. 1 <sup>A</sup> #/24 HR	NO. 2 <sup>B</sup> #/24 HR	BEFORE TIME	AFTER TIME	FREE mg/l*	DISCHARGE		
6-3-83	3	30 min/cycle	005	2111	NA	NA	.1	.2	none	JA
6-9-83	3	30 min/cycle	005	4900	NA	NA	.1	.1	none	JA
6-16-83	3	30 " "	005	3200	NA	NA	.1	.3	none	JA
6-23-83	3	30 " "	005	1100	NA	NA	.1	.2	none	JA
6-30-83	3	30 " "	005	1000	NA	NA	.1	.1	none	JA
LIMIT							0.20	0.50	2 HR/DAY	

\* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

DATA AND RESULTS REVIEWED

Approved: [Signature] Disapproved: [Signature]

DATE: 7/7/83

## CIRC WATER CHLORINATION DATA

## DATA SHEET 1

WEEKLY

UNIT NO: 2

DATE	FREQUENCY CYCLE/DAY	CL <sub>2</sub> INJECT MIN/CYCLE	CHLORINATORS		BIOTREND		Cl <sub>2</sub>			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l*		DISCHARGE	
			#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HR/DAY	
6-3-83	←	005			NA	NA	←		005	NA
6-9-83		005			NA	NA			005	NA
6-16-83		005			NA	NA	←		005	NA
6-20-83	←	005			NA	NA	←		005	NA
6-30-83	←	005			NA	NA	←		005	NA
LIMIT							0.20	0.50	2 HR/DAY	

\* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

DATA AND RESULTS REPORTED	
Approved: <i>[Signature]</i>	Disapproved: <i>[Signature]</i>
Date: <i>7/9/83</i>	

Georgia Power Company  
333 Piedmont Avenue  
Atlanta, Georgia 30308  
Telephone 404 526-6526

Mailing Address  
Post Office Box 4545  
Atlanta, Georgia 30302



Georgia Power

THE SOUTHERN ELECTRIC SYSTEM

Power Supply Engineering and Services

October 21, 1983

Mr. Gene B. Welsh, Chief  
Water Protection Branch  
Environmental Protection Division  
270 Washington Street, S. W.  
Atlanta, Georgia 30334

Re: Plant Arkwright	NPDES Permit No. GA 0026069
Plant Bowen	NPDES Permit No. GA 0001449
Plant Branch	NPDES Permit No. GA 0026051
Plant Hammond	NPDES Permit No. GA 0001457
Plant Hatch	NPDES Permit No. GA 0004120
Plant McDonough-Atkinson	NPDES Permit No. GA 0001431
Plant McManus	NPDES Permit No. GA 0003794
Plant Mitchell	NPDES Permit No. GA 0001465
Plant Scherer	NPDES Permit No. GA 0035564
Plant Wansley	NPDES Permit No. GA 0026778
Plant Yates	NPDES Permit No. GA 0001473

Dear Mr. Welsh:

As required by the above referenced NPDES Permits, we hereby submit the Operation Monitoring Reports for each of the corresponding power plants for the quarter ending September 30, 1983.

If you have any questions or comments, please advise.

Sincerely,

T. E. Byerley  
Manager, Environmental Affairs

RDM:pd  
Attachment

xc: Mr. W. C. Philips  
Mr. R. H. Bohler  
File EV925-022 |

QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 07-01-83  
To: 09-30-83

Permit Number: GA0004120

Discharge Location: 001B Cooling Tower Blowdown

Frequency of Analysis: 1/Wk

Location: Type of Sample:	Intake In Situ	Mixing Zone In Situ	Condenser Grab
Parameter:	Temperature Deg F	Temperature Deg F	Chlorine mg/l Cl2
Limits:	T of 5 Max. 90	T of 5 Max. 90	Avg. 0.2 Max. 0.5
<u>Date</u>			
07-06-83	84	84	1
07-13-83	81	81	
07-20-83	87	88	
07-27-83	84	84	
08-03-83	86	86	
08-10-83	88	88	
08-17-83	86	84	
08-24-83	88	88	
08-31-83	84	84	
09-07-83	84	84	
09-14-83	82	82	
09-21-83	84	84	
09-28-83	69	68	
Number of Samples:			
Maximum Value:	88	88	
Minimum Value:	69	68	
Limits Exceeded:	0	0	

Note 1 - We are no longer required to monitor chlorine at this point.

QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 07-01-83  
To: 09-30-83

Permit Number: GA0004120

Discharge Location: 001A1 Low Volume Waste (Neut Tank)  
Type of Sample: Grab  
Frequency of Analysis: 2/Mo

Parameter:	Suspended Solids mg/l	Oil and Grease mg/l
Limits:	Avg. 30 Max. 100	Avg. 15 Max. 30
<u>Date</u>		
07-04-83	3.0	1.1
07-18-83	27.4	8.5
08-01-83	8.4	5.5
08-15-83	7.0	0.7
09-05-83	3.8	1.3
09-19-83	6.2	12.2
Number of Samples:	6	6
Average Value:	9.3	4.8
Maximum Value:	27.4	12.2
Minimum Value:	3.0	0.7
Limits Exceeded:	0	0

QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 07-01-83  
To: 09-30-83

Permit Number: GA0004120

Discharge Location: 001A2 Low Volume Waste (Pres Filter Backwash)  
Type of Sample: Grab  
Frequency of Analysis: 1/Otr

Parameter:	Suspended Solids	Oil and Grease
	mg/l	mg/l
Limits:	Avg. 30 Max. 100	Avg. 15 Max. 30

<u>Location</u>	<u>Date</u>		
Filter A	August	9.7	5.3
Filter B	August	9.5	<5.0
Filter C	August	20.5	<5.0
Filter D	August	18.8	<5.0

Number of Samples:	4	4
Average Value:	14.6	<5.0
Maximum Value:	20.5	5.3
Minimum Value:	9.5	<5.0
Limits Exceeded:	0	0



QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 07-01-83  
To: 09-30-83

Permit Number: GA004120

Discharge Location: 001C Sewage Treatment Plant  
Type of Sample: Grab  
Frequency of Analysis: 2/Yr

Parameter:	5-Day BOD5 mg/l	Free Chlorine mg/l
Limits:	Avg. 30 Max. 45	-- --
<u>Date</u>		
07-12-83	21.8	0.6
Limits Exceeded:	0	0

QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 07-01-83  
To: 09-30-83

Permit Number: GA0004120

Discharge Location: 001D1 Liquid Radwaste System Unit 1  
Type of Sample: Grab  
Frequency of Analysis: 2/Mo

Parameter:	TSS mg/l	Oil and Grease mg/l	pH
Limits:	Avg. 30 Max. 100	Avg. 15 Max. 20	
<u>Date</u>			
07-04-83	9.4	4.0	8.0
07-18-83	9.0	1.1	7.0
08-01-83	4.4	19.6	7.1
08-15-83	10.0	0.0	5.3
09-05-83	3.7	3.0	6.2
09-19-83	1.0	0.9	6.3
Number of Samples:	6	6	6
Average Value:	6.3	4.8	-
Maximum Value:	10.0	19.6	8.0
Minimum Value:	1.0	0.0	5.3
Limits Exceeded:	0	0	0

QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 07-01-83  
To: 09-30-83

Permit Number: GA0004120

Discharge Location: 001D2 Liquid Radwaste System Unit 2  
Type of Sample: Grab  
Frequency of Analysis: 2/Mo

Parameter:	TSS mg/l	Oil and Grease mg/l	pH
Limits:	Avg. 30 Max. 100	Avg. 15 Max. 20	
<u>Date</u>			
07-04-83	5.2	6.9	5.6
07-18-83	6.0	1.9	5.1
08-01-83	10.0	0.0	5.9
08-14-83	4.0	0.0	6.0
09-05-83	1.9	1.1	5.9
09-19-83	10.0	1.2	6.3
Number of Samples:	6	6	6
Average Value:	6.2	1.9	-
Maximum Value:	10.0	6.9	6.3
Minimum Value:	1.9	0.0	5.1
Limits Exceeded:	0	0	

## QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
 Plant Hatch  
 P. O. Box 4545  
 Atlanta, Georgia 30302

From: 07-01-83  
 To: 09-30-83

Permit Number: GA0004120

Discharge Location: 001E1 Combined Plant Waste Unit 1

Frequency of Analysis: 1/Wk

Type of Sample: Parameter:	In Situ Temperature Deg F	Grab Average Free Chlorine mg/l Cl <sub>2</sub>	Grab pH
Limits:	-	-	Min. 6.0 Max. 9.0
<u>Date</u>			
07-07-83	84	<0.1	7.4
07-13-83	91	<0.1	7.4
07-20-83	93	<0.1	7.0
07-27-83	93	<0.1	6.9
08-10-83	91	<0.1	7.9
08-11-83	82	<0.1	7.8
08-24-83	93	<0.1	7.5
08-31-83	78	<0.1	7.1
09-07-83	89	<0.1	7.7
09-14-83	86	<0.1	7.4
09-21-83	86	<0.1	7.5
09-28-83	77	<0.1	7.9
Number of Samples:	12	12	12
Average Value:	--	<0.1	--
Maximum Value:	93	<0.1	7.9
Minimum Value:	77	<0.1	6.9
Limits Exceeded:	--	--	0

## QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
 Plant Hatch  
 P. O. Box 4545  
 Atlanta, Georgia 30302

From: 07-01-83  
 To: 09-30-83

Permit Number: GA0004120

Discharge Location: 001E1 Combined Plant Waste Unit 2

Frequency of Analysis: 1/Wk

Type of Sample: Parameter:	In Situ Temperature Deg F	Grab Average Free Chlorine mg/l Cl2	Grab pH
Limits:	-	-	Min. 6.0 Max. 9.0
<u>Date</u>			
07-07-83	87	<0.1	7.4
07-13-83	91	<0.1	8.4
07-20-83	87	<0.1	6.8
07-27-83	91	<0.1	6.7
08-10-83	91	<0.1	8.0
08-17-83	72	<0.1	6.9
08-24-83	86	<0.1	7.6
08-31-83	89	<0.1	7.6
09-07-83	90	<0.1	8.0
09-14-83	86	<0.1	7.5
09-21-83	87	<0.1	7.5
09-28-83	77	<0.1	7.8
Number of Samples:	12	12	12
Average Value:	--	<0.1	--
Maximum Value:	91	<0.1	8.4
Minimum Value:	72	<0.1	6.8
Limits Exceeded:	--	--	0

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

Mr. T. E. Byerley  
 Manager of Environmental Affairs

DATA PACKAGE 2  
(DATA SHEET 2)

DATA PACKAGE 2  
(DATA SHEET 2)

SERVICE WATER CHLORINATION DATA

DATA SHEET 2

**WEEKLY**

UNIT NO. ONE[illegible]

MEASURED AT POINT OF DISCHARGE TO RIVER DURING CHLORINATION CYCLE.

MEASURED AT SERVICE WATER DISCHARGE TO CIRC WATER FLUME

\* Unable to adjust chlorine feedrate. System out of service.  
Chlorine reading indicates  $< 1$  for Avg. and max.

## DATA SHEET 2

WEEKLY

UNIT NO. Two[illegible]

MEASURED AT SERVICE WATER DISCHARGE TO CIRC WATER PLUME





DATA PACKAGE 1 (DATA SHEET 1)

## CIRC WATER CHLORINATION DATA

## DATA SHEET 1

WEEKLY

UNIT NO: *CNE*[illegible]

- \* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

7-8-83

We are unable to adjust the feedrate on both chiselpators.  
MR's have been written (2-6-83)

# SERVICE WATER CHLORINATION DATA

DATA PACKAGE 2  
(DATA SHEET 2)

## SERVICE WATER CHLORINATION DATA

DATA SHEET 2

WEEKLY

UNIT NO. 1

DATE	FREQUENCY CYCLE/DAY	CL <sub>2</sub> INJECT MIN/CYCLE	CHLORINATORS			BIOTREND				Cl <sub>2</sub>			
			NO. 1 #/24 HR	NO. 2 #/24 HR	NO. 3 #/24 HR	BEFORE TIME	AFTER TIME	FREE mg/l**		FREE mg/l*		DISCHARGE	
8-3	1	Cont	002	002	200	NA	NA	.2	.2	4.1	4.1	0	
8-10	1	Cont	002	002	200	NA	NA	.2	.2	4.1	4.1	0	
8-17	1	Cont	002	002	200	NA	NA	.2	.2	4.1	4.1	0	
8-25	1	Cont	005	200	005	NA	NA	.2	.2	4.1	4.1	0	
LIMIT										0.20	0.50	2 HR/DAY	

\* MEASURED AT POINT OF DISCHARGE TO RIVER DURING CHLORINATION CYCLE  
 \*\* MEASURED AT SERVICE WATER DISCHARGE TO CIRC WATER FLUME

DATA PACKAGE 2  
(DATA SHEET 3)

SERVICE WATER CHLORINATION DATA

DATA SHEET 2

WATER

UNIT NO. 2

DATE	FREQUENCY CYCLE/DAY	CL <sub>2</sub> INJECT MIN/CYCLE	CHLORINATORS			BIOTREND				Cl <sub>2</sub>		
			NO. 1	NO. 2	NO. 3	BEFORE	AFTER	FREE mg/l**		FREE mg/l*		DISCHARGE
			\$/24 HR	\$/24 HR	\$/24 HR	TIME	TIME	AVG.	MAX	AVG.	MAX	HOUR/DAY
8-3	1	Cont	005	005	200	NA	NA	.2	.2	<.1	.1	0
8-10	1	Cont	005	005	200	NA	NA	.2	.2	<.1	.1	0
8-12	1	Cont.	005	005	200	NA	NA	.2	.2	<.1	.1	0
8-25	1	Cont.	005	200	005	NA	NA	<.1	<.1	<.1	.1	0
LIMIT										0.20	0.50	2 HR/DAY

MEASURED AT POINT OF DISCHARGE TO RIVER DURING CHLORINATION CYCLE

\*\* MEASURED AT SERVICE WATER DISCHARGE TO CIRC WATER PLUME

DATA PACKAGE 1  
(DATA SHEET 1)

DATA PACKAGE 1  
(DATA SHEET 1)

CIRC WATER CHLORINATION DATA

DATA SHEET 1

WEEKLY

UNIT NO: 1[illegible]

MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

(DATA SHEET 1)

CIRC WATER CHLORINATION DATA

DATA SHEET 1

WEEKLY

UNIT NO: 2

[illegible]

\* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

8-3-83  
Route: was out of service

8-19-83  
U II Reuter not in service.



DATA PACKAGE 2  
(DATA SHEET 2)

SERVICE WATER CHLORINATION DATA

DATA SHEET 2

WEEKLY

UNIT NO. 2

		CHLORINATORS				BIOTREND				Cl <sub>2</sub>		
DATE	FREQUENCY	CL <sub>2</sub> INJECT	NO. 1	NO. 2	NO. 3	BEFORE	AFTER	FREE mg/l**		FREE mg/l*		DISCHARGE
	CYCLE/DAY	MIN/CYCLE	g/24 HR	g/24 HR	g/24 HR	TIME	TIME	AVG.	MAX	AVG.	MAX	HOUR/DAY
9-1	1	CONT	005	200	005	NA	NA	4.1	4.1	4.1	4.1	0
9-9	1	Cont	005	300	005	NA	NA	4.1	4.1	4.1	4.1	0
9-15	1	Cont	005	300	005	NA	NA	4.2	4.2	4.1	4.1	0
9-22	1	Cont	005	300	005	NA	NA	4.2	4.2	4.1	4.1	0
9-20	1	CONT	005	200	005	NA	NA	4.2	4.2	4.1	4.1	0
LIMIT										0.20	0.50	2 HR/DAY

\* MEASURED AT POINT OF DISCHARGE TO RIVER DURING CHLORINATION CYCLE

\*\* MEASURED AT SERVICE WATER DISCHARGE TO CIRC WATER FLOVE

← chlorination system not due to equipment



CIRC WATER CHLORINATION DATA  
DATA SHEET 1

UNIT NO: 1

● MEASURED AT TOWER OVERFLOW DURING CELORINATION CYCLE

Page 2 of 2

HNP-7605 R05

# SERVICE WATER CHLORINATION DATA

## DATA PACKAGE 2 (DATA SHEET 2)

### SERVICE WATER CHLORINATION DATA

#### DATA SHEET 2

WEEKLY

UNIT NO. 1

DATE	FREQUENCY	CL <sub>2</sub> INJECT	CHLORINATORS			BIOTREND				CL <sub>2</sub>		
			NO. 1	NO. 2	NO. 3	BEFORE	AFTER	FREE mg/l**		FREE mg/l*		DISCHARGE
	CYCLE/DAY	MIN/CYCLE	1/24 HR	1/24 HR	1/24 HR	TIME	TIME	AVG.	MAX	AVG.	MAX	HOURLY/DAY
7-1	1	Cont	005	200	005	NA	NA	.2	.2	2.1	2.1	Ø
7-9	1	Cont	005	300	005	NA	NA	.2	.2	2.1	2.1	Ø
7-15	1	Cont	005	700	005	NA	NA	.2	.2	2.1	2.1	Ø
7-22	1	Cont	005	200	005	NA	NA	.2	.2	2.1	2.1	Ø
9/29	1	CONT	005	200	005	NA	NA	.2	.2	2.1	2.1	Ø
LIMIT										0.20	0.50	2 HR/DAY

\* MEASURED AT POINT OF DISCHARGE TO RIVER DURING CHLORINATION CYCLE

\*\* MEASURED AT SERVICE WATER DISCHARGE TO CIRC WATER FLUME



Power Supply Engineering and Services

January 25, 1984

Mr. Gene B. Welsh, Chief  
Water Protection Branch  
Environmental Protection Division  
270 Washington Street, S.W.  
Atlanta, Georgia 30334

Re: Plant Arkwright	NPDES Permit No. GA 0026069
Plant Bowen	NPDES Permit No. GA 0001449
Plant Branch	NPDES Permit No. GA 0026051
Plant Hammond	NPDES Permit No. GA 0001457
Plant Hatch	NPDES Permit No. GA 0004120
Plant McDonough-Atkinson	NPDES Permit No. GA 0001431
Plant McManus	NPDES Permit No. GA 0003794
Plant Mitchell	NPDES Permit No. GA 0001465
Plant Scherer	NPDES Permit No. GA 0035564
Plant Wansley	NPDES Permit No. GA 0026778
Plant Yates	NPDES Permit No. GA 0001473

Dear Mr. Welsh:

As required by the above referenced NPDES Permits, we hereby submit the Operation Monitoring Reports for each of the corresponding power plants for the quarter ending December 31, 1983.

If you have any questions or comments, please advise.

Sincerely,

A handwritten signature in cursive script, appearing to read "T. E. Byerley".

T. E. Byerley  
Manager of Environmental Affairs

RDM:bjk

Attachments

QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 10-01-83  
To: 12-31-83

Permit Number: GA0004120

Discharge Location: 001B Cooling Tower Blowdown

Frequency of Analysis: 1/Wk

Location: Type of Sample:	Intake In Situ	Mixing Zone In Situ	Condenser Grab
Parameter:	Temperature Deg F	Temperature Deg F	Chlorine mg/l Cl <sub>2</sub>
Limits:	$\Delta T$ of 5 Max. 90	$\Delta T$ of 5 Max. 90	Avg. 0.2 Max. 0.5
<u>Date</u>			
10-05-83	77	77	(1)
10-12-83	72	72	
10-19-83	70	70	
10-26-83	64	64	
11-02-83	64	64	
11-08-83	62	62	
11-16-83	57	57	
11-23-83	61	61	
11-30-83	55	55	
12-02-83	52	52	
12-14-83	50	48	
12-21-83	41	42	
12-28-83	33	34	
Number of Samples:	15	15	
Maximum Value:	77	77	
Minimum Value:	33	34	
Limits Exceeded:	--	0	

Note 1 - We are no longer required to monitor chlorine at this point.

QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 10-01-83  
To: 12-31-83

Permit Number: GA0004120

Discharge Location: 001A1 Low Volume Waste (Neut Tank)  
Type of Sample: Grab  
Frequency of Analysis: 2/Mo

Parameter:	Suspended Solids mg/l	Oil and Grease mg/l
Limits:	Avg. 30 Max. 100	Avg. 15 Max. 30
<u>Date</u>		
10-03-83	3.6	2.4
10-17-83	23.1	2.3
11-07-83	10.8	10.0
11-21-83	3.6	7.5
12-05-83	4.9	5.4
12-19-83	2.3	1.0
Number of Samples:	6	6
Average Value:	8.1	4.8
Maximum Value:	23.1	10.0
Minimum Value:	2.3	1.0
Limits Exceeded:	0	0

QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 10-01-83  
To: 12-31-83

Permit Number: GA0004120

Discharge Location: 001A2 Low Volume Waste (Pres Filter Backwash)  
Type of Sample: Grab  
Frequency of Analysis: 1/Otr

Parameter:	Suspended Solids	Oil and Grease
	mg/l	mg/l
Limits:	Avg. 30	Avg. 15
	Max. 100	Max. 30

<u>Location</u>	<u>Date</u>		
Filter A	11-07-83	1.0	<5.0
Filter B	11-07-83	0.7	<5.0
Filter C	11-07-83	0.5	<5.0
Filter D	11-07-83	0.4	<5.0
Number of Samples:	4	4	
Average Value:	0.7	<5.0	
Maximum Value:	1.0	<5.0	
Minimum Value:	0.4	<5.0	
Limits Exceeded:	0	0	

QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 10-01-83  
To: 12-31-83

Permit Number: GA0004120

Discharge Location: 001D1 Liquid Radwaste System Unit 1  
Type of Sample: Grab  
Frequency of Analysis: 2/Mo

Parameter:	TSS mg/l	Oil and Grease mg/l	pH
Limits:	Avg. 30 Max. 100	Avg. 15 Max. 20	
<u>Date</u>			
10-03-83	2.0	5.2	6.20
10-17-83	16.0	0.7	6.70
11-07-83	2.0	8.7	6.50
11-21-83	8.5	0.8	6.30
12-05-83	15.3	0.1	6.70
12-19-83	16.0	1.1	6.70
Number of Samples:	6	6	6
Average Value:	10.0	2.8	-
Maximum Value:	16.0	8.7	6.70
Minimum Value:	2.0	0.1	6.20
Limits Exceeded:	0	0	0



QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
Plant Hatch  
P. O. Box 4545  
Atlanta, Georgia 30302

From: 10-01-83  
To: 12-31-83

Permit Number: GA0004120

Discharge Location: 001D2 Liquid Radwaste System Unit 2  
Type of Sample: Grab  
Frequency of Analysis: 2/Mo

Parameter:	TSS mg/l	Oil and Grease mg/l	pH
Limits:	Avg. 30 Max. 100	Avg. 15 Max. 20	
<u>Date</u>			
10-03-83	0.8	0.1	6.10
10-17-83	0.3	0.4	6.20
11-07-83	2.5	3.8	6.00
11-21-83	3.0	6.1	6.70
12-05-83	1.9	0.6	6.20
12-19-83	2.5	0.9	5.30
Number of Samples:	6	6	6
Average Value:	1.8	2.0	-
Maximum Value:	3.0	6.1	6.70
Minimum Value:	0.3	0.1	5.30
Limits Exceeded:	0	0	1

## QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
 Plant Hatch  
 P. O. Box 4545  
 Atlanta, Georgia 30302

From: 10-01-83  
 To: 12-31-83

Permit Number: GA0004120

Discharge Location: 001E1 Combined Plant Waste Unit 1

Frequency of Analysis: 1/Wk

Type of Sample: Parameter:	In Situ Temperature <u>Deg F</u>	Grab Average Free Chlorine <u>mg/l Cl2</u>	Grab pH
Limits:	-	-	Min. 6.0
	-	-	Max. 9.0
<u>Date</u>			
10-05-83	88	<0.1	8.0
10-12-83	83	<0.1	7.2
10-19-83	78	<0.1	7.0
10-26-83	77	<0.1	7.9
11-09-83	66	<0.1	7.3
11-16-83	64	<0.1	7.4
11-23-83	59	<0.1	7.2
11-30-83	59	<0.1	7.1
12-07-83	60	<0.1	6.9
12-14-83	68	<0.1	6.9
12-21-83	66	<0.1	6.9
12-28-83	68	<0.1	6.9
Number of Samples:	12	12	12
Average Value:	--	<0.1	--
Maximum Value:	88	<0.1	8.0
Minimum Value:	59	<0.1	6.9
Limits Exceeded:	--	--	0

## QUARTERLY OPERATION MONITORING REPORT

Georgia Power Company  
 Plant Hatch  
 P. O. Box 4545  
 Atlanta, Georgia 30302

From: 10-01-83  
 To: 12-31-83

Permit Number: GA0004120

Discharge Location: 001E1 Combined Plant Waste Unit 2

Frequency of Analysis: 1/Wk

Type of Sample: Parameter:	In Situ Temperature <u>Deg F</u>	Grab Average Free Chlorine <u>mg/l Cl2</u>	Grab pH
Limits:	-	-	Min. 6.0
	-	-	Max. 9.0
<u>Date</u>			
10-05-83	87	<0.1	8.4
10-12-83	81	<0.1	8.0
10-19-83	81	<0.1	7.6
10-26-83	78	<0.1	8.3
11-09-83	71	<0.1	8.0
11-16-83	73	<0.1	8.3
11-23-83	73	<0.1	7.5
11-30-83	69	<0.1	7.5
12-07-83	71	<0.1	7.4
12-14-83	73	<0.1	6.7
12-21-83	64	<0.1	6.4
12-28-83	60	<0.1	6.8
Number of Samples:	12	12	12
Average Value:	--	<0.1	--
Maximum Value:	87	<0.1	8.4
Minimum Value:	60	<0.1	6.4
Limits Exceeded:	--	--	0

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

Mr. T. E. Byerley  
 Manager of Environmental Affairs

DATA PACKAGE 1  
(DATA SHEET 1)

DATA SHEET 1

WEEKLY

UNIT NO:

[illegible]

\* MEASURED AT TOWER OVERTFLOW DURING CHLORINATION CYCLE

\* COS for maintenance

+ value of 3.2 obtained before + after chloro injection cycle and 0.3 was the highest reading obtained during injection, used as the reference comparison for rest.

DATA PACKAGE 1  
(DATA SHEET 1)

DATA SHEET 1

WEEKLY

UNIT NO:

2

[illegible]

- \* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

\* sight glass too dirty to read flow - MK is for cleaning sight glass. I

\* COS for maintenance

+ Value obtained was the same during, before and after chlorine injection again used orthostichine computer for test

DATA PACKAGE 1  
(DATA SHEET 1)

## DATA SHEET 1

WEEKLY

UNIT NO:

[illegible]

MEASURED AT TOWEN OVERFLOW DURING CHLORINATION CYCLE

# 11-1 ops for refueling outage



DATA PACKAGE 1  
(DATA SHEET 1)

DATA SHEET 1

WEEKLY

UNIT NO:

2

[illegible]

- \* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

\* cos due to clearing intake screens'



# CIRC WATER CHLORINATION DATA

DATA PACKAGE 1  
(DATA SHEET 1)

## CIRC WATER CHLORINATION DATA

DATA SHEET 1

WEEKLY

UNIT NO: 1

DATE	FREQUENCY	CL <sub>2</sub> INJECT	CHLORINATORS		BIOTREND		Cl <sub>2</sub>			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l*		DISCHARGE	
	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HOURLY/DAY	
12/1	* OOS	—	—	—	—	—	—	—	0	J
12/8	* OOS	—	—	—	—	—	—	—	0	J
12/15	3	30	—	500	NA	NA	<.1	<.1	0	J
12/22	3	30	—	5000	NA	NA	<.1	.15	0	J
12/29	3	30	—	4700	NA	NA	<.1	.2	0	J
LIMIT							0.20	0.50	2 HR/DAY	

\* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

\* system OOS for U-1 refueling outage

## CIRC WATER CHLORINATION DATA

DATA PACKAGE 1  
(DATA SHEET 1)

## CIRC WATER CHLORINATION DATA

DATA SHEET 1

WEEKLY

UNIT NO: 2

		CHLORINATORS		BIOTREND		Cl <sub>2</sub>				
DATE	FREQUENCY	CL <sub>2</sub> INJECT	NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l* DISCHARGE		INITIALS	
	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HOUR/DAY	
12/2	3	40	—	1100	NA	NA	<.1	<.1	Ø	J
12/3	* OOS									
12/15	3	40	—	500	NA	NA	<.1	<.1	Ø	J
12/22	3	40	—	4000	NA	NA	<.1	<.1	Ø	J
12/29	3	40	—	4700	NA	NA	<.1	.2	Ø	J
					LIMIT		0.20	0.50	2 HR/DAY	

\* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

\* OOS due to low water pressure, problem will be resolved when U-1 starts back up. J

DATA PACKAGE 2  
(DATA SHEET 2)

## SERVICE WATER CHLORINATION DATA

## DATA SHEET 2

WEEKLY

UNIT NO. 1

DATE	FREQUENCY	CL <sub>2</sub> INJECT	CHLORINATORS			BIOTREND				CL <sub>2</sub>		
			NO. 1	NO. 2	NO. 3	BEFORE	AFTER	FREE mg/l**		FREE mg/l*		DISCHARGE
	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	AVG.	MAX	HOURLY/DAY
10/1/83	1	CONT	-	250	-	NA	NA	0.5	0.5	<.1	<.1	Ø
10/2/83	1	CONT	-	250	-	NA	NA	0.55	0.55	<.1	<.1	Ø
10/3/83	1	CONT	200	250	-	NA	NA	0.15	0.15	<.1	<.1	Ø
10/4/83	1	CONT	200*	-	-	NA	NA	-	-	<.1	<.1	Ø
LIMIT										0.20	0.50	2 HR/DA

MEASURED AT POINT OF DISCHARGE TO RIVER DURING CHLORINATION CYCLE

\*\* MEASURED AT SERVICE WATER DISCHARGE TO CIRC WATER PLUMB

\* OOS for maintenance

# SERVICE WATER CHLORINATION DATA

DATA PACKAGE 2  
(DATA SHEET 2)

## SERVICE WATER CHLORINATION DATA

DATA SHEET 2

WEEKLY

UNIT NO. 2

DATE	FREQUENCY CYCLE/DAY	CL <sub>2</sub> INJECT MIN/CYCLE	CHLORINATORS			BIOTREND				CL <sub>2</sub>		
			NO. 1	NO. 2	NO. 3	BEFORE	AFTER	FREE mg/l**		FREE mg/l*		DISCHARGE
			\$/24 HR	\$/24 HR	\$/24 HR	TIME	TIME	AVG.	MAX	AVG.	MAX	HOURLY/DAY
10/6/83	1	CONT	—	250	—	NA	NA	0.2	0.2	<.1	<.1	Ø
10/12/83	1	CONT	—	250	—	NA	NA	<0.1	<0.1	<.1	<.1	Ø
10/19/83	1	CONT	200	—	—	NA	NA	0.15	0.15	<.1	<.1	Ø
10/27/83	1	CONT	005*	—	—	NA	NA	—	—	<.1	<.1	Ø
LIMIT										0.20	0.50	2 HR

MEASURED AT POINT OF DISCHARGE TO RIVER DURING CHLORINATION CYCLE

MEASURED AT SERVICE WATER DISCHARGE TO CIRC WATER FLUME

\* 005 for maintenance

DATA PACKAGE 2  
(DATA SHEET 2)

DATA SHEET 2

WEEKLY

UNIT NO.

DATE	FREQUENCY CYCLE/DAY	CL <sub>2</sub> INJECT MIN/CYCLE	CHLORINATORS			BIOTREND				Cl <sub>2</sub>		DISCHARGE HOUR/DAY
			NO. 1	NO. 2	NO. 3	BEFORE	AFTER	FREE mg/l**		FREE mg/l*		
			#/24 HR	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	AVG.	MAX	
11/1/93	CONT	CONT	-	-	*	NA	NA	<.1	<.1	<.1	SL	Ø
11/1/93	*	-	-	-	-	-	-	-	-	<.1	<.1	Ø
11/17/93	X	-	-	-	-	-	-	-	-	<.1	<.1	Ø
11/24/93	X	-	-	-	-	-	-	-	-	<.1	<.1	Ø
										<.1	<.1	Ø
LIMIT										0.20	0.50	2 HR/DAY

\* MEASURED AT SERVICE WATER DISCHARGE TO CIRC WATER FLUME

\* low water pressure - no  $\text{Cl}_2$  injection

\* COS due to cleaning intake screen.

\* SOS for entage 22-1

DATA PACKAGE 2  
(DATA SHEET 2)

DATA SHEET 2

WEEKLY

UNIT NO. 2

MEASURED AT POINT OF DISCHARGE TO RIVER DURING CHLORINATION CYCLE

\*\* MEASURED AT SERVICE WATER DISCHARGE TO CIRC WATER FLUME

\* low water pressure alarm, no  $Cl_2$  injection

$A^2$  COS due to cleaning intake screens

\*<sup>3</sup> OOS for valve repair at intake structure



DATA PACKAGE 2  
(DATA SHEET 2)

SERVICE WATER CHLORINATION DATA

DATA SHEET 2

WEEKLY

UNIT NO. 1

DATE	FREQUENCY CYCLE/DAY	CL <sub>2</sub> INJECT MIN/CYCLE	CHLORINATORS			BIOTREND				Cl <sub>2</sub>		
			NO. 1	NO. 2	NO. 3	BEFORE	AFTER	FREE mg/l**		FREE mg/l*		DISCHARGE
			1/24 HR	1/24 HR	1/24 HR	TIME	TIME	AVG.	MAX	AVG.	MAX	HOOR/DAY
12/1	* COS	—	—	—	—	—	—	—	—	<.1	<.1	Ø
12/8	1	CONT	400	—	—	NA	NA	<.1	<.1	<.1	<.1	Ø
12/15	1	CONT	—	—	400	NA	NA	<.1	<.1	<.1	<.1	Ø
12/22	1	CONT	400	—	—	NA	NA	.1	.1	<.1	<.1	Ø
12/29	1	CONT	—	—	600	NA	NA	.3	.3	<.1	<.1	Ø
LIMIT										0.20	0.50	2 HR/DAY

MEASURED AT POINT OF DISCHARGE TO RIVER DURING CHLORINATION CYCLE

MEASURED AT SERVICE WATER DISCHARGE TO CIRC WATER PLUMS

\* system COS for U-1 Refueling outage.



# SERVICE WATER CHLORINATION DATA

DATA PACKAGE 2  
(DATA SHEET 2)

## SERVICE WATER CHLORINATION DATA

DATA SHEET 2

WEEKLY

UNIT NO. 2

DATE	FREQUENCY CYCLE/DAY	CL <sub>2</sub> INJECT MIN/CYCLE	CHLORINATORS			BIOTREND				Cl <sub>2</sub>		
			NO. 1 #/24 HR	NO. 2 #/24 HR	NO. 3 #/24 HR	BEFORE TIME	AFTER TIME	FREE mg/l**		FREE mg/l*		DISCHARGE HOUR/DAY
12/2	CONT	1	—	—	300	NA	NA	<.1	<.1	<.1	<.1	0
12/8	1	CONT	400	—	—	NA	NA	<.1	<.1	<.1	<.1	0
12/15	1	CONT	—	—	400	NA	NA	<.1	<.1	<.1	<.1	0
12/22	1	CONT	400	—	—	NA	NA	<.1	<.1	<.1	<.1	0
12/29	1	CONT	—	—	600	NA	NA	.1	.1	<.1	<.1	0
LIMIT										0.20	0.50	2 HR/DAY

\* MEASURED AT POINT OF DISCHARGE TO RIVER DURING CHLORINATION CYCLE

\*\* MEASURED AT SERVICE WATER DISCHARGE TO CIRC WATER FLUME

Georgia Power Company  
Post Office Box 439  
Baxley, Georgia 31513  
Telephone 912 367-7781  
912 537-9444



Edwin I. Hatch Nuclear Plant

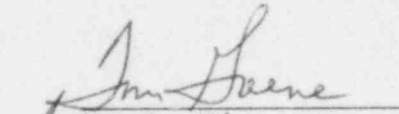
March 30, 1984  
GM-84-199

PLANT E. I. HATCH  
Annual Environmental Surveillance Report, 1983

Director, Office of Nuclear Reactor Regulation  
c/o Distribution Services Branch, DDC, ADM  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

Gentlemen:

Pursuant to section 5.7 of the Hatch Unit 1 and Unit 2  
Environmental Technical Specifications, please find attached  
the Annual Environmental Surveillance Report for 1983.

  
H. C. Nix  
General Manager

HCN/WHR/jce

Xc: J. T. Beckham - letter only  
File: M84-4

IE25  
1/17