GEORGIA POWER COMPANY
EDWIN I. HATCH NUCLEAR PLANT
ANNUAL ENVIRONMENTAL SURVEILLANCE REPORT
CALENDAR YEAR 1982

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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 1982.

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1. RADIOLOGICAL MONITORING

1.1 Introduction

The results of the radiological environmental monitoring program, which is described in Section 3.2 of the Environmental Technical Specifications (ETS), are reported herein for the calendar year 1982. An assessment of the radiological impact of the plant's operation upon the environment is provided. Reports on various related activities are also included.

A summary, interpretation and evaluation of the analytical results obtained from the samples utilized to monitor 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, $L_i - L_c$. Any laboratory analyses performed on environmental samples in addition to those required are also reported.

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; any significant deviations are noted.

The interpretation of results includes, as warranted and as practical, a comparison with the results found in the preoperational surveillance report and in previous operational surveillance reports. Wherever warranted, an attempt was made to provide a perspective of the results within the framework of regulatory limits, background levels, and plant releases coupled with dilution, dispersion and/or concentration factors; where feasible, attempts were made to correlate the plant releases with the radiological levels in the environmental samples. Efforts were made to recognize any data trends; plausible explanations are offered for any such trends considered to be significant.

Any confirmed measured radiological concentrations in an environmental sampling medium averaged over any quarterly sampling period which exceed the reporting levels given in Table 3.2-3 of the ETS are discussed. Explanations are postulated to account for any high radiological levels.

Regular preoperational monitoring began in January 1972, following a period of: installation, calibration and checkout of the sampling equipment; the development of sampling methods and analytical techniques; and the training of personnel. The operational phase of the radiological environmental monitoring program began with initial criticality of the Unit 1 reactor on September 12, 1974. Initial criticality of the Unit 2 reactor was achieved on July 4, 1978.

In recent years, there has been a series of detonations of nuclear devices in weapons tests on mainland China; there were also tests conducted during the early months of preoperational monitoring. These occurred as follows:

January 7, 1972
March 13, 1972
September 26, 1976
November 17, 1976
September 17, 1977
March 14, 1978
December 14, 1978
October 15, 1980

Usually, about a week after each of these tests, a marked increase in the radiological level in many of the samples collected in the environs of the Hatch Nuclear Plant (HNP) was noted, giving abundant evidence of the appearance of fallout of radioactive material from the cloud created by the test. These were generally corroborated with widespread reports of similar step increases occurring elsewhere.

The first two years of operation (of Unit 1) was a period without significant weapons tests being conducted in the atmosphere, a time when there was a general decline in the radiological level for most of the environmental samples. The effects of the 1976, 1977, 1978 and 1980 weapons test were noted in the annual environmental surveillance reports for 1976 through 1981. The fading of the effects of these recent weapons tests is noted in this 1982 report.

In Section 1.5, the results of the EPA Crosscheck Program are provided. In Section 1.6, the chief conclusions drawn from the radiological environmental monitoring activities including the assessment of any radiological impact of the plant's operation upon the environment 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 Nos. 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	11.1 miles
No. 5	Baxley	S	9.9 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

Station Nos. 1 and 5 are the control stations; the other stations are indicator stations.

All laboratory analyses of the samples collected to monitor discharge 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 Hazleton Environmental Sciences of 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. In previous years, the TLDs were read by Eberline Instrument Corporation; Hazleton began performing this task at the beginning of the year.

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. The average activity for the indicator stations is seen to be slightly less than that for the control stations; the difference between these averages is less than the MDD.

TABLE 1.2-1

ANNUAL SUMMARY OF GROSS BETA ACTIVITY IN AIRBORNE DUST

fCi/m^3

Station No.	n	Maximum	Minimum	Average	s
		Data for Control Stations			
1	52	93	6	36	15
5	52	102	8	33	15
Summary	2	36	33	34	2
		Data for Indicator Stations			
9	51	61	12	33	12
15	52	137	11	35	18
17	52	140	5	31	19
21	52	63	17	33	10
Summary	4	35	31	33	1

$L_i - L_c = -1$ MDD = 5

The data summary does not include the June 1 collection at Station 9 because of a faulty laboratory reading of that sample.

For exhibition purposes, air dust samples were also collected at the Visitors Center. The results were about the same as those found at the other stations during the same time period.

Recent annual reports have clearly pointed out the effects of the nuclear weapons tests conducted on mainland China upon the levels of gross beta activity in airborne dust samples collected in the environs of HNP. This may be seen by comparing the average weekly activity for all stations for each year of operation and for the period of preoperation; these weekly averages are given below in units of fCi/m^3 (femto Curie per cubic meter).

Period	Average Activity
Preoperations	140
1974	87
1975	87
1976	137
1977	242
1978	133
1979	38
1980	48
1981	195
1982	33

The fairly high level of average activity for the period of preoperations (January 1972 to September 1974) is attributed to the weapons tests conducted during the early seventies. The lower levels of average activity for 1974 and 1975 show the depletion of these levels due to decay or physical removal during a period without significant weapons tests. Higher levels for the next three years reflect the detonations during those years. The detonation in the fall of 1980 furnished high readings in the spring of 1981 when there was mixing of the air from higher to lower altitudes. The low and rather constant levels during 1982 indicate a fairly complete recovery from the effects of the weapons tests in the atmosphere.

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. The average readings were higher at the control stations in all cases. However, no discernable differences are indicated between control and indicator stations for the two radionuclides where there are sufficient data to make this determination. The radionuclides in the table may be divided into three distinct groups as follows:

(1) Be-7, K-40 and Th-228
(2) Cr-51, Co-60 and Zn-65
(3) Cs-137 and Ce-144

TABLE 1.2-2

ANNUAL SUMMARY OF SPECIFIC RADIONUCLIDES
DETECTED IN AIRBORNE DUST COMPOSITES

fCi/m^3

Radionuclide	n	Max	Min	Avg	s	L_i-L_c	MDD
Control Stations							
Be-7	8	80.3	44.8	58.1	12.8		
K-40	1	6.0	6.0	6.0			
Cr-51	0						
Co-60	0						
Zn-65	0						
Cs-137	4	0.8	0.4	0.6	0.2		
Ce-144	1	2.4	2.4	2.4			
Th-228	0						
Indicator Stations							
Be-7	16	85.5	35.5	53.7	14.5	-4.4	17.0
K-40	1	5.9	5.9	5.9		-0.1	
Cr-51	1	8.3	8.3	8.3			
Co-60	1	21.1	21.1	21.1			
Zn-65	1	24.8	24.8	24.8			
Cs-137	4	0.7	0.3	0.5	0.2	-0.1	0.4
Ce-144	1	0.9	0.9	0.9		-1.5	
Th-228	2	2.1	0.4	1.2	1.2		

The first group of radionuclides are all naturally occurring. As usual, Be-7 was present in each sample while K-40 and Th-228 were present in only a few of the samples. The levels are a little lower than generally found. The level for K-40 is seen to have been only barely detectable as its LLD is nominally 7 fCi/m^3. The Th-228 level of 2.1 fCi/m^3 for station 21 in the 4th quarter provided a new maximum level; the previous high of 0.8 fCi/m^3 occurred at a control station in 1976. Th-228 has never been detected more than a few times a year, often it is not detected at all; its LLD is nominally 0.4 fCi/m^3.

The second group of radionuclides are activation products. The single positive reading for each was found with the first quarter composite for Station 15. Cr-51 and Zn-65 had not previously been detected in the air dust samples. Co-60 had been detected in a few samples in 1975 through 1977, but at levels which were about an order of magnitude lower; its presence during that time period was attributed to the weapons tests. The presence of these radionuclides in 1982, however, is not attributed to the weapons tests, at least not primarily.

Plant releases would be suspected to have attributed at least partially to these readings. Station 15 is only about three quarters of a mile from the release points. This is probably not a good location for an environmental station because what is being monitored may better depict onsite rather than offsite conditions. This station should be moved to the site boundary.

The gaseous releases during the 1st quarter were somewhat above average for Cr-51, about average for Co-60, and as usual, there were no Zn-65 releases. The 1.12 Mev Zn-65 decay gamma could perhaps have been shadowed by the 1.17 Mev Co-60 decay gamma. Nevertheless, the calculated values of the average airborne concentrations during the 1st quarter at Station 15 due to the releases of these radionuclides are estimated to be lower than the measured values by approximately a factor of 50 for Cr-51 and a factor of 600 for Co-60 and Zn-65.

Since neither the weapons tests nor plant releases can adequately explain these readings of the second group of radionuclides, it seems plausible that the 1st quarter composites for Station 15 might have become inadvertently contaminated. Each of these radionuclides is regularly present in liquid releases and in solid radwaste. Contamination might also have possibly occurred at the contract lab. It might also be possible, but unlikely, that this composite had been inadvertently swapped with one from some other customer of the contract lab.

According to the ETS, a Reportable Level (RL) is exceeded if the potential annual dose to an individual is equal to or greater than the design objective doses of Appendix I to 10CFR50. For this second group of airborne radionuclides, the RL is that concentration which would render a dose of 15 mrem to an individual through inhalation over a period of one year. The RLs were calculated to be 7×10^6, 2×10^3 and 1×10^4 fCi/m^3 for Cr-51, Co-60 and Zn-65 respectively. Hence, although the reading for each of these radionuclides are considered to be significant, each was at least an order of magnitude below its RL.

The third group of radionuclides are fission products. These two radionuclides are frequently present; their levels this year are lower than that found during preoperations. Their presence is attributed to weapons tests although these radionuclides are regularly among the gaseous releases from the plant. All but a few of these positive readings occurred in the first half of the year when some of the debris from past weapons tests lodged in the stratosphere re-enters the troposphere. All of the readings were low and most were only barely detectable; the LLDs for Cs-137 and Ce-144 are nominally 0.3 and 1 fCi/m^3 respectively.

The lessening impact of the recent weapons tests may be seen by a comparison of the radionuclides detected this year with those detected last year. The number of positive samples and the level of activity are respectively reduced roughly by factors of 3 and 3 for Cs-137 and 9 and 14 for Ce-144. Last year's roster showed positive levels for six other radionuclides whose presence was attributed to the weapons tests.

1.2.2 Airborne Iodine

The charcoal cartridges used for filtering iodine from the atmosphere were collected weekly and analyzed for I-131 by Ge(Li) spectroscopy. The sample collected at Station 15 on April 26 showed an I-131 level of 37.2 fCi/m^3; a confirmatory recount put the level at 39.2 fCi/m^3. This level is barely detectable as the maximum LLD permitted by the ETS is 70 fCi/m^3. No other samples showed positive indications of I-131; the activity was always less than 40 fCi/m^3.

During the week from April 19 to 26 approximately 48.7 mCi of I-131 were released from the main stack and 5.5 mCi were considered to be released at ground level. Station 15 is located near the center of the WNW sector; the wind was blowing into this sector about 14% of the time at the level of the elevated release point and about 10% of the time at the levels of the lower release points. With due consideration for the atmospheric stability classifications and the average wind speeds during these times, the average I-131 concentrations at Station 15 due to releases from the main stack and from lower release points were calculated to be 1.2 and 76.6 fCi/m^3 respectively. The conservative assumptions and approximate nature of this estimate is seen to place the calculated value about 80% greater than the measured value. Nevertheless, this measured value is considered to correlate very well with the calculated value. It is interesting to note that the releases from the lower release points had 570 times the impact at Station 15 than those from the main stack.

It is concluded that the positive level at Station 15 is due to plant releases. On all previous occasions, the presence of I-131 in charcoal filters was attributed to weapons tests. During 1976, 1977 and 1978 detectable levels of I-131 were found for a period of a few weeks after the arrival of the cloud from each of the nuclear weapons tests. The highest level ever found was 217 fCi/m^3 in 1977. The RL called for by the ETS is 900 fCi/m^3.

1.2.3 Thermoluminescent Dosimeters

External radiation is monitored by thermoluminescent dosimeters (TLDs). The total dose acquired by the TLD badges consists of that received when on-station and that received when off-station (that is, in transit and in storage). It is assumed that a fair estimate of the in transit component may be provided by the average dose acquired by the two control badges which accompany each batch of badges during shipment. When the shipments are unpacked at the plant, these two control badges are stored in a well shielded container, while the other badges (those soon to be placed in the field and those available as replacements) are placed in a make shift cave composed of Pb bricks. The average dose acquired by the replacement badges, which have not otherwise been irradiated, less their in transit component, provides the basis for determining the in storage component of the dose for each of the badges placed in the field; this average dose ranged from 7.1 mrem in the 1st quarter to 11.6 mrem in the 2nd quarter. The in storage component for a particular badge will be in proportion to the number of days that badge was stored in the make shift cave. Usually the quarterly batch of field badges will be stored in the make shift cave for about a week or 10 days; however, periods of two weeks or so are not uncommon. The on-station dose acquired by each field badge during its on-station period of exposure is determined by subtracting the off-station dose (both the in transit and the in storage components) from the total dose readings; the results are then normalized to a 13-week exposure period.

The on-station dose is fundamentally of more interest than the total dose because it is closer to what is being sought, which is, the dose that might be acquired by external radiation as a consequence of gaseous releases from the plant. Each badge in the field is subjected to local background radiation which consists of terrestrial radiation from naturally occurring radionuclides, cosmic radiation, and radiation due to fallout from weapons' tests. The large variability in both space and time of each of these components of the local background radiation makes it difficult to discern any part of the on-station dose which can be attributed to plant releases, which part is generally anticipated as being much smaller.

The locations of the TLDs by sector and by distance from the main stack in miles are provided in Table 1.2-3. Two badges are placed at each station. 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.

TABLE 1.2-3

LOCATIONS OF TLD STATIONS

Sector	Site Boundary		4-5 Miles	
	No.	Miles	No.	Miles
N	19	2.0	25	5.0
NNE	26	2.6	28	4.9
NE	9	1.8	29	5.0
ENE	27	1.7	30	5.0
ESE	119	1.1	12	5.0
SE	17	1.2	11	4.3
SSE	13	1.2	10	4.7
S	126	0.9	8	4.4
SSW	14	1.0	7	4.3
SW	16	0.9	6	4.5
WSW	21	1.0	4	4.5
W	133	1.1	3	4.4
WNW	2	1.3	23	5.5
NW	18	1.1	22	4.6
NNW	20	1.7	24	4.8

Additional TLD Stations

N	No. 31 at 7.8 miles, Toombs Central School
ENE	No. 1 at 11.1 miles, Control Station
S	No. 5 at 9.9 miles, Control Station
WNW	No. 15 at 0.8 miles, Roadside Park

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. The average dose for the indicator stations is seen to be a little greater than that for the control stations. The absolute value of the difference between these values is much less than the MDD, meaning that this difference is not discernable.

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. The average dose for the site boundary is seen to be a little greater than the average for the 4-5 mile ring. However there is no discernable difference between these two values. The on-station quarterly doses acquired by the TLDs placed at Station 31 (Toombs Central School) ranged from 10.1 to 14.3 mrem with 11.4 mrem as an average.

TLDs are frequently lost due to theft and are frequently damaged by vandalism. Although Tables 1.2-4 and 1.2-5 indicate there were TLD readings at each station for each quarter, there was not in every case TLD data from two badges at each station for exposure during the entire quarter. At monthly intervals the TLD stations are checked for missing or damaged badges, replacements are provided as needed. A total of 15 badges from 5 different stations were found to be missing during the year; usually both badges from an affected station would be found to be missing. 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 fifth consecutive year for performing the gamma scans.

TABLE 1.2-4

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

mrem/13 weeks

Station No.	n	Maximum	Minimum	Average	s
		Data for Control Stations			
1	4	15.3	10.3	11.9	2.3
5	4	14.9	10.7	12.0	2.0
Summary	2	12.0	11.9	12.0	0.7
		Data for Indicator Stations			
9	4	13.6	10.9	11.7	1.3
15	4	13.4	8.8	10.6	2.0
17	4	15.7	11.9	13.2	1.7
21	4	12.8	9.4	10.6	1.5
119	4	15.3	10.8	12.2	2.1
126	4	14.4	10.1	11.7	1.9
133	4	19.1	13.4	16.0	2.4
Summary	7	16.0	10.6	12.3	1.9

$L_i - L_c = 0.3$ MDD = 4.9

TABLE 1.2-5

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

mrem/13 weeks

Station No.	n	Maximum	Minimum	Average	s
			Site Boundary		
19	4	14.3	10.5	11.6	1.8
26	4	13.5	9.3	11.2	1.8
9	4	13.6	10.9	11.7	1.3
27	4	20.1	11.7	14.9	3.9
119	4	15.3	10.8	12.2	2.1
17	4	15.7	11.9	13.2	1.7
13	4	13.8	9.4	11.2	1.9
126	4	14.4	10.1	11.7	1.9
14	4	16.4	11.6	13.2	2.3
16	4	12.5	8.9	10.1	1.6
21	4	12.8	9.4	10.6	1.5
133	4	19.1	13.4	16.0	2.4
2	4	14.2	9.3	11.2	2.2
18	4	15.7	10.4	12.7	2.2
20	4	14.8	10.9	12.5	1.8
Summary	15	16.0	10.1	12.3	1.6
			4-5 Miles		
25	4	12.4	9.1	10.1	1.6
28	4	12.7	8.7	10.2	1.8
29	4	18.3	14.2	15.8	1.8
30	4	17.6	11.6	13.9	2.6
12	4	13.2	9.3	10.6	1.8
11	4	15.8	11.3	13.0	2.1
10	4	12.9	8.8	10.2	1.9
8	4	12.0	8.3	9.9	1.7
7	4	11.1	7.5	8.9	1.6
6	4	15.0	8.2	11.1	2.8
4	4	11.8	8.1	9.9	2.0
3	4	14.3	9.5	11.0	2.2
23	4	11.6	9.5	10.7	1.0
22	4	15.1	11.2	12.6	1.7
24	4	12.3	9.7	11.4	1.2
Summary	15	15.8	8.9	11.3	1.8

$L_{SB}-L_{4-5} = 1.0$ MDD = 1.7

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

Station	Sector (Compass)	Azimuth (degrees)	Distance (miles)	n
Prison	ENE	067	11.0	25
Johnson Brothers	SW	223	8.5	25
Williamsons	NNE	029	3.2	26

The samples collected on February 1 at the prison and November 22 at Johnson Brothers were lost in transit to the contract lab. The state prison is the control station. The Williamsons who have the single available milk animal within 5 miles of the plant provide the indicator station. Johnson Brothers dairy, the next closest reliable station, is a bit too far away to be considered as an indicator station.

There were no positive indications of I-131 in any of the milk samples during the year. This is the second straight calendar year and the third since operations began that this has occurred; the first such year was 1979. Previous levels have ranged from 0.095 to 88 pCi/l. All significant readings were generally attributed to the weapons tests. The other readings were marginally detectable or questionable. During preoperations all readings were less than the LLD of 2 pCi/l; the LLD was subsequently lowered to 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 724 and 1680 pCi/l. These levels are about the same as those found in previous years.

The gamma scans also showed positive indications of the fission product Cs-137 in a seventh of the samples collected, as compared to a quarter for last year and to a third in the previous year. The levels were found to be about the same as those for last year. The results in pCi/l for each station are summaried as follows:

Station	n/n_0	Maximum	Minimum	Average	s
Prison	1/25	11.0	11.0	11.0	
Johnson Brothers	9/25	21.3	12.4	17.1	3.0
Williamsons	1/26	11.8	11.8	11.8	

The ratio, n/n_o, the number of positive results to the number of analyses performed, shows relatively high frequenies of positive results for Johnson Brothers. All but two of the positive readings were found during the first 15 weeks of the year. The minimum LLD required by Table 3.2-2 of the ETS is 15 pCi/l; in practice, however, an LLD of 7pCi/l is usually achieved; thus, these positive measurements are only marginally detectable. The highest level given above is considerably less than the reporting level of 70 pCi/l given in Table 3.2-3 of the ETS. The positive levels found during the past four 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 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 17 and 18, 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 of several radionuclides were determined. These have been separated into four groups as follows:

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

Only in the second group is there a man-made radionuclide. 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 K-40 level for the January sample at Station 17 was more than twice the previous maximum for grass. This high may reflect a spurt in growth; gamma scans of soil samples collected at each of the grass plots on Novmeber 10, 1977 showed very high K-40 concentrations at Station 17.

TABLE 1.2-6

ANNUAL SUMMARY OF SPECIFIC RADIONUCLIDES
DETECTED IN GRASS

pCi/kg wet

Radionuclide	n	Max	Min	Avg	s	L_i-L_c	MDD
Control Station							
Be-7	12	2070	117	1013	687		
K-40	12	12100	3530	7156	2818		
Cs-137	12	397	28	99	113		
Tl-208	3	15	12	14	2		
Pb-212	0						
Pb-214	3	288	38	190	133		
Bi-214	8	539	21	164	230		
Ac-228	0						
Indicator Station							
Be-7	24	4780	143	1379	1296	366	1096
K-40	24	41600	1120	7507	7754	351	4867
Cs-137	13	342	15	65	88	-34	113
Tl-208	6	97	21	45	29	31	48
Pb-212	6	190	31	77	61		
Pb-214	11	82	23	48	20	-142	749
Bi-214	14	169	26	68	41	-96	283
Ac-228	6	216	46	111	65		

As has been often the case, Cs-137 was the only fission product detected and as usual it was detected in about 70% of the samples. However, its average level was half that found last year and about a sixth of its average for the 3 years prior to last year. It might also be noted that last year this second group contained 7 other man-made radionuclides whose presence, like Cs-137, was attributed to the weapons tests.

Each of the radionuclides in the third and fourth groups is a primordial nuclide. None of these radionuclides is produced by operation of the plant. The radionuclides in the third group are from the Uranium Series. Those in the fourth group are from the Thorium Series. The levels were generally 50 to 100% higher than seen before; new maximum and average levels were found for each radionuclide. Each of these radionuclides were found in soil samples taken from each of the grass plots on November 10, 1977.

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

Sation	5	17	21
January	52	65	41
March		28	38
April	30	28	35
May		26	29
September		32	
October	31	31	

Iodine has a strong affinity for water; the moisture content in these samples was low due to very dry weather. The January samples were only about 30% their normal weight; the dry and cold weather made the task of obtaining adequate samples difficult. These deviations are not considered as significant.

An adequate sample was not available at Station 17 in March due to dry weather. The sample collections at all stations in March were 22 days following the collections for the previous month. This spread in the collection dates constitutes a deviation from the ETS in that Table 3.2-1 requires monthly collections for grass samples; monthly is defined as once each calendar month at intervals of 30 days $\pm$ 6 days. A closer watch of the sampling schedule should prevent further deviations of this kind. This deviation is insignificant.

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 1/2 miles 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 analyis 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 man-made 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 is summarized as follows for the control and indicator station, respectively.

n	Max	Min	Avg	s	L_i-L_c	MDD
2	230	210	220	14		
4	240	100	165	75	-55	260

The average reading for the indicator station was less than that for the control station, the difference between the average values for the two stations is less than the minimum detectable difference which indicates there is no discernable difference between the values obtained at the two stations. These values are typical of and within the range of those found previously. The monthly sample for April was also inadvertently analyzed for tritium; the level at both stations was found to be less than 120 pCi/l.

On May 5 it was discovered that the raft upon which the automatic water sampling equipment is mounted at Station 172 was missing. It was not found in an immediate search that extended a few miles downstream. A week or so later it was found at Davis Landing which is located several miles further downstream. On May 19, the raft was back on Station. The sample for May consisted of a composite of the weekly grab samples collected during the May 5-19 period, along with the sample collected with the automatic sampling equipment.

Table 3.2-1 of the ETS requires monthly collections. In effect the sampling of river water is continuous and the accumulated collections are nominally gathered at intervals of approximately one month. Monthly is defined by the ETS as once during each calendar month at intervals of 30 days $\pm$ 6 days. This definition is appropriate for grab sampling and does not fit perfectly when applied to continuous

sampling. The monthly collection on January 27 was 19 days following the previous collection date. As a consequence of the very short January sampling period, the 1st quarter sampling period was for only 75 days which is 2 days short of the 13 weeks ± 14 days required by the ETS. These are minor deviations from the sampling schedule. A closer watch of the sampling schedule should prevent further deviations of this kind.

The January sample for Station 172 was lost in transit to the contract laboratory. A sufficient quantity had not been kept in reserve to provide a make-up sample. A procedure change is warranted to assure that a sufficient quantity is held in reserve for a period of time.

In accordance with the ETS a survey was conducted downstream of the plant on October 7 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. Collections were made on May 18 and November 9. The gamma spectral analysis showed positive levels only for K-40, Co-60 and Cs-137 in the November collections.

The levels for natually occurring K-40 were 0.216 and 1.29 pCi/gm wet at Stations 170 and 172, respectively. An LLD of about 0.8 pCi/gm wet is normally achieved; hence the higher reading is not much beyond being margirally detectable. This radionuclide occasionally appears in clam samples. The highest reading previously found was 1.25 pCi/gm wet at Station 170 in the fourth quarter of 1976.

The activation product Co-60 was detected only at Station 172 at a level of 0.116 pCi/gm wet. Generally an LLD of 0.03 pCi/gm wet is achieved; the maximum LLD permitted by the ETS is 0.13 pCi/gm wet. The RL is 10 pCi/gm wet. Co-60 had not previously been detected in environmental samples for monitoring discharges to the river.

The fission product Cs-137 was detected only at Station 172 at a level of 0.0728 pCi/gm wet. Usually an LLD of 0.03 pCi/gm wet is achieved; the maximum LLD permitted by the ETS is 0.13 pCi/gm wet. The RL is 2 pCi/gm wet. Cs-137 had previously been detected in clam samples in two instances, in 1976 and 1979 at levels of 0.014 and 0.0397 pCi/gm wet, respectively.

These measured levels in the clams are equivalent to maximum annual doses to an individual of 0.0233 mrem to the GI tract of an adult due to the Co-60 and of 0.0412 mrem to the liver of a teenager due to the Cs-137. These maximum annual doses are based upon the assumption that some individual would consume the assumed maximum quantity of clams

which had Co-60 and Cs-137 concentrations of 0.116 and 0.0728 pCi/gm wet, respectively. These calculated doses are 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 the Regulatory Guide 1.109, October 1977.

Both Co-60 and Cs-137 are usually amongst the radionuclides comprising the liquid release. An estimate of the average concentrations of these two radionuclides in clams at the indicator station due to the 4th quarter releases were a few orders of magnitude below the measured levels. Thus there is no correlation between the release data and the measured values. It may then be concluded that these measured levels are due to past weapons tests. There also exists the possibility of sample contamination in their handling at the contract lab.

In previous years the following radionuclides had each on one occasion been detected in clam samples: naturally occurring Th-228 at a level of 0.0995 pCi/gm wet in 1976; Zr-95 at a level of 0.25 pCi/gm wet in 1977; and Zn-65 at a level of 0.239 pCi/gm wet in 1981.

1.3.3 American Shad

Because of its commerical importance, the ETS require that American shad be collected annually during the spring spawning period. The collection was made on March 17. Naturally occurring K-40 was the only radionuclide detected in this single sample. The level was 2.15 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 28. The positive results of the gamma scan on each sample are presented below in units of pCi/gm dry.

Radionuclide	Station 170	Station 172
Be-7	1.24	
K-40	11.3	11.7
Cs-137	0.285	0.141
Ra-226	2.75	3.26
Th-228	1.81	2.24

The levels of each of these radionculides are typical of or on the order 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. Last year's sample contained four other man-made radionuclides whose presence like Cs-137 was attributed to the nuclear weapons tests.

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 positioned 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 near the NE corner 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. All of the extraneous sources of tritium to the groundwater are believed to have been identified and to have now been eliminated.

A portion of the tritiated groundwater slowly makes its way to the river via the drainage systems; the tritum levels in these continuous releases are generally a few orders of magnituude below the high levels found in the plant yard and that permitted by regulation. The offsite doses due to these release are small. Thus, there has been no significant impact upon the public's health and safety due to these high onsite tritium levels.

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 acquifer 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 foundations for some of the buildings at the plant enter but do not rupture the aquiclude between the local aquifer and the water table; this aquiclude 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. Movement of water out of these pools might occur only when the pockets fill and overflow.

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 approximately NNE of the plant 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 ditch 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 separate from each other.

Groundwater samples are sent to the Center for Applied Isotope Studies 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 about 100 pCi/l are attained.

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. Nearly all of the locations are shown on Figure 1.4-1. For each sampling location, the maximum and minimum tritium levels are presented along with an 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 datum associated with the particular area may also be presented. Where warranted, an assessment is provided for specific sampling locations. Any significant events or activities associated with these areas are discussed.

1.4.1 CST-1 Area

The CST-1 area is centered about test hole P16 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. Sampling locations affected by this pool area: test holes N7A, P16, T10 through T16 and T18; outfalls SS2 and YD2; and catch basins PY12, PY16 and 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. This data should be reviewed in the light of related events and activities.

The source of the tritium in the CST-1 area is the leakages from the condensate transfer pumps and associated plumbing. During 1980, dykes were erected around the pumps to preclude water from any future leaks from entering the ground. In July 1981 and again in January 1982 the dyke floor became flooded when leaks occurred to one of the transfer pumps. Soon after each of these incidents the tritium levels in nearby groundwater samples increased sharply.

Leak tests on the dyke confirmed that the dyke was leaking. The tests consisted of flooding the dyke floor to a depth of a few inches, of placing several inches of water in nonleaking containers with vertical sides, and of positioning these containers about the dyke floor in a manner to approximate average evaporation conditions; then subsequently comparing the rate by which the water level recedes in the dyke with that in the containers.

To stop the dyke leakage: all joints were filled with a sealant, and an epoxy paint was applied to the floor and to the inside walls to several feet above the floor. Also the blockouts (the depressions in the dyke floor which accommodates the discharge piping of the pumps) were filled with a sealant. This waterproofing treatment was also applied to the dyke for CST-2. Leak tests were again performed, the results indicated that the dykes were sealed.

Test wells T10 through T13 each showed substantial increases in their tritium levels within a month or so of the January 22 pump leak; the levels then generally declined for the remainder of the year. An exception was T12 where the readings increased in the latter part of the year; this test well seems to be at a pendulous location as it has a history of wide swings in its readings. The tritium levels were reportable (that is, the quarterly average was in excess of 3.0 E4 pCi/l) at T10 and T12 for the 1st quarter and at T12 for the 4th quarter.

It is noted that the level at T16 on December 21 was 7.81 E3 pCi/l. The previous maximum at this location was 1.80 E3 pCi/l; this occurred on October 12, 1981.

TABLE 1.4-1

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

pCi/l

Location	n/n_o	Max	Min	Avg
N7A	6/6	5.01 E3	3.48 E3	4.13 E3
P16	4/4	1.76 E5	1.16 E5	1.45 E5
PY12	1/1	1.82 E2	1.82 E2	1.82 E2
PY16	1/1	9.64 E2	9.64 E2	9.64 E2
PY24	1/1	2.44 E2	2.44 E2	2.44 E2
SS2	21/29	2.41 E3	< 9.00 E1	5.75 E2
T10	18/18	4.89 E4	1.01 E4	2.37 E4
T11	18/18	3.69 E4	3.32 E3	1.44 E4
T12	18/18	1.52 E5	5.77 E3	5.19 E4
T13	17/17	1.73 E4	2.49 E3	8.28 E3
T14	8/8	3.67 E3	1.05 E3	1.93 E3
T15	7/8	4.03 E2	< 1.08 E2	2.23 E2
T16	8/8	7.81 E3	1.57 E2	2.26 E3
T18	16/16	1.69 E5	1.76 E4	1.20 E5
YD2	15/21	1.14 E3	< 9.00 E1	2.97.E2

The tritium levels at P16 and T18 have been reportable for several years, ever since samples were collected there. Test hole P16 was dry for most of the year, however two samples were obtained early in the year and two more were obtained in July; the levels were somewhat higher than the 1981 levels. The levels at T18 increased steadily during the first half of the year, but declined at a greater rate during the latter half of the year. It takes a longer time for the impact of the pump leaks to reach these two test holes.

1.4.2 Area Near NE Corner 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 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 acquifer, 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.

Peak readings were:

2.97 E5 pCi/l at P17B on 2/16/79
2.05 E5 pCi/l at T4 on 8/09/79
2.08 E5 pCi/l at N9B on 5/13/80

The readings at P17B then dropped below 3.0 E4 pCi/l, the RL, in the 4th quarter of 1979 and have subsequently remained below the RL. The readings at T4 dropped below the RL in the 3rd quarter of 1980.

The level at N9B dropped to 8.17 E4 pCi/l in June of 1981, but subsequently rose to 1.14 E5 pCi/l by mid December of 1981. Increases in early 1982 were rapid, reaching 4.71 E5 pCi/l on February 19; readings then remained near that level for several months.

Several yards to the west and to the east of N9B are test holes T3 and T8, respectively. These test holes, especially T3, generally reflect the readings at N9B, but at a somewhat lower level. The levels at T3 also increased dramatically early in the year. The readings at both N9B and T3 were reportable for the entire year. Around midyear: the level at T3 declined significantly; slight declines also began at N9B and T8.

TABLE 1.4-2

ANNUAL SUMMARY OF TRITIUM LEVELS IN GROUNDWATER SAMPLES FROM AREA NEAR NE CORNER OF THE UNIT 1 TURBINE BUILDING

pCi/l

Location	n/n_o	Max	Min	Avg.
N9B	26/26	4.80 E5	2.55 E5	3.85 E5
P15B	5/5	7.63 E3	1.50 E3	3.46 E3
P17A	1/4	1.59 E2	< 8.80 E1	1.59 E2
P17B	8/8	1.64 E4	3.01 E3	8.00 E3
Pipe Chase	24/24	2.80 E5	1.95 E2	2.44 E4
PY4	1/1	4.17 E2	4.17 E2	4.17 E2
PY5	22/22	6.54 E4	4.10 E2	1.47 E4
SS1	13/17	1.12 E4	< 8.80 E1	3.58 E3
T2	11/11	5.44 E3	1.98 E3	2.86 E3
T3	26/26	1.60 E5	2.12 E4	7.64 E4
T4	9/9	3.41 E4	4.12 E2	9.56 E3
T8	18/18	7.99 E3	4.53 E3	6.51 E3
YD3	21/24	5.17 E3	< 9.00 E1	9.44 E2

An investigation was initiated in the first quarter to determine the cause of the sudden increases at N9B and T3. Early in May a new extraneous source of tritium to the groundwater in this area was discovered. This source is 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 flows to the north wall and then under the wall panel to the outside of the building; it then collects in the pipe chase for the auxiliary steam boiler. Open joints between the pipe chase and the turbine building basement wall allows water to enter the ground and flow along the basement wall. This likely provides an easy path to the area of N9B and T3.

The precoat tank overflowed on April 30; gamma scans of water taken from the pipe chase early in May were found to be similiar to gamma scans of water taken from the precoat tank. The open portion of the turbine building north wall which provided this path to the outside of the building was promptly sealed. The precoat tank may have overflowed in the past.

The tritium level in the pipe chase on May 4 was 2.8 E5 pCi/l; all subsequent readings for the next five months were 2 to 3 orders of magnitude lower. This reduction was believed to have resulted from the elimination of further leakages from the turbine building. The readings for the pipe chase were reportable for the 2nd and 4th quarters.

Normally, when the level of water in the steam pipe chase reaches a given height, a sump pump removes the water 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.

Since correlating water in the pipe chase with that in the precoat tank, the steam pipe chase sump pump has been tagged out. A gamma scan is run on a sample of water from the pipe chase before pumping out the chase. If manmade radionuclides should be detected, the water would be drummed and sent to radwaste.

Abrupt increases in the tritium level were noted in the sample collected on October 19 in the pipe chase. Gamma scans were run by the contract lab on the samples taken on October 19 and November 2. These scans were for 30,000 seconds; the results in pCi/l were as follows:

Radionuclide	10/19	11/02
Mn-54	2.31 E2	
Co-58	6.02 E2	
Co-60	7.07 E2	
Zn-65	3.79 E3	1.76 E2
Cs-134	1.89 E2	
Cs-137	3.21 E2	

It appears that condensate water was present in these samples. It has not yet been determined how condensate water could have gotten into the pipe chase.

The pipe chase had been pumped out sometime before September 11; it was not pumped out again until December 12. Gamma scans were run on samples from the pipe chase on September 11, October 23, November 2 and 9, and December 12. Naturally occurring K-40 was the only radionuclide identified. These scans were run for 3000 seconds on the GeLi detector except for the October 23 sample which was run for 1000 seconds. Now, each time samples are collected in the pipe chase for tritium analysis, 3000 second gamma scans are run.

The occurrence of April 30 as described by LER No. 50-321/1982-038 when about 30 gallons of condensate water were spilled near the NE corner of the Unit 1 turbine building may have also had some impact on the tritium levels measured in the N9B area.

Late in the year, the levels at T4 suddenly became reportable after being below the RL for 9 consecutive quarters. This resurgence at T4 might be attributed to a slight shift of the main body of the tritiated groundwater.

The levels at P15B which is on the west side of the Unit 1 turbine building are noted to average more than 2.5 times those in the previous year. The levels are still not considered to be excessively high, however. The increases might be indicative of a movement of the tritiated water.

The readings on December 12 at SS1 was 1.12 E4 pCi/l; 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 6.55 E3 pCi/l. The readings at outfalls are important because they measure releases to the public. The previous maxima were set last year at SS2 where the reading on November 13 was 6.87 E3 pCi/l and the 4th quarter average was 2.42 E3 pCi/l. The significant increase in 1982 is of concern. The new individual maximum reading is a factor of more than 260 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 0.17 mrem. This dose estimate is very conservative because it assumes that some individual were to obtain 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 E4 pCi/l according to EPA's National Interim Primary Drinking Regulations, 40 CFR 141.16.

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 readings at test holes N8B and N10B are noted to have more than doubled their usual levels; these readings are still quite low, however. The average level for yard drain YD1 has also doubled; it is possible that the new high reading at this location could be due to cross contamination or mislabelling. In subsequent paragraphs an explanation is offered for the readings at test hole A2 and at test holes N3B and P13B.

Previous readings at A2 had ranged from 1.40 to 3.00 E2 pCi/l. The higher readings shown in Table 1.4-3 are probably due to the leaks to the ground resulting from the seal failure to one of the Unit 2 condensate transfer pumps which occurred on September 30, 1981. As previously reported, the penetration in the dyke wall which allowed water to flow out of the dyke has been plugged.

As reported in LER No. 50-366/1982-074, on July 15 about 100 gallons of condensate water flowed out of the Unit 2 turbine building subsequent to the overflow of the condensate demineralizer precoat tank. The water was contained, but a small area outside the building was contaminated. The cause of this event was equipment failure compounded by procedural deficiency.

TABLE 1.4-3

ANNUAL SUMMARY OF TRITIUM LEVELS IN GROUNDWATER
SAMPLES FROM OTHER AREAS

pCi/l

Location	n/n_o	Max.	Min.	Avg.
A2	3/3	1.52 E3	1.10 E2	1.00 E3
N3B	2/2	4.42 E2	1.70 E2	3.06 E2
N8B	1/2	8.41 E2	<1.08 E2	8.41 E2
N10B	2/2	1.15 E3	6.57 E2	9.04 E2
P13B	1/1	1.07 E3	1.07 E3	1.07 E3
P15A	0/2		<9.90 E1	
YD1	6/8	5.14 E3	<9.50 E1	1.09 E3

The contaminated water was vacuumed up and sent to radwaste; seven barrels of sand and gravel and other contaminated materials were removed. The defective equipment was repaired; a procedure change was promptly initiated.

The tritium level on the date of this event in the condensate demineralizer resin slurry tank was 3.07 E6 pCi/l; the tritium level in the water contained outside the building was 2.11 E6 pCi/l; and the tritium level in water standing in a nearby yard drain was 1.01 E3 pCi/l.

The impact of the spill on the tritium level in groundwater might be monitored by samples from test holes A3, N3B, N5B and P13B. On each attempt to take samples at A3 and N5B, the test holes were dry as is often the case. Samples were collected, however, on August 31 at N3B and on November 16 at both N3B and P13B. The twice normal but still low reading at N3B on November 16 might be attributed to this spill. Only two samples had been previously obtained at P13B, both were less than the LLD; the November 16 reading which is about an order of magnitude above the current LLD is attributed to this spill.

It had been noticed that sometimes the elevation of the water level in the annular portion of test holes N9B and N10B was near the top of the pipe. Out of curiosity samples were collected from the annuli of these two test holes on April 28; the tritium levels were 2.12 E4 and 5.31 E2 pCi/l for N9B and N10B, respectively. These levels are about half of what might be expected in samples collected in the normal manner at these locations as indicated from the data in Tables 1.4-2 and 1.4-3.

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 1982 results were available. The results reported herein also include the 1981 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 is provided in the text for any comparisons showing "Disagreements". 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. The results of the I-131 and the Cs-137 analyses of milk samples are listed in Table 1.5-2. The results of the gamma and tritium analyses of water are tabulated in Table 1.5-3. All comparisons show agreement.

TABLE 1.5-1

CROSSCHECK PROGRAM RESULTS FOR AIR FILTERS

pCi/filter

Date	Known	Result	Resolution	Ratio
		Gross Beta		
3/26/82	55 ± 5	49.7 ± 1.5	11.0	0.90
9/24/82	67 ± 2.9	50.3 ± 1.2	23.1	0.75
		Cs-137		
9/25/81	19 ± 5	32 ± 2	3.8	1.68
3/26/82	23 ± 5	38 ± 4	4.6	1.65
9/24/82	27 ± 5	23 ± 2	5.4	0.85

TABLE 1.5-2

CROSSCHECK PROGRAM RESULTS FOR MILK SAMPLES

pCi/l

Date	Known	Result	Resolution	Ratio
		Co-60		
4/23/82	30 ± 5	36 ± 3	6.0	1.20
		I-131		
10/23/81	52 ± 6	50 ± 1	8.7	0.96
7/23/82	5.4 ± 0.8	6.3 ± 0.6	6.8	1.17
		Cs-137		
10/23/81	25 ± 5	27 ± 7	5.0	1.08
4/23/82	28 ± 5	32 ± 2	5.6	1.14
		Ba-140		
7/24/81	0.0	< 9		
10/23/81	0.0	< 10		
4/23/82	0.0	< 8.3		

TABLE 1.5-3

CROSSCHECK PROGRAM RESULTS
FOR WATER SAMPLES

pCi/l

Date	Known	Result	Resolution	Ratio
		Cr-51		
2/05/82	0.0	<90		
6/04/82	23±5	<87	4.6	
10/01/82	51±5	<100	10.2	
		Co-60		
2/05/82	20±5	19±1	4.0	0.95
6/04/82	29±5	27±3	5.8	0.93
10/01/82	20±5	25±2	4.0	1.25
		Zn-65		
2/05/82	15±5	<10	3.0	
6/04/82	26±5	31±5	5.2	1.19
10/01/82	24±5	25±3	4.8	1.04
		Ru-106		
2/05/82	20±5	< 43	4.0	
6/04/82	0.0	< 50		
10/01/82	30±5	< 57	6.0	
		Cs-134		
2/05/82	22±5	20±2	4.4	0.91
6/04/82	35±5	33±1	7.0	0.94
10/01/82	19±5	19±3	3.8	1.00
		Cs-137		
2/05/82	23±5	21±4	4.6	0.91
6/04/82	25±5	26±2	5.0	1.04
10/01/82	20±5	22±2	4.0	1.10
		H-3		
12/11/81	2700±355	2713±188	7.61	1.00
2/12/82	1820±342	2270±182	5.32	1.25
4/09/82	2860±360	2947± 90	7.94	1.03
6/11/82	1830±197	1737± 21	9.29	0.95
8/13/82	2890±390	2857± 64	7.41	0.99
10/08/82	2560±204	2467±105	12.55	0.96

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		
	Agreement	Possible Agreement "A"	Possible Agreement "A"
< 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 te 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.

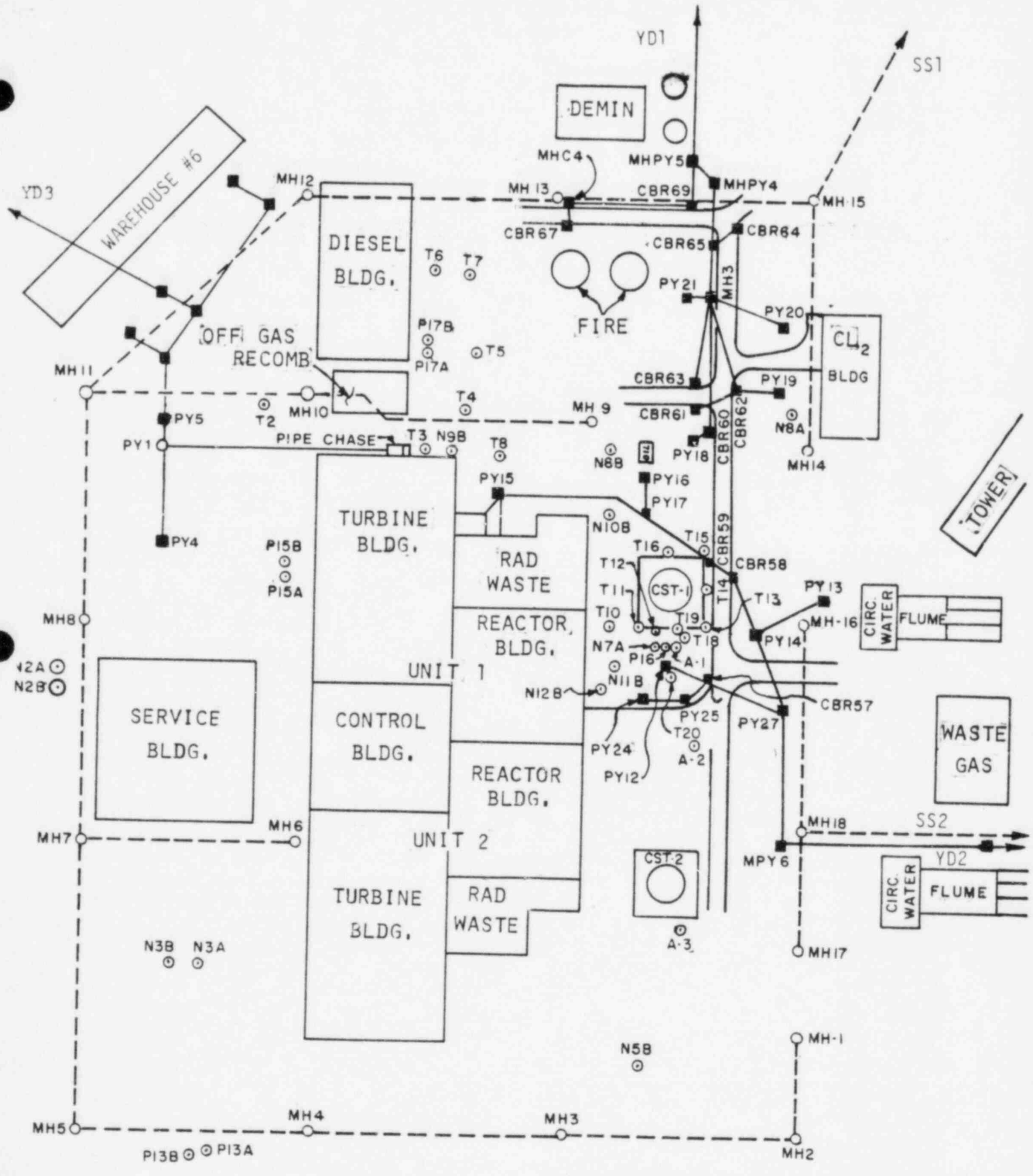
A barely detectable level of I-131 in a charcoal filter was correlated with atmospheric releases. This marks the first time that radiological levels in environmental samples were shown to be due to plant releases.

A measurable radiological impact upon the environment as a consequence of discharges to the river was not established.

The radiological levels in the environmental samples collected during 1982 showed the impact of the nuclear weapons tests conducted in recent years by the Peoples Republic of China to have diminished.

The environmental impact of the high tritium levels found in groundwater samples during 1982 has increased, but it 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 Agreement in all cases.



--- SUBSURFACE DRAIN SYSTEM

⊙ – TEST HOLE

■ – CATCH BASIN

100'

Scale

GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT

TEST HOLES AND THE DRAINAGE SYSTEM.

HNP
ANNUAL REPORT

CHAPTER 2

METEOROLOGICAL MONITORING

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METEOROLOGICAL MONITORING

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2. METEOROLOGICAL MONITORING

2.1 Specification

The on-site meteorological monitoring program is carried out as recommended by the USNRC Regulatory Guide 1.23.

2.2 On-site Meteorological Monitoring Program

The on-site meteorological monitoring instrumentation, data acquisition, and maintenance and calibration programs are as described in Section 3 of the HNP-1 Semi-Annual Report for September - December, 1974, and Section 2.3 of the HNP-1 Final Safety Analysis Report.

2.3 Data Summaries - 1982

Joint frequency tables of wind speed and direction by stability category for the 150-foot and the 75-foot level are presented in Tables 2.2-1 and 2.2-2. Wind roses for 150-foot and 75-Foot levels are shown in Figures 2.2-1 through 2.2-10. These are shown as annual and quarterly wind roses. Ambient temperature and dew point temperature are shown in Figures 2.2-11 and 2.2-12. These are presented as the average maximum, the average, and the average minimum for each month. Monthly and annual precipitation totals are shown in Table 2.2-3. The percent data recovery for the parameters is shown in Table 2.2-4.

2.4 Comparison of 1982 Data

The meteorological data from Plant Hatch for 1982 agrees quite well with previous years considering normal year-to-year climatic variations. The data recovery for the pertinent parameters of wind speed and direction 150 ft. and delta temperature 150-33 ft. was about 88%. Data recovery for all parameters averaged about 98%.

Wind rose data from 150 ft. and 75 ft. agree well between levels on the tower and between years. The major difference between 1982 and other years is that there were more winds from the northeast to east, particularly during the fall season. In correlation with the additional northeast to east winds, there were less southwest to west winds during 1982.

The temperature data for 1982 compares reasonably well with previous years for both ambient and dew point temperatures. The ambient temperatures were generally cooler during the period of January through April, about average for the summer months, and warmer than normal during the fall season. This parallels the temperature trends across the U.S. during 1982. The dew point temperature readings from 1982 were generally warmer than normal throughout the year.

The joint frequency data for wind speed and direction 150 ft. versus delta temperature 150-33 ft. in comparison with the previous four years is shown below. There were less hours of unstable conditions and more hours of neutral conditions than in previous years. This may be accounted for in part by the increase in northeast winds which are generally strong and, in some cases, indicative of stormy periods. Strong winds and/or rain usually result in neutral stability conditions.

Plant Hatch Stability Classification

Stability Group	Percent Stability Year 1982	1981	1980	1979	1978	5-yr. Average
A	16.2	21.7	25.2	19.5	21.8	20.9
B	3.8	4.6	3.0	4.0	4.1	3.9
C	2.3	2.0	1.2	2.2	2.1	2.0
D	20.8	19.0	14.2	20.7	20.4	19.0
E	34.3	29.1	31.3	27.2	29.3	30.2
F	14.8	11.7	13.3	13.6	13.1	13.3
G	7.8	11.9	11.8	12.8	9.2	10.7
TOTAL HOURS	7725	7944	8361	7320	7537	

The precipitation total for 1982 was 26.66 inches. This represents one of the lowest amounts ever from the Plant Hatch site. It may be indicative of rain gauge problems that did not show up on the strip charts. Plant Hatch personnel have been requested to investigate this problem. A comparison of the data from Plant Hatch with other local National Weather Service sites will be made when the data becomes available. Precipitation in the eastern U.S. was generally considered about normal during 1982. Normal annual precipitation for the Plant Hatch area would be about 45 inches.

TABLE 2.2-1

JOINT FREQUENCY TABLE OF WIND SPEED AND DIRECTION
150 FT. VERSUS DELTA TEMPERATURE 150-33 FT.
(1/1/82 - 12/31/82)

SITE: PLANT HATCH
HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 82010101-82123124
STABILITY CLASS: A DT/DZ
ELEVATION: SPEED: DIRECTION: LAPSE:

WIND DIRECTION	WIND SPEED(MPH) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	1	13	11	5	0	0	30
NNE	1	9	14	4	0	0	28
NE	4	23	48	30	2	0	107
ENE	6	59	90	39	11	0	206
E	3	59	55	10	3	0	130
ESE	4	31	22	1	0	0	58
SE	3	18	21	4	0	0	46
SSE	3	17	10	5	1	0	36
S	1	10	18	2	1	2	34
SSW	5	13	28	10	0	1	57
SW	4	29	34	12	2	0	81
WSW	1	32	44	28	0	0	105
W	3	41	50	38	9	4	145
WNW	3	28	59	19	7	0	116
NW	1	12	7	16	4	1	41
NNW	0	10	7	11	0	0	28
TOTAL	43	484	518	234	40	8	1248

PERIODS OF CALM(HOURS): 19
VARIABLE DIRECTION 12
HOURS OF MISSING DATA: 1035

TABLE 2.2-1 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD = 82010101-82123124

STABILITY CLASS: B DT/DZ

ELEVATION: SPEED: DIRECTION: LAPSE:

WIND DIRECTION	WIND SPEED(MPH) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	2	1	0	0	3
NNE	1	1	3	2	0	0	7
NE	1	4	11	7	0	0	23
ENE	2	13	24	3	0	0	42
E	4	17	8	1	0	0	30
ESE	2	15	3	2	0	0	22
SE	2	6	7	2	0	0	17
SSE	1	2	4	1	0	0	8
S	0	6	4	1	2	0	13
SSW	0	7	11	3	0	1	22
SW	1	8	8	3	2	0	22
WSW	0	8	13	4	0	1	26
W	1	8	11	6	1	0	27
WNW	0	6	10	7	0	1	24
NW	2	1	6	2	0	0	11
NNW	0	2	0	2	0	0	4
TOTAL	17	104	125	47	5	3	301

PERIODS OF CALM(HOURS): 19

VARIABLE DIRECTION 1

HOURS OF MISSING DATA: 1035

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD = 82010101-82123124

STABILITY CLASS: C DT/DZ

ELEVATION: SPEED: DIRECTION: LAPSE:

WIND DIRECTION	WIND SPEED(MPH) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	1	0	0	0	0	1
NNE	0	2	2	1	0	0	5
NE	0	3	7	6	0	0	16
ENE	0	6	18	9	0	0	33
E	1	13	8	1	0	0	23
ESE	0	8	1	1	0	0	10
SE	1	4	3	1	0	0	9
SSE	0	3	3	0	0	0	6
S	2	4	4	2	0	0	12
SSW	1	1	6	1	4	1	14
SW	1	8	5	2	0	0	16
WSW	0	7	4	0	0	0	11
W	1	3	3	2	0	0	9
WNW	0	4	2	1	0	1	8
NW	0	2	2	1	1	0	6
NNW	0	0	2	0	0	0	2
TOTAL	7	69	70	28	5	2	181

PERIODS OF CALM(HOURS): 19

VARIABLE DIRECTION 3

HOURS OF MISSING DATA: 1035

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD = 82010101-82123124

STABILITY CLASS: D DT/DZ

ELEVATION: SPEED: DIRECTION: LAPSE:

WIND DIRECTION	WIND SPEED(MPH) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	6	17	6	0	0	29
NNE	3	8	16	8	0	0	35
NE	4	17	98	22	1	0	142
ENE	8	53	120	31	0	0	212
E	7	86	76	6	0	0	175
ESE	13	47	55	12	1	0	128
SE	8	39	41	14	0	0	102
SSE	9	31	20	10	0	0	70
S	6	34	37	8	1	0	86
SSW	9	45	46	21	1	0	122
SW	12	62	41	19	1	0	135
WSW	5	46	45	13	2	0	111
W	5	28	57	15	0	0	105
WNW	2	28	43	16	1	0	90
NW	2	0	17	19	3	0	41
NNW	0	7	3	10	0	0	20
TOTAL	93	537	732	230	11	0	1603

PERIODS OF CALM(HOURS): 19

VARIABLE DIRECTION 5

HOURS OF MISSING DATA: 1035

TABLE 2.2-1 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD = 82010101-82123124

STABILITY CLASS: E DT/DZ

ELEVATION: SPEED: DIRECTION: LAPSE:

WIND DIRECTION	WIND SPEED(MPH) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	3	8	17	5	0	0	33
NNE	0	12	37	20	0	0	69
NE	6	26	133	26	2	0	194
ENE	14	75	161	8	1	0	260
E	25	123	132	3	0	0	283
ESE	15	109	104	4	0	0	232
SE	20	99	143	6	0	0	268
SSE	20	84	81	3	0	0	188
S	14	56	87	12	0	0	169
SSW	15	59	122	18	0	0	214
SW	17	67	68	21	1	0	174
WSW	10	57	67	11	1	0	146
W	10	44	75	19	2	0	150
WNW	2	25	76	19	0	0	122
NW	3	9	30	52	2	0	96
NNW	4	8	23	16	0	0	51
TOTAL	178	861	1356	243	9	0	2649

PERIODS OF CALM(HOURS): 19

VARIABLE DIRECTION 9

HOURS OF MISSING DATA: 1035

TABLE 2.2-1 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD = 82010101-82123124

STABILITY CLASS: F DT/DZ

ELEVATION: SPEED: DIRECTION: LAPSE:

WIND DIRECTION	WIND SPEED(MPH) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	5	4	13	2	0	0	24
NNE	0	12	12	5	0	0	29
NE	4	21	55	17	0	0	97
ENE	5	37	62	5	0	0	109
E	10	49	42	0	0	0	101
ESE	9	51	42	0	0	0	104
SE	14	51	36	0	0	0	101
SSE	5	42	34	3	1	0	85
S	17	32	27	3	0	0	79
SSW	9	33	32	3	0	0	77
SW	10	31	37	7	0	0	85
WSW	4	23	27	4	0	0	59
W	2	24	37	8	0	0	71
WNW	5	8	33	3	0	0	49
NW	3	5	19	17	0	0	44
NNW	2	2	15	7	0	0	26
TOTAL	104	425	523	84	1	0	1140

PERIODS OF CALM(HOURS): 19

VARIABLE DIRECTION 3

HOURS OF MISSING DATA: 1035

TABLE 2.2-1 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD = 82010101-82123124

STABILITY CLASS: G DT/DZ

ELEVATION: SPEED: DIRECTION: LAPSE:

WIND DIRECTION	WIND SPEED(MPH) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	2	1	5	0	0	0	8
NNE	1	8	9	1	0	0	19
NE	4	21	56	20	0	0	101
ENE	9	16	27	3	0	0	55
E	8	14	30	1	0	0	53
ESE	1	21	18	1	0	0	42
SE	5	14	14	0	0	0	35
SSE	5	16	7	2	1	0	26
S	3	10	4	5	0	0	22
SSW	5	13	12	5	0	0	36
SW	2	20	17	2	0	0	41
WSW	7	12	22	1	0	0	44
W	0	17	26	2	0	0	45
WNW	1	11	22	5	0	0	40
NW	1	6	9	9	0	0	25
NNW	0	1	7	3	0	0	11
TOTAL	54	195	285	60	1	0	603

PERIODS OF CALM(HOURS): 19

VARIABLE DIRECTION 4

HOURS OF MISSING DATA: 1035

SITE: PLANT HATCH
HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 82010101-82123124
STABILITY CLASS: ALL DT/DZ
ELEVATION: SPEED: DIRECTION: LAPSE:

WIND DIRECTION	WIND SPEED(MPH) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	11	33	65	19	0	0	128
NNE	6	52	93	41	0	0	192
NE	23	115	408	128	5	0	680
ENE	44	259	502	98	12	0	917
E	58	361	351	22	3	0	795
ESE	44	282	245	21	1	0	596
SE	53	231	265	27	0	0	578
SSE	43	189	159	24	3	0	419
S	43	152	181	33	4	2	415
SSW	44	171	257	61	5	3	542
SW	47	225	210	66	6	0	554
WSW	27	185	222	61	3	1	502
W	22	165	259	90	12	4	552
WNW	13	110	245	70	8	2	449
NW	12	35	90	116	10	1	264
NNW	6	30	57	49	0	0	142
TOTAL	496	2595	3609	926	72	13	7725

PERIODS OF CALM(HOURS): 19
VARIABLE DIRECTION 37
HOURS OF MISSING DATA: 1035

TABLE 2.2-2

JOINT FREQUENCY TABLE OF WIND SPEED AND DIRECTION
75 FT. VERSUS DELTA TEMPERATURE 150-33 FT.
(1/1/82 - 12/31/82)

SITE: PLANT HATCH
HOURS AT EACH WIND SPEED AND DIRECTION
PERIOD OF RECORD = 82010101-82123124
STABILITY CLASS: A DT/DZ
ELEVATION: SPEED: DIRECTION: LAPSE:

WIND DIRECTION	WIND SPEED(MPH) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	4	18	9	1	0	0	32
NNE	4	12	12	0	0	0	28
NE	8	35	35	13	0	0	92
ENE	14	88	62	6	0	0	170
E	35	84	40	3	0	0	162
ESE	10	42	20	1	0	0	73
SE	13	20	6	0	0	0	39
SSE	7	19	7	2	0	0	35
S	8	17	13	2	0	0	41
SSW	11	21	19	2	0	0	54
SW	22	33	30	7	0	0	93
WSW	20	58	41	2	0	0	121
W	21	67	74	11	1	0	175
WNW	20	33	29	4	0	0	86
NW	13	16	23	6	0	0	58
NNW	5	6	7	0	0	0	18
TOTAL	215	569	427	63	1	0	1277

PERIODS OF CALM(HOURS): 78
VARIABLE DIRECTION 24
HOURS OF MISSING DATA: 1166

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD = 82010101-82123124

STABILITY CLASS: B DT/DZ

ELEVATION: SPEED: DIRECTION: LAPSE:

WIND DIRECTION	WIND SPEED(MPH) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	0	1	1	0	0	2
NNE	0	1	2	1	0	0	4
NE	2	7	12	2	0	0	23
ENE	4	13	15	1	0	0	33
E	4	25	7	0	0	0	37
ESE	6	11	8	0	0	0	26
SE	1	8	1	2	0	0	12
SSE	6	4	1	0	0	0	12
S	3	9	5	2	0	0	19
SSW	4	9	8	0	1	0	22
SW	1	11	9	2	1	0	24
WSW	1	11	9	0	0	0	21
W	6	18	12	1	0	0	37
WNW	1	6	6	1	0	0	14
NW	2	1	2	1	0	0	6
NNW	0	3	1	0	0	0	4
TOTAL	41	137	99	14	2	0	296

PERIODS OF CALM(HOURS): 78

VARIABLE DIRECTION 1

HOURS OF MISSING DATA: 1166

TABLE 2.2-2 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD = 82010101-82123124

STABILITY CLASS: C DT/DZ

ELEVATION: SPEED: DIRECTION: LAPSE:

WIND DIRECTION	WIND SPEED(MPH) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	0	1	1	0	0	0	2
NNE	0	1	2	0	0	0	3
NE	0	4	12	1	0	0	17
ENE	1	13	14	0	0	0	28
E	9	6	6	0	0	0	23
ESE	1	11	1	0	0	0	13
SE	1	5	2	0	0	0	8
SSE	1	4	2	0	0	0	7
S	1	6	2	2	0	0	11
SSW	3	5	4	4	1	0	17
SW	3	8	2	0	1	0	14
WSW	2	8	3	0	0	0	13
W	4	5	3	0	0	0	12
WNW	0	4	3	1	0	0	8
NW	0	2	1	0	0	0	3
NNW	1	0	0	0	0	0	1
TOTAL	27	83	58	8	2	0	180

PERIODS OF CALM(HOURS): 78

VARIABLE DIRECTION 0

HOURS OF MISSING DATA: 1166

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD = 82010101-82123124

STABILITY CLASS: D DT/DZ

ELEVATION: SPEED: DIRECTION: LAPSE:

WIND DIRECTION	WIND SPEED(MPH) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	3	6	9	2	0	0	21
NNE	2	18	18	6	0	0	44
NE	5	38	98	8	0	0	149
ENE	15	106	83	1	0	0	205
E	23	102	41	0	0	0	166
ESE	21	82	45	5	0	0	156
SE	19	46	22	1	0	0	90
SSE	14	47	3	1	0	0	67
S	17	54	19	4	0	0	95
SSW	12	66	39	8	0	0	125
SW	13	80	34	3	0	0	130
WSW	13	80	27	2	0	0	122
W	10	55	29	1	0	0	95
WNW	5	29	38	2	0	0	74
NW	4	12	18	10	1	0	45
NNW	0	5	8	0	0	0	13
TOTAL	176	826	531	54	1	0	1597

PERIODS OF CALM(HOURS): 78

VARIABLE DIRECTION 5

HOURS OF MISSING DATA: 1166

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD = 82010101-82123124

STABILITY CLASS: E DT/DZ

ELEVATION: SPEED: DIRECTION: LAPSE:

WIND DIRECTION	WIND SPEED(MPH) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	5	8	10	1	0	0	24
NNE	0	24	27	3	0	0	54
NE	14	67	131	5	0	0	218
ENE	60	170	54	0	0	0	285
E	58	163	44	0	0	0	266
ESE	31	196	37	0	0	0	266
SE	51	156	15	0	0	0	228
SSE	48	95	11	1	0	0	156
S	36	126	22	0	0	0	186
SSW	30	121	28	0	1	0	181
SW	34	125	39	1	0	0	199
WSW	19	107	19	0	0	0	146
W	11	89	44	1	0	0	145
WNW	12	39	45	5	0	0	101
NW	2	13	37	8	0	0	60
NNW	3	9	22	0	0	0	34
TOTAL	414	1508	585	25	1	0	2549

PERIODS OF CALM(HOURS): 78

VARIABLE DIRECTION 10

HOURS OF MISSING DATA: 1166

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD = 82010101-82123124

STABILITY CLASS: F DT/DZ

ELEVATION: SPEED: DIRECTION: LAPSE:

WIND DIRECTION	WIND SPEED(MPH) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	2	4	7	0	0	0	13
NNE	5	12	9	1	0	0	27
NE	4	22	52	4	0	0	82
ENE	38	74	14	1	0	0	128
E	41	79	3	0	0	0	124
ESE	38	72	2	0	0	0	112
SE	28	62	2	0	0	0	93
SSE	18	33	4	0	0	0	56
S	23	59	1	0	0	0	84
SSW	19	60	10	0	0	0	90
SW	16	52	9	0	0	0	77
WSW	12	47	0	1	0	0	60
W	8	35	13	1	0	0	57
WNW	4	28	25	1	0	0	58
NW	6	10	22	1	0	0	39
NNW	7	3	5	0	0	0	15
TOTAL	269	644	178	10	0	0	1107

PERIODS OF CALM(HOURS): 78

VARIABLE DIRECTION 3

HOURS OF MISSING DATA: 1166

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD = 82010101-82123124

STABILITY CLASS: G DT/DZ

ELEVATION: SPEED: DIRECTION: LAPSE:

WIND DIRECTION	WIND SPEED(MPH) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	6	3	1	0	0	0	10
NNE	3	12	9	1	0	0	26
NE	12	25	35	3	0	0	76
ENE	13	50	6	0	0	0	70
E	19	44	4	0	0	0	72
ESE	10	22	1	0	0	0	34
SE	12	18	0	0	0	0	32
SSE	8	5	3	0	0	0	17
S	14	16	6	0	0	0	38
SSW	7	21	2	0	0	0	32
SW	19	20	1	0	0	0	40
WSW	15	21	0	1	0	0	37
W	17	22	7	1	0	0	47
WNW	8	13	8	1	0	0	30
NW	6	5	5	0	0	0	17
NNW	6	2	2	0	0	0	10
TOTAL	175	299	90	7	0	0	588

PERIODS OF CALM(HOURS): 78

VARIABLE DIRECTION 2

HOURS OF MISSING DATA: 1166

TABLE 2.2-2 (CONTINUED)

SITE: PLANT HATCH

HOURS AT EACH WIND SPEED AND DIRECTION

PERIOD OF RECORD = 82010101-82123124

STABILITY CLASS: ALL DT/DZ

ELEVATION: SPEED: DIRECTION: LAPSE:

WIND DIRECTION	WIND SPEED(MPH) 1-3	4-7	8-12	13-18	19-24	>24	TOTAL
N	20	40	38	5	0	0	104
NNE	14	80	79	12	0	0	186
NE	45	198	375	36	0	0	657
ENE	145	514	248	9	0	0	919
E	189	503	145	3	0	0	850
ESE	117	436	114	6	0	0	680
SE	125	315	48	3	0	0	502
SSE	102	207	31	4	0	0	350
S	102	287	68	10	0	0	474
SSW	86	303	110	14	3	0	521
SW	108	329	124	13	2	0	577
WSW	82	332	99	6	0	0	520
W	77	291	182	16	1	0	568
WNW	50	144	154	15	0	0	363
NW	33	59	108	26	1	0	228
NNW	22	28	45	0	0	0	95
TOTAL	1317	4066	1968	178	7	0	7594

PERIODS OF CALM(HOURS): 78

VARIABLE DIRECTION 45

HOURS OF MISSING DATA: 1166

TABLE 2.2-3

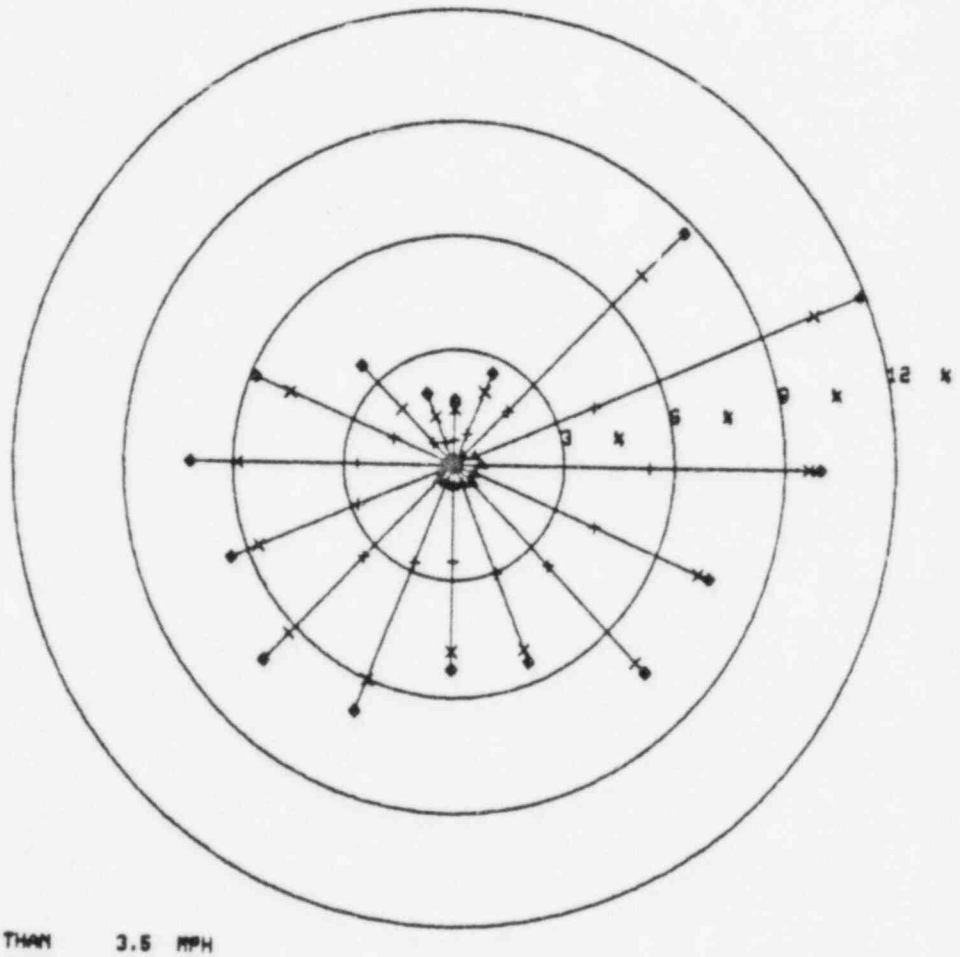
PLANT HATCH 1982
MONTHLY AND ANNUAL PRECIPITATION

Month	Precipitation (inches)
January	1.64
February	2.29
March	2.90
April	5.08
May	1.39
June	2.97
July	5.24
August	0.74
September	0.25
October	0.25
November	1.56
December	2.35
1982 TOTAL	26.66

TABLE 2.2-4

HATCH DATA RECOVERY
(1/1/82 - 12/31/82)

Parameter	Recovery (percent)
Ambient Temperature 33 ft.	99.6
Delta Temperature 150-33 ft.	90.7
Dew Point Temperature 33 ft.	98.2
Wind Speed 75 ft.	98.0
Wind Direction 75 ft.	96.6
Wind Speed 150 ft.	99.2
Wind Direction 150 ft.	97.9
Solar Radiation	99.7
Rainfall	99.6
Composite	
Wind Speed and Direction 75 ft., Delta Temperature 150-33 ft.	86.7
Wind Speed and Direction 150 ft., Delta Temperature 150-33 ft.	88.2



WIND ROSE
(WINDS FROM)
N

▲WIND SPEED LESS THAN 3.5 MPH
+WIND SPEED LESS THAN 7.6 MPH
xWIND SPEED LESS THAN 12.6 MPH
◆WIND SPEED GREATER THAN 12.6 MPH

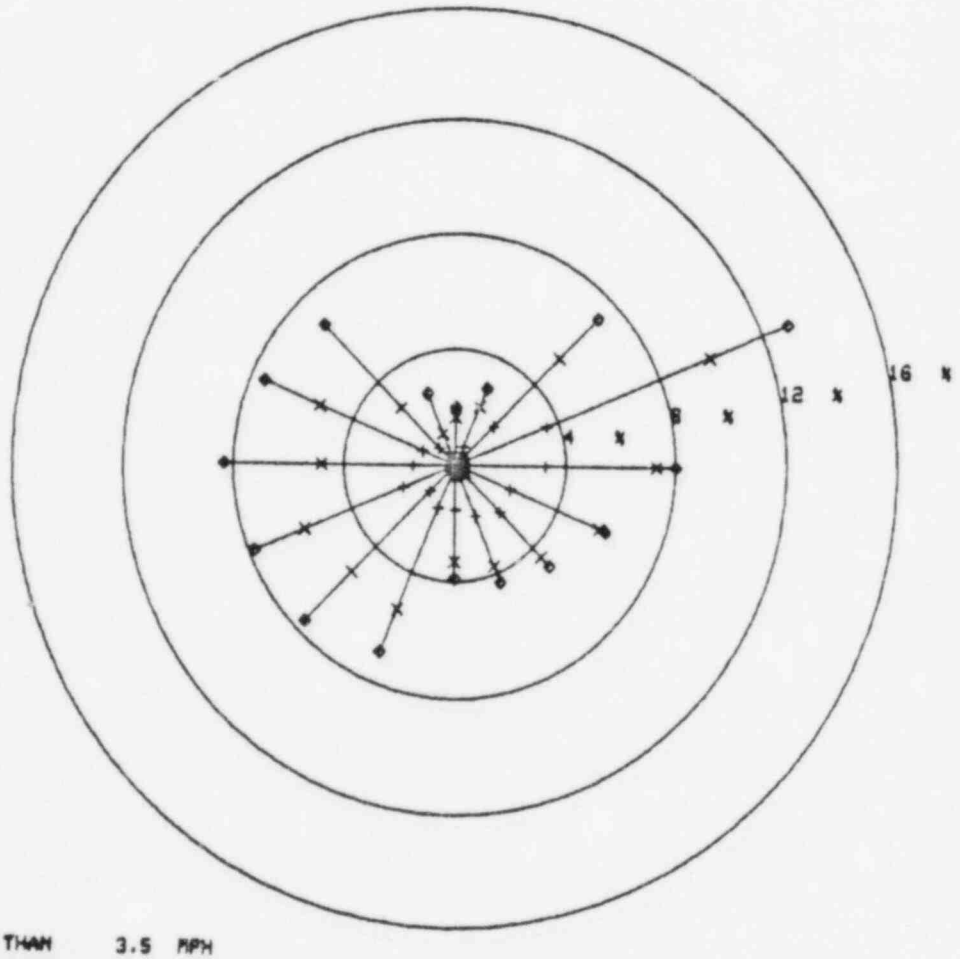
0.8 PERCENT CALMS
(CALMS DEFINED AS SPEED LESS THAN 0.6)

GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT
ANNUAL REPORT

150-FOOT 1982 ANNUAL WIND ROSE

FIGURE 2.2-1



△WIND SPEED LESS THAN 3.5 MPH
+WIND SPEED LESS THAN 7.5 MPH
xWIND SPEED LESS THAN 12.5 MPH
◇WIND SPEED GREATER THAN 12.5 MPH

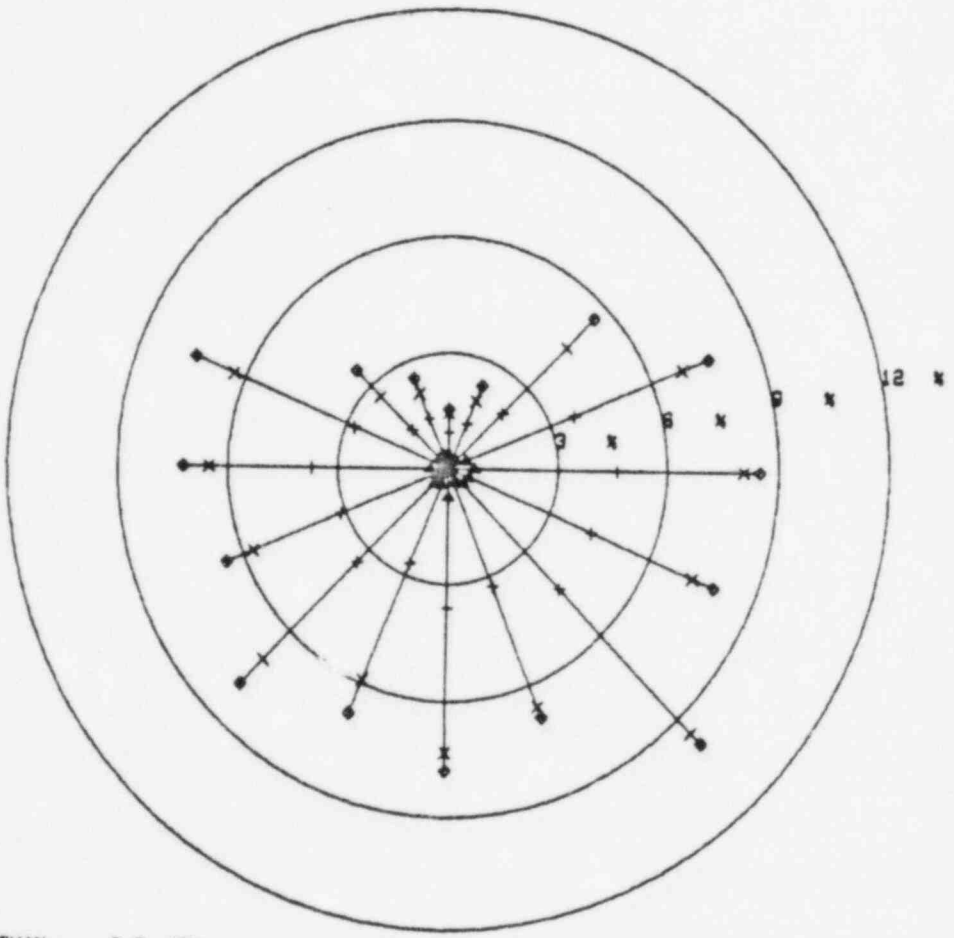
0.4 PERCENT CALMS
(CALMS DEFINED AS SPEED LESS THAN 0.5)

GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT
ANNUAL REPORT

150-FOOT QUARTERLY WIND ROSE
(1/1/82 - 3/31/82)

FIGURE 2.2-2



▲WIND SPEED LESS THAN 3.5 MPH
+WIND SPEED LESS THAN 7.5 MPH
xWIND SPEED LESS THAN 12.5 MPH
◆WIND SPEED GREATER THAN 12.5 MPH

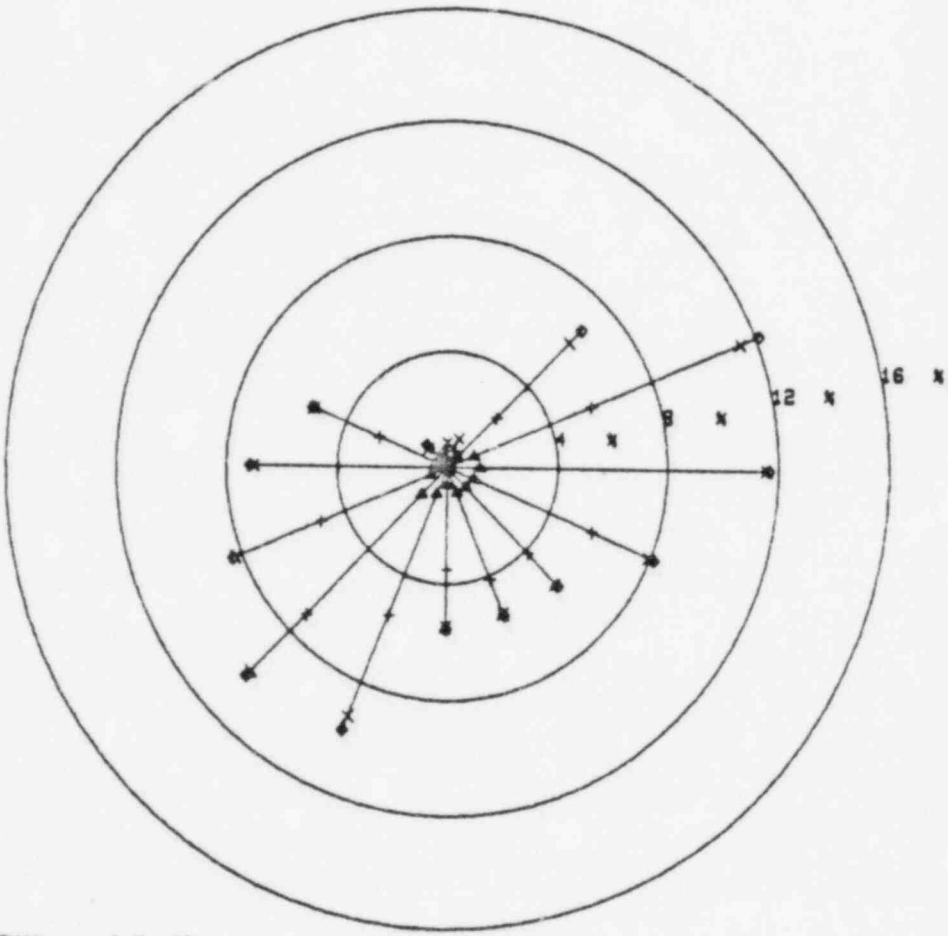
0.0 PERCENT CALMS
(CALMS DEFINED AS SPEED LESS THAN 0.5)

GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT
ANNUAL REPORT

150-FOOT QUARTERLY WIND ROSE
(4/1/82 - 6/30/82)

FIGURE 2.2-3



WIND ROSE
(WINDS FROM)
N

△WIND SPEED LESS THAN 3.5 MPH
+WIND SPEED LESS THAN 7.5 MPH
xWIND SPEED LESS THAN 12.5 MPH
◆WIND SPEED GREATER THAN 12.5 MPH

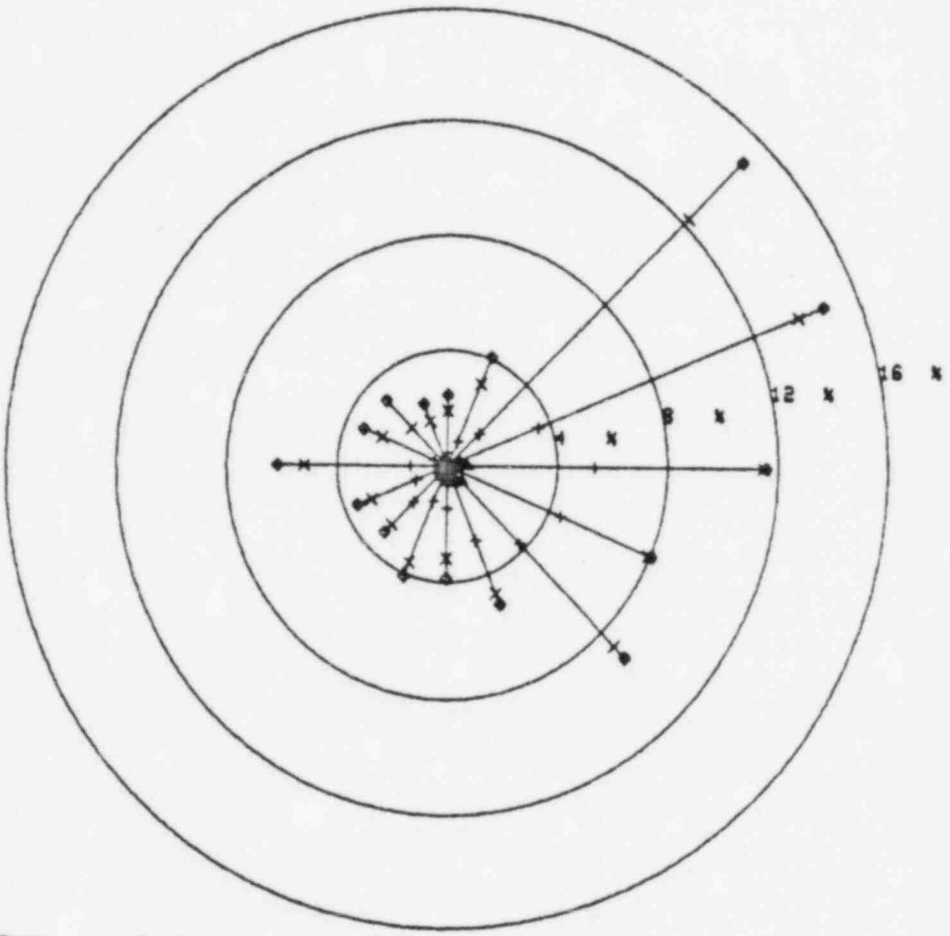
0.4 PERCENT CALMS
(CALMS DEFINED AS SPEED LESS THAN 0.5)

GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT
ANNUAL REPORT

150-FOOT QUARTERLY WIND ROSE
(7/1/82 - 9/30/82)

FIGURE 2.2-4



△WIND SPEED LESS THAN 3.5 MPH
+WIND SPEED LESS THAN 7.5 MPH
xWIND SPEED LESS THAN 12.5 MPH
◇WIND SPEED GREATER THAN 12.5 MPH

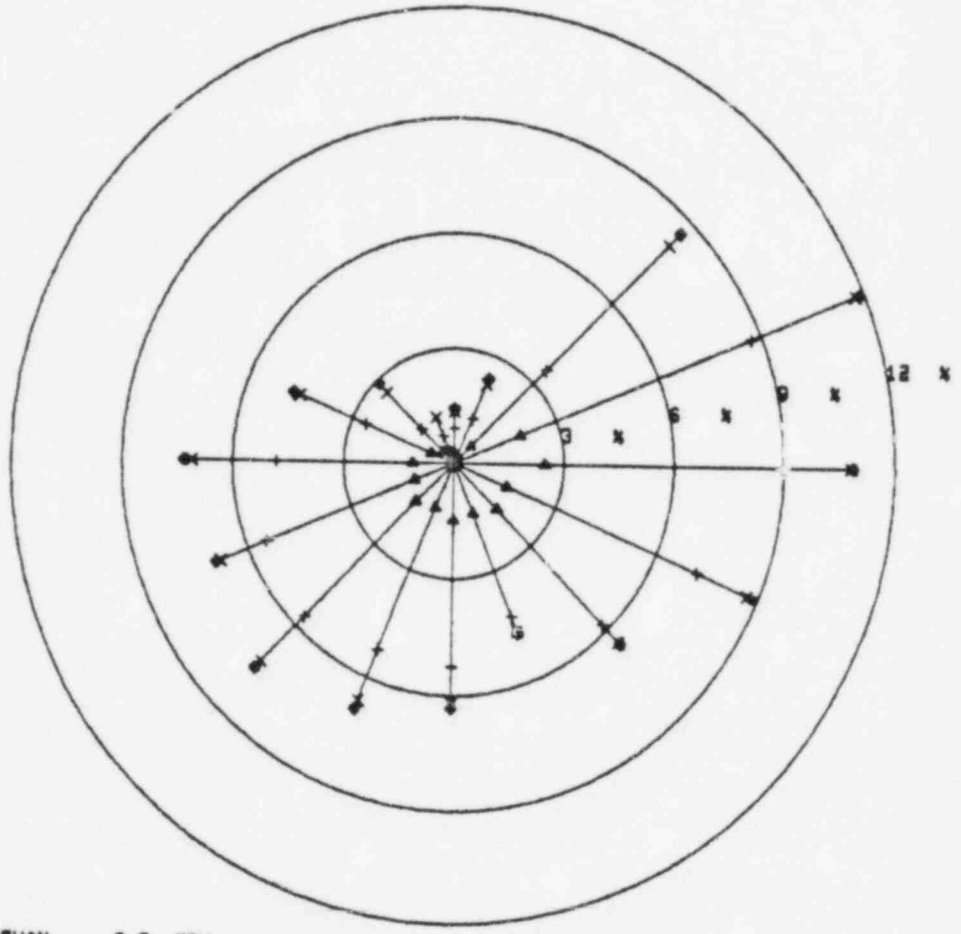
0.1 PERCENT CALMS
(CALMS DEFINED AS SPEED LESS THAN 0.5)

GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT
ANNUAL REPORT

150-FOOT QUARTERLY WIND ROSE
(10/1/82 - 12/31/82)

FIGURE 2.2-5



△WIND SPEED LESS THAN 3.5 MPH
+WIND SPEED LESS THAN 7.5 MPH
XWIND SPEED LESS THAN 12.5 MPH
◆WIND SPEED GREATER THAN 12.5 MPH

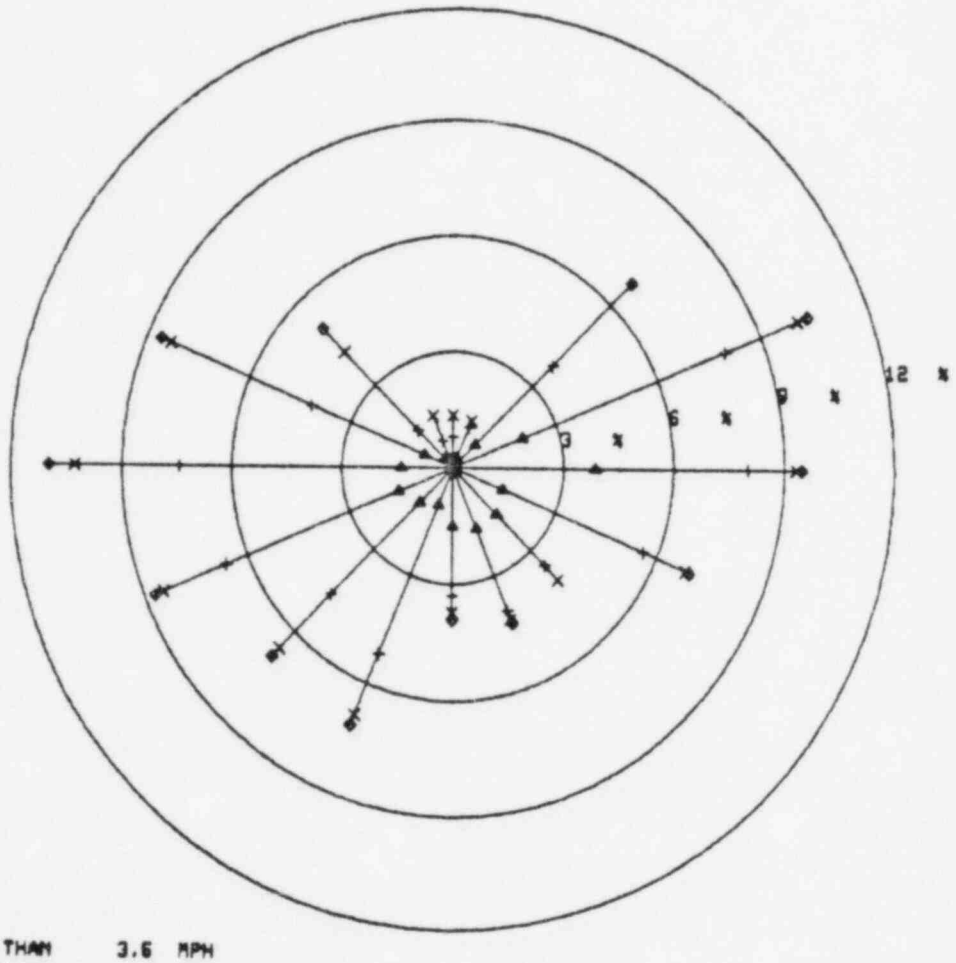
1.0 PERCENT CALMS
(CALMS DEFINED AS SPEED LESS THAN 0.5)

GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT
ANNUAL REPORT

75-FOOT 1982 ANNUAL WIND ROSE

FIGURE 2.2-6



WIND ROSE
(WINDS FROM)
N

▲WIND SPEED LESS THAN 3.6 MPH
+WIND SPEED LESS THAN 7.5 MPH
xWIND SPEED LESS THAN 12.5 MPH
◆WIND SPEED GREATER THAN 12.5 MPH

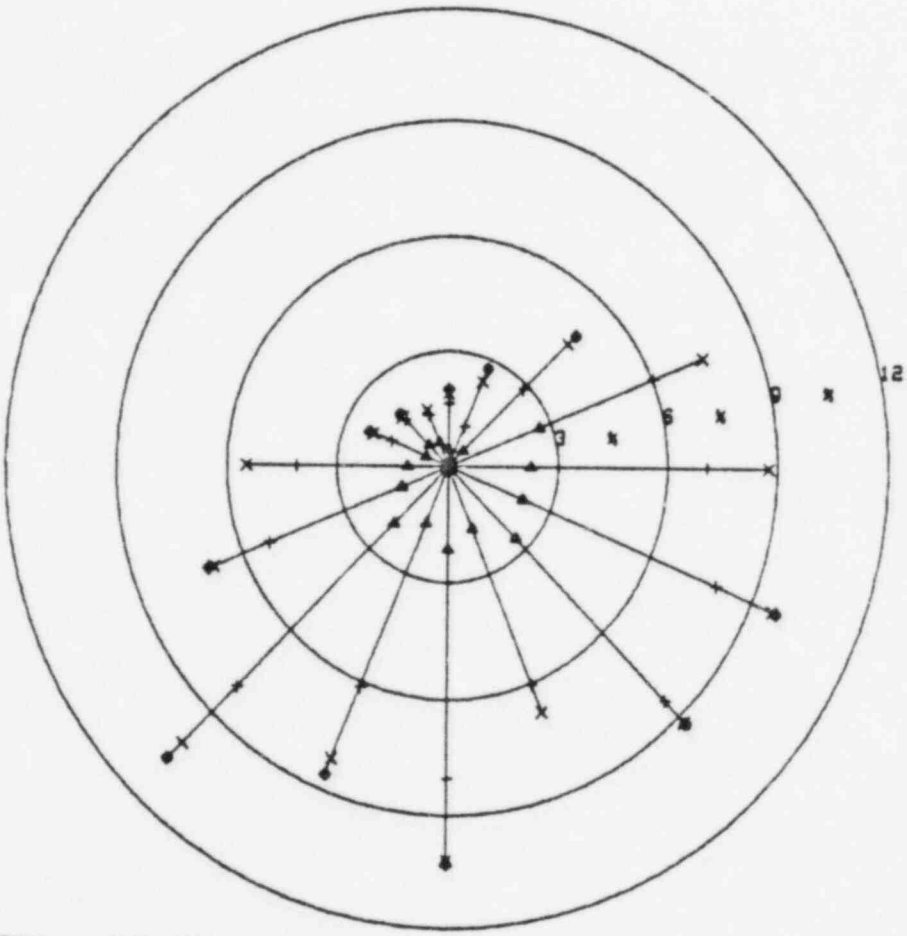
8.7 PERCENT CALMS
(CALMS DEFINED AS SPEED LESS THAN 0.5)

GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT
ANNUAL REPORT

75-FOOT QUARTERLY WIND ROSE
(1/1/82 - 3/31/82)

FIGURE 2.2-7



△WIND SPEED LESS THAN 3.5 MPH
+WIND SPEED LESS THAN 7.5 MPH
xWIND SPEED LESS THAN 12.5 MPH
◆WIND SPEED GREATER THAN 12.5 MPH

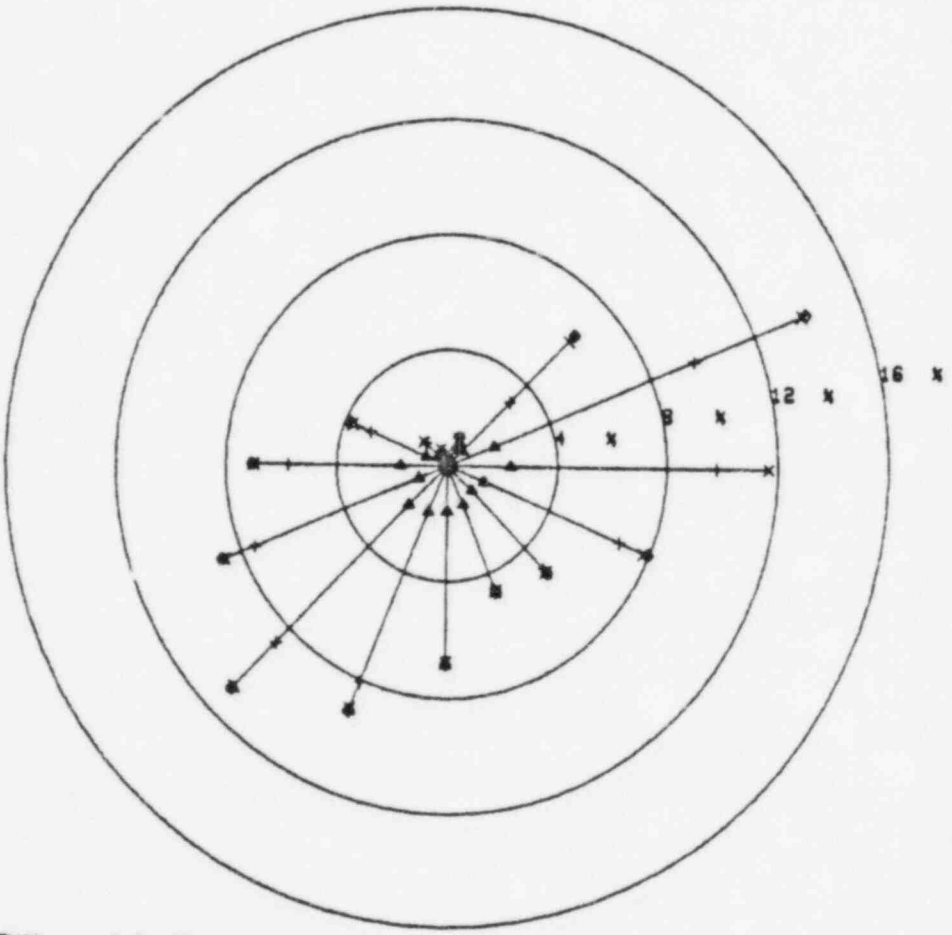
0.6 PERCENT CALMS
(CALMS DEFINED AS SPEED LESS THAN 0.5)

GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT
ANNUAL REPORT

75-FOOT QUARTERLY WIND ROSE
(4/1/82 - 6/30/82)

FIGURE 2.2-8



△WIND SPEED LESS THAN 3.5 MPH
+WIND SPEED LESS THAN 7.5 MPH
×WIND SPEED LESS THAN 12.5 MPH
◇WIND SPEED GREATER THAN 12.5 MPH

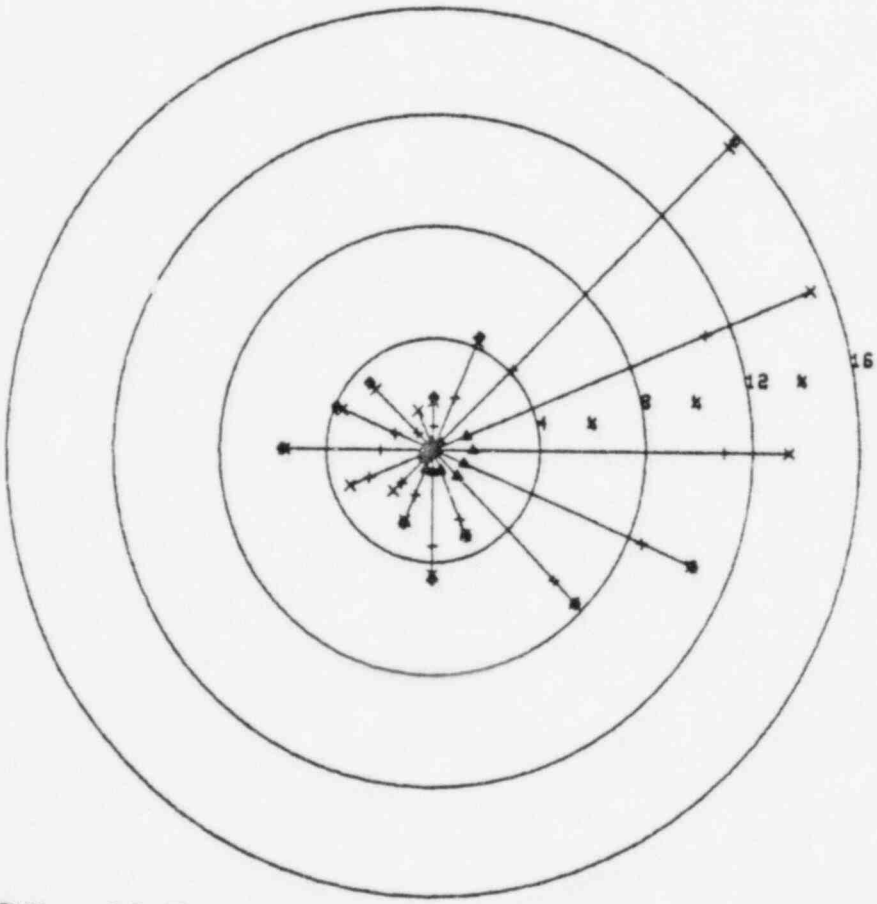
0.3 PERCENT CALMS
(CALMS DEFINED AS SPEED LESS THAN 0.5)

GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT
ANNUAL REPORT

75-FOOT QUARTERLY WIND ROSE
(7/1/82 - 9/30/82)

FIGURE 2.2-9



WIND ROSE
(WINDS FROM)
N

▲WIND SPEED LESS THAN 3.5 MPH
+WIND SPEED LESS THAN 7.5 MPH
xWIND SPEED LESS THAN 12.5 MPH
◆WIND SPEED GREATER THAN 12.5 MPH

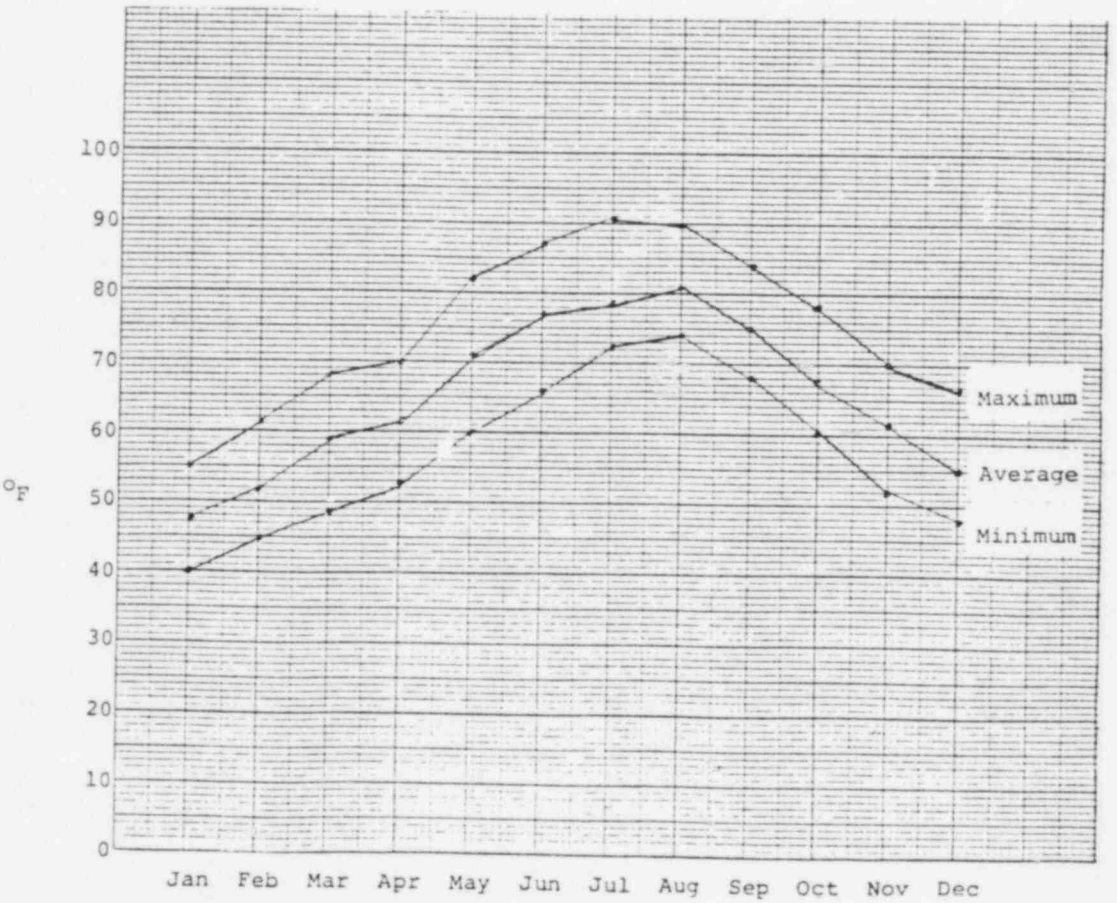
0.4 PERCENT CALMS
(CALMS DEFINED AS SPEED LESS THAN 0.5)

GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT
ANNUAL REPORT

75-FOOT QUARTERLY WIND ROSE
(10/1/82 - 12/31/82)

FIGURE 2.2-10

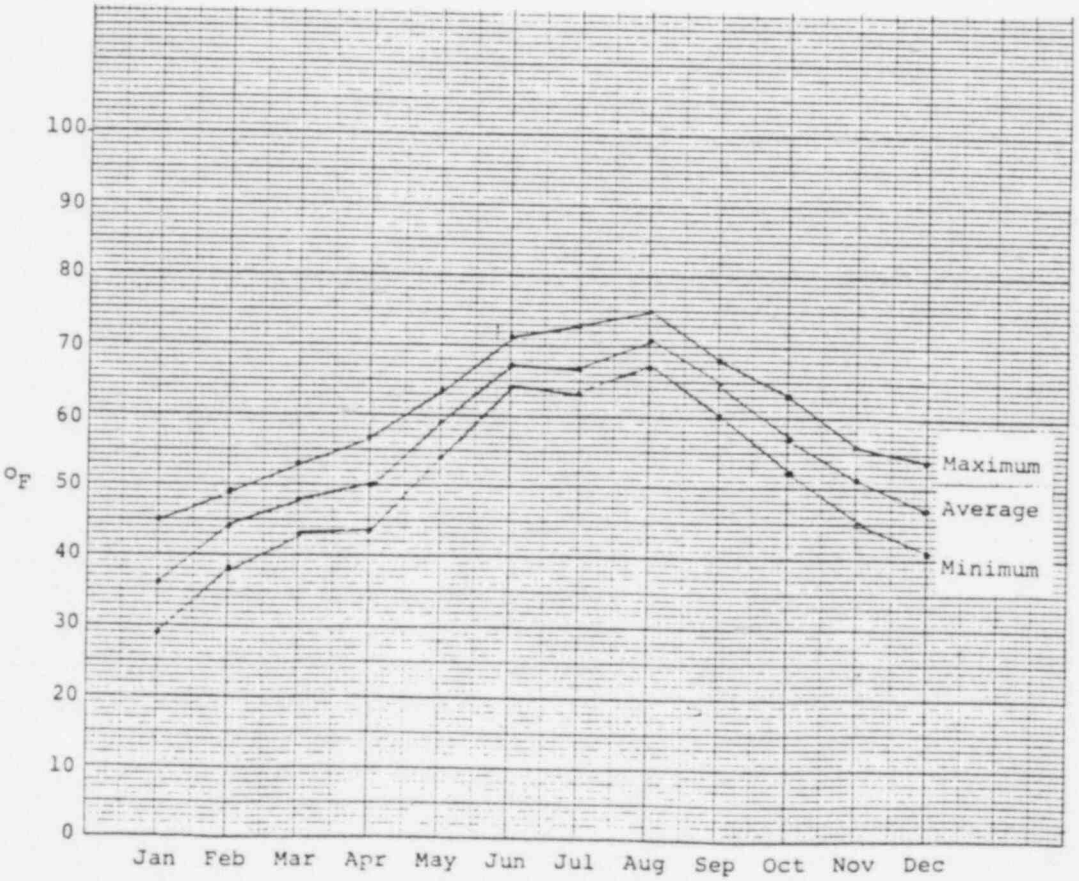


GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT
ANNUAL REPORT

1982 AMBIENT TEMPERATURES

FIGURE 2.2-11



GEORGIA POWER COMPANY

EDWIN I. HATCH NUCLEAR PLANT
ANNUAL REPORT

1982 DEW POINT TEMPERATURES

FIGURE 2.2-12

HNP
ANNUAL REPORT

CHAPTER 3

ADMINISTRATIVE CONTROLS

TABLE OF CONTENTS

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

In accordance with HNP-ETS Section 5.3.2.2, audits of facility activities shall be performed at least once a year under the cognizance of the Safety Review Board (SRB) to ensure conformance of facility operation to all provisions of the ETS. Contrary to the above, audits of consultant analytical programs were not performed in 1980, 1981, and 1982 through December 6, 1982.

In a letter dated December 27, 1982, NRC Region II outlined the findings of the NRC routine safety inspection conducted on November 30 and December 6, 1982. The letter included a Notice of Violation for failure to comply with HNP-ETS 5.3.2.2 and a Notice of Deviation for deviation from commitments to the NRC.

Georgia Power Company submitted a written statement in reply to the NRC Region II in a letter dated January 31, 1983. GPC stated that QA audits for the three vendors conducting analytical analysis for the environmental program had been changed to specifically call out these audits on an annual basis. Full compliance would be achieved with the completion of vendor audits by February 28, 1983. The problem of failure to implement an identified commitment through full completion had been resolved by the development and staffing of the Regulatory Compliance Department at Plant Hatch.

Audits of the three vendors conducting analytical analysis for the environmental program at Plant Hatch were completed January 20, 1983. The Regulatory Compliance Department at Plant Hatch has been functioning since February, 1983.

Pursuant to the Georgia Water Quality Control Act and Federal Water Pollution Control Act, the Georgia Department of Natural Resources issued a National Pollutant Discharge Elimination System (NPDES) permit for Plant Edwin I. Hatch. The effective date of the permit is December 30, 1982, and shall expire December 5, 1987.

Pursuant to HNP-ETS 5.2, Georgia Power Company notified the NRC of a change in Company organization as depicted in HNP-ETS Figure 5.2-1 in a letter dated March 12, 1982.

There were no changes in station design or operation in 1982 which could involve an environmental effect.

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

HNP
ANNUAL REPORT

Appendix A

NPDES Operation Monitoring Reports
Plant Edwin I. Hatch
1982

Georgia Power

Power Supply Engineering and Services

April 15, 1982

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 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 March 31, 1982.

If you have any questions or comments, please advise.

Sincerely,

T E Byerley

T. E. Byerley
Manager of Environmental Affairs

CHH:bjk

Attachments

bc: With Attachments

W. O. Simmons
R. H. Bohler
File: EV925-022

QUARTERLY OPERATION MONITORING REPORT

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

From: 01-01-82
To: 03-31-82

Permit Number: 0004120

Discharge Location: 001b - Cooling Tower Blowdown

Frequency of Analysis: 1/wk.

Location:	Intake	Mixing Zone	Tower
Type of Sample:	In Situ	In Situ	Grab
Parameter:	Temperature °F	Temperature °F	Chlorine mg/l Cl₂
Limits:	ΔT of 5° Max. 90°	ΔT of 5° Max. 90°	Avg. 0.2 Max. 0.5
Date			
01-04-82	[1]		[2]
01-11-82	33	33	
01-20-82	37	37	
01-27-82	36	35	
02-04-82	43	43	
02-10-82	46	46	
02-18-82	47	47	
02-23-82	48	48	
03-03-82	45	45	
03-10-82	48	48	
03-19-82	85	85	
03-24-82	70	70	
Number of Samples:	11	11	
Maximum Value:	85	85	
Minimum Value:	33	35	
Limits Exceeded:	--	0	

Notes: 1) No river survey taken week of 01-04-82.
2) NPDES regulations no longer require reporting of this discharge.

QUARTERLY OPERATION MONITORING REPORT

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

From: 01-01-82
To: 03-31-82

Permit Number: 0004120

Discharge Location: $001A_1$ - Low Volume Waste (neutralization tank

Type of Sample: Grab
Frequency of Analysis: 2/mo

Parameter:	Suspended Solids mg/l	Oil & Grease mg/l
Limits:	Avg. 30	Avg. 15
	Max. 100	Max. 20
Date		
01-08-82	0.6	<5
01-19-82	0.3	<5
02-01-82	0.1	<5
02-15-82	0.4	<5
03-01-82	0.1	<5
03-15-82	3.9	<5
Number of Samples:	6	6
Average Value:	0.9	<5
Maximum Value:	3.9	<5
Minimum Value:	0.1	<5
Limits Exceeded:	0	0

QUARTERLY OPERATION MONITORING REPORT

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

From: 01-01-82
To: 03-31-82

Permit Number: 0004120

Discharge Location: 001A, - Low Volume Waste (pressure filter backwash)

Type of Sample: Grab
Frequency of Analysis: 1/Qtr.

Parameter:		Suspended Solids mg/l	Oil & Grease mg/l
Limits:		Avg. 30 Max. 100	Avg. 15 Max. 20
Location	Date		
Filter A	02-01-82	0.4	<5
Filter B	02-01-82	4.4	<5
Filter C	02-01-82	8.2	<5
Filter D	02-01-82	4.6	<5
Number of Samples:		4	4
Average Value:		4.4	<5
Maximum Value:		8.2	<5
Minimum Value:		0.4	<5
Limits Exceeded:		0	0

QUARTERLY OPERATION MONITORING REPORT

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

From: 01-01-82
To: 03-31-82

Permit Number: 0004120

Discharge Location: 001C - Sewage Treatment Plant

Type of Sample: Grab
Frequency of Analysis: 2/yr.

Parameter:	Suspended Solids mg/l		5-Day BOD mg/l		Free Chlorine mg/l Cl_2
Limits:	Avg.	30	Avg.	30	-
	Max.	45	Max.	45	-
Date					
01-25-82	6.4		3		1.2
Limits Exceeded:	0		0		-

QUARTERLY OPERATION MONITORING REPORT

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

From: 01-01-82
To: 03-31-82

Permit Number: 0004120

Discharge Location: 001D:- Liquid Radwaste System (Unit 1)
Type of Sample: Grab
Frequency of Analysis: 2/mo.

Parameter:	Suspended Solids mg/l		Oil & Grease mg/l		pH pH Units
Limits:	Avg.	30	Avg.	15	
	Max.	100	Max.	20	
Date					
01-04-82		0.75		6.1	6.8
01-18-82		16.8		2.1	5.8
02-01-82		8.5		3.5	6.0
02-15-82		0.5		1.1	6.7
03-02-82		3.3		12.0	7.4
03-15-82		8.1		0.3	7.6
Number of Samples:		6		6	6
Average Value:		6.3		4.2	
Maximum Value:		16.8		12.0	7.6
Minimum Value:		0.5		0.3	5.8
Limits Exceeded:		0		0	--

QUARTERLY OPERATING MONITORING REPORT

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

From: 01-01-82
To: 03-31-82

Permit Number: 0004120

Discharge Location: 001D: - Liquid Radwaste System (Unit II)
Type of Sample: Grab
Frequency of Analysis: 2/mo.

Parameter:	Suspended Solids mg/l		Oil & Grease mg/l		pH pH Units
Limits	Avg.	30	Avg.	15	
	Max.	100	Max.	20	
Date					
01-06-82		1.4		0.02	5.4
01-18-82		4.8		2.3	5.2
02-02-82		4.5		7.0	6.7
02-15-82		0.9		0.2	7.0
03-01-82		1.6		0.6	7.5
03-15-82		1.4		0.4	7.2
Number of Samples:		6		6	6
Average Value:		2.4		1.8	
Maximum Value:		4.8		7.0	7.5
Minimum Value:		0.9		0.2	5.2
Limits Exceeded:		0		0	-

QUARTERLY OPERATION MONITORING REPORT

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

From: 01-01-82
To: 03-31-82

Permit Number: 0004120

Discharge Location: $001E_1$ - Combined Plant Waste (Unit 1)
Frequency of Analysis: 1/wk.

Type of Sample:	In Situ	Grab	Grab
Parameter:	Temperature °F	Average Free Chlorine mg/l Cl_2	pH pH Units
Limits:	-	-	Min. 6.0
	-	-	Max. 9.0
Date			
01-07-82			6.8
01-08-82	54	<0.1	
01-13-82	46	<0.1	6.5
01-20-82	44	<0.1	6.9
01-27-82	48	<0.1	6.0
02-04-82	52	<0.1	6.8
02-10-82	60	<0.1	6.1
02-18-82	58	<0.1	6.8
02-24-82	69	<0.1	6.9
03-02-82	62		
03-05-82		<0.1	7.0
03-10-82	73	<0.1	7.1
03-19-82	80	<0.1	7.3
03-24-82	79	<0.1	7.5
Number of Samples:	12	12	12
Average Value:			
Maximum Value:	80	<0.1	7.5
Minimum Value:	44	<0.1	6.0
Limits Exceeded:	--	--	0

QUARTERLY OPERATION MONITORING REPORT

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

From: 01-01-82
To: 03-31-82

Permit Number: 0004120

Discharge Location: 001E, - Combined Plant Waste (Unit II)
Frequency of Analysis: 1/wk.

Type of Samples:	In Situ	Grab	Grab
Parameter:	Temperature	Average Free Chlorine	pH
	°F	mg/l Cl.	pH Units
Limits:	-	-	Min. 6.0
	-	-	Max. 9.0
Date			
01-07-82			6.4
01-08-82	63	<0.1	
01-13-82	50	<0.1	6.4
01-20-82	46	<0.1	7.0
01-27-82	49	<0.1	6.1
02-04-82	64	<0.1	6.2
02-10-82	54	<0.1	6.3
02-18-82	56	<0.1	6.8
02-24-82	68	<0.1	6.8
03-02-82	52		
03-05-82		<0.1	6.8
03-10-82	58	<0.1	6.7
03-19-82	71	<0.1	6.7
03-24-82	68	<0.1	6.8
Number of Samples	12	12	12
Average Value:			
Maximum Value:	71	<0.1	7.0
Minimum Value:	46	<0.1	6.1
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.

T. E. Byerley
Manager of Environmental Affairs
April 15, 1982

JBS:mja

ATTACHMENT

Georgia Power Company

Plant Hatch

The following six (6) pages contain chlorination data for the cooling tower blowdowns at Plant Hatch.

CIRC WATER CHLORINATION DATA

DATA SHEET 1

UNIT NO: 1

WEEKLY

DATE	FREQUENCY	CL_2 INJECT	CHLORINATORS		BIOTREND		Cl_2			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l* DISCHARGE			
	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HOUR/DAY	
1/7	←	Unit 2A Cell Sustained							→	RLG
1/14	←	Unit 2A Cell Sustained							→	RLG
1/21	←	Unit 2A Cell Sustained							→	RLG
1/28	←	Unit 2A Cell Sustained							→	RLG
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

CIRC WATER CHLORINATION DATA

DATA SHEET 1

UNIT NO: 2

WEEKLY

DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS		BIOTREND		Cl_2			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l* DISCHARGE			
	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HOUR/DAY	
1/7	←	←	Out	Of Service					→	**
1/14	←	←	Out	Of Service					→	**
1/21	3	90	3600	N/A	1/2	N/A	N/A	N/A	N/A	** *
1/28	3	90	3600	N/A	N/A	N/A	N/A	N/A	N/A	** *
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

* Chlorinators turned off by JL - no dilution water going to the chlorinators.

** No overflow during chlorination cycle at cooling towers

CIRC WATER CHLORINATION DATA

DATA SHEET 1

UNIT NO: 1

WEEKLY

DATE	FREQUENCY	CL_2 INJECT	CHLORINATORS		BIOTREND		Cl_2			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l* DISCHARGE			
	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HOUR/DAY	
1-30	2		60							
2-06	3	30	—	2700	<.1	<.1	N/A	N/A	N/A	TC
2-13	3	30	—	2000	<.1	<.1	N/A	N/A	N/A	TC
2-20	3	30	—	2000	<.1	<.1	N/A	N/A	N/A	TC
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

DATA PACKAGE 1
(DATA SHEET 1)

CIRC WATER CHLORINATION DATA

DATA SHEET 1

WEEKLY

UNIT NO: 2

DATE	FREQUENCY	CL_2 INJECT	CHLORINATORS		BIOTREND		Cl_2			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l* DISCHARGE			
	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HOUR/DAY	
9 22	3	30	3100	—	<.1	<.1	NA	NA	NA	JR
10 25	3	30	3000	—	<.1	<.1	NA	NA	NA	JR
10 28	3	30	2900	—	<.1	<.1	NA	NA	NA	JR
10 31	3	30		0025			2	14 EE		JR
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

The circ water blow down valve was closed during Chlorination.
No discharge

CIRC WATER CHLORINATION DATA

DATA SHEET 1

UNIT NO: 1

WEEKLY

DATE	FREQUENCY	CL_2 INJECT	CHLORINATORS		BIOTREND		Cl_2			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l* DISCHARGE			
	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HOUR/DAY	
3/5	3	30	6500	off	—	—	<.1	<.1	1.5	JC
3/10	3	30	6500	OFF	0820	0910	<.1	<.1	1.5	KM/AB
3/15	3	30	6500	OFF	0835	0905	<.1	<.1	1.5	KM
3/25	3	30	off	5100	—	—	<.1	<.1	1.5	SL
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

CIRC WATER CHLORINATION DATA

DATA SHEET 1

UNIT NO: 2

WEEKLY

DATE	FREQUENCY	CL_2 INJECT	CHLORINATORS		BIOTREND		Cl_2			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l* DISCHARGE			
	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HOUR/DAY	
3/3	←	005								
3/10	←	005						•	→	TM
3/16	←	005							→	TM
3/25	←	005							→	SL
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

Georgia Power

Power Supply Engineering and Services

July 15, 1982

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
	Wallace Dam	NPDES Permit No. GA 0035581
	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, 1982.

If you have any questions or comments, please advise.

Sincerely,

T. E. Byerley
Manager of Environmental Affairs

CHH:bjk

Attachments

bc: With Attachments

W. O. Simmons
R. H. Bohler
File: EV925-022

QUARTERLY OPERATION MONITORING REPORT

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

From: 04-01-82
To: 06-30-82

Permit Number: 0004120

Discharge Location: 001A; - Low Volume Waste (neutralization tan

Type of Sample: Grab
Frequency of Analysis: 2/mo

Parameter	Suspended Solids mg/l	Oil & Grease mg/l
Limits:	Avg. 30	Avg. 15
	Max. 100	Max. 20
Date		
04-05-82	0.4	8
04-19-82	5.4	<5
05-04-82	3.6	<5
05-17-82	2.6	7
06-07-82	1.1	<5
06-22-82	0.2	<5
Number of Samples:	6	6
Average Value:	2.2	5.8
Maximum Value:	5.4	8
Minimum Value:	0.2	<5
Limits Exceeded:	0	0

QUARTERLY OPERATION MONITORING REPORT

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

From: 04-01-82
To: 06-30-82

Permit Number: 0004120

Discharge Location: 001A; - Low Volume Waste (pressure filter backwash)

Type of Sample: Grab
Frequency of Analysis: 1/Qtr.

Parameter		Suspended Solids mg/l	Oil & Grease mg/l
Limits		Avg. 30	Avg. 15
		Max. 100	Max. 20
Location	Date		
Filter A	05-17-82	1.8	<5
Filter B	05-17-82	1.8	5
Filter C	05-17-82	2.1	<5
Filter D	05-17-82	2.4	<5
Number of Samples:		4	4
Average Value:		2.0	5
Maximum Value:		2.4	5
Minimum Value:		1.8	<5
Limits Exceeded:		0	0

QUARTERLY OPERATION MONITORING REPORT

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

From: 04-01-82
To: 06-30-82

Permit Number: 0004120

Discharge Location: 001B - Cooling Tower Blowdown

Frequency of Analysis: 1/wk.

Location:	Intake	Mixing Zone	Tower
Type of Sample:	In Situ	In Situ	Grab
Parameter:	Temperature °F	Temperature °F	Chlorine mg/l Cl:
Limits:	ΔT of 5° Max. 90°	ΔT of 5° Max. 90°	Avg. 0.2 Max. 0.5
Date			
04-07-82	63	63	
04-13-82	68	68	
04-21-82	57	57	
04-29-82	56	56	
05-05-82	57	57	
05-12-82	63	63	
05-21-82	64	64	
05-28-82	67	67	
06-04-82	67	67	
06-09-82	68	68	
06-16-82	69	69	
06-23-82	68	68	
06-30-82	67	67	
Number of Samples:	13	13	
Maximum Value:	69	69	
Minimum Value:	56	56	
Limits Exceeded:	--	0	

Note: (1) See attachments for chlorination data.

 QUARTERLY OPERATION MONITORING REPORT

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

From: 04-01-82
To: 06-30-82

Permit Number: 0004120

Discharge Location: 001D - Liquid Radwaste System (Unit 1)
Type of Sample: Grab
Frequency of Analysis: 2/mo.

Parameter:	Suspended Solids mg/l		Oil & Grease mg/l		pH pH Units
Limits:	Avg.	30	Avg.	15	
	Max.	100	Max.	20	
Date					
04-05-82	26.0		12.2		6.8
04-19-82	5.5		3.3		7.9
05-03-82	2.5		2.2		6.6
05-17-82	2.8		5.0		7.4
06-07-82	30.5		9.8		6.4
06-21-82	7.6		6.9		7.1
Number of Samples:	6		6		6
Average Value:	12.5		6.6		-
Maximum Value:	30.5		12.2		7.9
Minimum Value:	2.5		2.2		6.4
Limits Exceeded:	0		0		0

QUARTERLY OPERATING MONITORING REPORT

Georgia Power Company
Plant Hatch
P O box 4545
Atlanta, Georgia 30302

From: 04-01-82
To: 06-30-82

Permit Number: 0004120

Discharge Location: 001D; - Liquid Radwaste System (Unit II)
Type of Sample: Grab
Frequency of Analysis: 2/mo.

Parameter.	Suspended Solids mg/l		Oil & Grease mg/l		pH pH Units
Limits:	Avg.	30	Avg.	15	
	Max.	100	Max.	20	
Date					
04-05-82	25.2		0.01		7.5
04-19-82	7.5		4.6		7.0
05-03-82	5.2		3.4		7.6
05-17-82	2.8		6.7		6.6
06-07-82	7.7		2.9		7.1
06-21-82	21.2		4.0		7.7
Number of Samples:	6		6		6
Average Value:	11.6		3.6		-
Maximum Value:	25.2		6.7		7.7
Minimum Value	5.2		0.01		6.6
Limits Exceeded:	0		0		0

MONTHLY OPERATION MONITORING REPORT

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

From: 04-01-82
To: 05-30-82
Permit Number: GA0-120

Location: 001E - Combined Plant Waste

Type of Sample:	In Situ	Grab	Grab	Grab	Grab
Generating Unit:		One	Two	One	Two
Parameter:	Temperature °F	Average mg/l Cl_2	Free Chlorine mg/l Cl_2	pH pH Units	pH pH Units
Limits:	-	-	-	Min. 6.0	Min. 6.0
	-	-	-	Max. 9.0	Max. 9.0
Date					
04-07-82	71	< 0.1	<0.1	7.4	6.6
04-14-82	70	< 0.1	<0.1	6.6	6.6
04-21-82	80	< 0.1	<0.1	7.5	7.9
04-28-82	64	< 0.1	<0.1	7.6	6.9
05-05-82	70	< 0.1	<0.1	6.7	6.7
05-12-82	71	< 0.1	<0.1	6.1	6.4
05-19-82	77	< 0.1	<0.1	7.0	6.9
05-26-82	80	< 0.1	<0.1	6.9	7.3
06-04-82	79	< 0.1	<0.1	7.2	7.1
06-09-82	77	< 0.1	<0.1	6.8	6.5
06-16-82	82	< 0.1	<0.1	7.2	6.8
06-23-82	84	< 0.1	<0.1	7.2	7.0
06-29-82	88	< 0.1	<0.1	7.8	7.0
Number of Samples:	13	13	13	13	13
Average Value:	-	< 0.1	<0.1	-	-
Maximum Value:	88	< 0.1	<0.1	7.8	7.9
Minum Value:	64	< 0.1	<0.1	6.1	6.4
Limits Exceeded:	-	-	-	0	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.

T. E. Byerley
Manager of Environmental Affairs
July 15, 1982

ATTACHMENT

Georgia Power Company

Plant Hatch

The following eight pages contain the chlorination data for the cooling tower blowdown at Plant Hatch.

CIRC WATER CHLORINATION DATA

DATA SHEET 1

WEEKLY

UNIT NO: 1

DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS		BIOTREND		Cl_2			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l* DISCHARGE			
	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HOUR/DAY	
4/8/82	3	30	*	N/A	NP	NP	<.1	<.1	0	SH
4/15/82	3	30	*	N/A			<.1	<.1	0	SH
4/21/82	3	30	*	N/A			<.1	<.1	0	SH
4/28/82	—	Unit down	—	—	—	—	—	—	—	SH
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

* Chlorinator is being repaired on a continuous basis. Some Chlorination was performed but only temporary - not enough for a bio-kill or any residual Cl_2 to be measured.

ENP-7606 RO5

CIRC WATER CHLORINATION DATA

DATA SHEET 1

UNIT NO: 2

WEEKLY

DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS		BIOTREND		Cl_2			INITIALS
							FREE mg/l* DISCHARGE			
	CYCLE/DAY	MIN/CYCLE	NO. 1 #/24 HR	NO. 2 #/24 HR	BEFORE TIME	AFTER TIME	AVG.	MAX	HOUR/DAY	
5-6-82			005X							JH
5-11-82			005							DC/JH
5-18-82			005							JH
5-25-82			005							JH
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

X unit in cold shutdown, circ. water chlorination off

CIRC WATER CHLORINATION DATA

DATA SHEET 1

UNIT NO: 2

WEEKLY

DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS		BIOTREND		Cl_2			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l* DISCHARGE			
	CYCLE/DAY	MIN/CYCLE	1/24 HR	1/24 HR	TIME	TIME	AVG.	MAX	HOUR/DAY	
4/7/82	←	005								[illegible]
4/14/82	←	005								[illegible]
4/21/82	←	005								[illegible]
4/28/82	—	005								[illegible]
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

CIRC WATER CHLORINATION DATA

DATA SHEET 1

UNIT NO: 2

WEEKLY

DATE	FREQUENCY /DAY	Cl_2 INJECT MIN/CYCLE	CHLORINATORS NO. 1 #/24 HR	CHLORINATORS NO. 2 #/24 HR	BIOTREND BEFORE TIME	BIOTREND AFTER TIME	Cl_2 FREE mg/l* DISCHARGE AVG.	Cl_2 FREE mg/l* DISCHARGE MAX	Cl_2 FREE mg/l* DISCHARGE HOUR/DAY	INITIALS
5-6-82				005*						JH
5-12-82				005				•		JH/JH/JH
5-19-82				005						SL
5-26-82	1			005						JH
					LIMIT		0.20	0.50	2 HR/DAY	

• MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

* Unit in cold shutdown, circ. water chlorination off

CIRC WATER CHLORINATION DATA

DATA SHEET 1

WEEKLY

UNIT NO: *ONE*

			CHLORINATORS		BIOTREND		Cl_2			
DATE	FREQUENCY	CL_2 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	
6/7/82	←		005						→	JS/RK/RK **
6-?8			002						→	RA/KC
6-18			005						→	GK
6-22			005						→	SL
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

** Cl_2 SYSTEM S/O, Cl_2 HEADER ISOLATED

DATA AND RESULTS REVIEWED

Approved ✓

Rod Stancill — 6/29/82

CIRC WATER CHLORINATION DATA

DATA SHEET 1

UNIT NO: Two

WEEKLY

DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS		BIOTREND		Cl_2			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l* DISCHARGE			
	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HOUR/DAY	
4/22	1		.005							
4-23	1		.005							
4-24	1		.005							
4-25	1		.005							
4-26	1		.005							
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

** Cl_2 System D/O; Cl_2 HEADER ISOLATED

Rod Stovall 4/27

Page 2 of 2

EN2-7606 R05

Georgia Power

Power Supply Engineering and Services

October 29, 1982

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 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, 1982.

If you have any questions or comments, please advise.

Sincerely,

T. E. Byerley
Manager of Environmental Affairs

RDM:bjk

Attachments

bc: W. O. Simmons
R. H. Bohler
File: EV925-022

QUARTERLY OPERATION MONITORING REPORT

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

From: 07-01-82
To: 09-30-82

Permit Number: 0004120

Discharge Location: $001A_1$ - Low Volume Waste (neutralization tan

Type of Sample: Grab
Frequency of Analysis: 2/mo

Parameter:	Suspended Solids mg/l	Oil & Grease mg/l
Limits:	Avg. 30	Avg. 15
	Max. 100	Max. 20
Date		
07-06-82	145	<5
07-19-82	9	<5
08-04-82	1	<5
08-16-82	3	<5
09-06-82	10	<5
09-20-82	1	<5
Number of Samples:	6	6
Average Value:	28	5
Max. Value:	145	5
Min. Value:	1	<5
Limits Exceeded:	1	0

QUARTERLY OPERATION MONITORING REPORT

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

From: 07-01-82
To: 09-30-82

Permit Number: 0004120

Discharge Location: $001A_2$ - Low Volume Waste (pressure filter backwash)

Type of Sample: Grab
Frequency of Analysis: 1/Qtr.

Parameter:		Suspended Solids mg/l	Oil & Grease mg/l
Limits:		Avg. 30 Max. 100	Avg. 15 Max. 20
Location	Date		
Filter A	08-11-82	1	<5
Filter B	08-11-82	1	<5
Filter C	08-11-82	1	<5
Filter D	08-11-82	2	<5
Number of Samples:		4	4
Average Value:		1	<5
Max. Value:		2	<5
Min. Value:		1	<5
Limits Exceeded:		0	0

QUARTERLY OPERATION MONITORING REPORT

From: 07-01-82
To: 09-30-82

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

Permit Number: 0004120

Discharge Location: 001b - Cooling Tower Blowdown

Frequency of Analysis: 1/wk.

Location:	Intake	Mixing Zone	Tower
Type of Sample:	In Situ	In Situ	Grab
Parameter:	Temperature °F	Temperature °F	Chlorine mg/l Cl_2
Limits:	ΔT of 5° Max. 90°	ΔT of 5° Max. 90°	Avg. 0.2 Max. 0.5
Date			
07-08-82	70	70	1
07-14-82	68	68	
07-21-82	68	68	
07-28-82	69	69	
08-04-82	89	89	
08-11-82	93	93	
08-18-82	66	66	
08-25-82	67	67	
09-02-82	87	87	
09-08-82	51	51	
09-17-82	82	82	
09-22-82	86	86	
Number of Samples:	12	12	
Max. Value:	89	89	
Min. Value:	51	51	
Limits Exceeded:	--	1	

Note: 1) Reporting of this discharge point no longer require. See Attachments for chlorination data.

QUARTERLY OPERATION MONITORING REPORT

From: 07-01-82
To: 09-30-82

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

Permit Number: 0004120

Discharge Location: 001C - Sewage Treatment Plant

Type of Sample: Grab
Frequency of Analysis: 2/yr.

Parameter:	Suspended Solids mg/l	5-Day BOD mg/l	Free Chlorine mg/l Cl_2
Limits:	Avg. 30 Max. 45	Avg. 30 Max. 45	- -
Date			
07-09-82	48	3	0.5
Limits Exceeded:	0	0	0

QUARTERLY OPERATING MONITORING REPORT

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

From: 07-01-82
To: 09-30-82

Permit Number: 0004120

Discharge Location: 001D$_2$ - Liquid Radwaste System (Unit II)
Type of Sample: Grab
Frequency of Analysis: 2/mo.

Parameter:	Suspended Solids mg/l		Oil & Grease mg/l		pH pH Units
Limits:	Avg.	30	Avg.	15	
	Max.	100	Max.	20	
Date					
07-05-82	12		7		6.9
07-19-82	1		1		7.7
08-02-82	1		16		7.8
08-16-82	8		2		6.9
09-06-82	5		19		6.6
09-20-82	5		3		4.8
Number of Samples:	6		6		6
Average Value:	5		9		--
Max. Value:	12		19		7.8
Min. Value:	1		3		4.8
Limits Exceeded:	0		0		0

QUARTERLY OPERATION MONITORING REPORT

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

From: 07-01-82
To: 09-30-82

Permit Number: 0004120

Discharge Location: 001D - Liquid Radwaste System (Unit 1)
Type of Sample: Grab
Frequency of Analysis: 2/mo.

Parameter:	Suspended Solids mg/l		Oil & Grease mg/l		pH pH Units
Limits:	Avg.	30	Avg.	15	
	Max.	100	Max.	20	
Date					
07-05-82	24		3		7.0
07-19-82	1		55		7.7
08-02-82	7		6		7.4
08-16-82	7		10		7.7
09-06-82	4		8		6.4
09-20-82	7		5		5.2
Number of Samples:	6		6		6
Average Value:	8		15		--
Max. Value:	24		55		7.7
Min. Value:	1		3		5.2
Limits Exceeded:	0		1		1

QUARTERLY OPERATION MONITORING REPORT

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

From: 07-01-82
To: 09-30-82

Permit Number: 0004120

Discharge Location: $001E_1$ - Combined Plant Waste (Unit 1)
Frequency of Analysis: 1/wk.

Type of Sample:	In Situ	Grab	Grab
Parameter:	Temperature °F	Average Free Chlorine mg/l Cl:	pH pH Units
Limits:	-	-	Min. 6.0
	-	-	Max. 9.0
Date			
07-08-82	79	<0.1	7.0
07-14-82	82		7.3
07-16-82		<0.1	
07-21-82	90		7.4
07-22-82		<0.1	
07-28-82	90	<0.1	7.1
08-04-82	90	<0.1	7.8
08-11-82	92	<0.1	7.9
08-18-82	92	<0.1	8.0
08-25-82	95		8.0
08-27-82		<0.1	
09-01-82	88	<0.1	7.9
09-08-82	88	<0.1	8.5
09-15-82	88	<0.1	7.9
09-22-82	90	1	7.6
09-29-82	84	<0.1	7.4
Number of Samples:	13	12	13
Average Value:	--	--	--
Max. Value:	92	<0.1	8.8
Min. Value:	79	<0.1	7.0
Limits Exceeded:	--	---	0

Note 1: No chlorination, chlorinator out of service.

QUARTERLY OPERATION MONITORING REPORT

From: 07-01-82
To: 09-30-82

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

Permit Number: 0004120

Discharge Location: 001E, - Combined Plant Waste (Unit II)
Frequency of Analysis: 1/wk.

Type of Samples:	In Situ	Grab	Grab
Parameter:	Temperature °F	Average Free Chlorine mg/l Cl,	pH pH Units
Limits:	- -	- -	Min. 6.0 Max. 9.0
Date			
07-08-82	81	<0.1	7.0
07-14-82	90		7.9
07-16-82		<0.1	
07-21-82	86		6.5
07-22-82		<0.1	
07-28-82	90	<0.1	7.6
08-04-82	86	<0.1	7.4
08-11-82	84	<0.1	7.7
08-18-82	90	<0.1	8.1
08-25-82	86		8.0
08-27-82		<0.1	
09-01-82	86	<0.1	7.6
09-09-82	82	<0.1	8.0
09-15-82	84	<0.1	7.2
09-22-82	82	1	7.4
09-29-82	78	<0.1	7.4
Number of Samples:	13	12	13
Average Value:	--	--	--
Max. Value:	90	<0.1	8.1
Min. Value:	78	<0.1	6.5
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.

T. E. Byerley
Manager of Environmental Affairs

CIRC WATER CHLORINATION DATA

DATA SHEET 1

UNIT NO: Two

WEEKLY

DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS		BIOTREND		Cl_2			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l* DISCHARGE			
'82	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HOUR/DAY	
7-7			005							SH
7-14	3	30	4000	4000	*	*	.11	.30	1 hr/da	SH
7-22	3	30	3000	3000	*	*	<.1	<.1	0 hr/da	SH SH
7-29	3	30	4000	4000	*	—	<.1	<.1	0 hr/day	SH
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

* no sample taken – this is the first chlorination in a while! Samples will be taken when system has leveled off (Chlorine demand)

CIRC WATER CHLORINATION DATA

DATA SHEET 1

UNIT NO: two

WEEKLY

DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS		BIOTREND		Cl_2			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l* DISCHARGE			
82	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HOUR/DAY	
7-7	6	6	0	0	—	—	-	*0a	——	SH
7-23	3	40	3000	3000	—	—	<.1	<.1	0 hr/day	SH SH
7-14	3	40	3000	3000	—	—	<.1	<.1	0 hr/day	SH SH
7-29	3	40	4000	4000	—	—	<.1	<.1	0 hr/day	SH
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

+ Elbow missing from chlorination distribution pipe presenting a (potential) health hazard

* No sample taken

Rod Darnell 10-1-82

CIRC WATER CHLORINATION DATA

DATA SHEET 1

UNIT NO: I

WEEKLY

DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS		BIOTREND		Cl_2			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l* DISCHARGE			
	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HOUR/DAY	
9-1	3	30	2000	*	NA	NA	<.1	<.1	0	JM
9-9	3	30	1500	*	*	NA	<.1	<.1	0	JM
9-16	3	30	200	*	NA	NA	<.1	<.1	0	JM
* 9-23	←			000					→	KM/TEB DM
* 10-1	←			000					→	
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

9-1-82
* Circ H_2O Chlorinators I and II cannot be adjusted to necessary feedrate for chlorine demand. MR has been written.

9-9-82
* Circ. H_2O Chlorinators I and II can not be adjusted. 1500 is the maximum. Biotrends were taken.

9-16-82
Circ H_2O chlorinators I and II can not be adjusted.

* Maintenance is being done on Circ H_2O system

Rod Arnell 10-1-82

SERVICE WATER CHLORINATION DATA

DATA SHEET 2

UNIT NO. 1

WEEKLY

DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS			BIOTREND				Cl_2		
			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	HOUR/DAY
9-1	Cont.	Cont.	—	20%/24h	—	*	—	<.1	<.1	<.1	<.1	5 Sec
9-9	Cont.	Cont.	←	OOS	→	*	—	<.1	<.1	<.1	<.1	5 Sec
9-16	Cont.	Cont.	←	OOS	→	*	—	<.1	<.1	<.1	<.1	0 Sec
9-23	←	←	←	←	OOS	←	←	←	←	←	←	→
* 10-1	←	←	←	←	OOS	←	←	←	←	←	←	→
						LIMIT				0.20	0.50	2 HR/DAY

DATA PACKAGE 2
(DATA SHEET 2)

Page 2 of 2

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* MEASURED AT POINT OF DISCHARGE TO RIVER DURING CHLORINATION CYCLE

** MEASURED AT SERVICE WATER DISCHARGE TO CIRC WATER FLUME

8-30-82
* Biotrend Sample was taken

9-4-82
PSW was turned off due to a chlorine leak with the regulator valve
Biotrend Sample was taken

9-16-82
...turned off due to repairs. Biotrends were mailed off.

* maintenance is being done on PSW system

Rod Stanell 10/82

SERVICE WATER CHLORINATION DATA

DATA SHEET 2

UNIT NO. II

WEEKLY

DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS			BIOTREND				Cl_2		
			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
9-1	Cont.	Cont.	—	200/24hr	—	*	—	<.1	<.1	<.1	<.1	0
9-9	Cont.	Cont.	←	005	→	NA	NA	<.1	<.1	<.1	<.1	0
9-16	Cont.	Cont.	←	005	→	NA	NA	<.1	<.1	<.1	<.1	0
9-23	←				002	NA	NA	NA	NA	NA	NA	0
* 10-1	←	002			0 →	NA	NA	NA	NA	NA	NA	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

* Maintenance is being done of PSW system

DATA PACKAGE 2
(DATA SHEET 2)

Rod Harrell 10-1-82

CIRC WATER CHLORINATION DATA

DATA SHEET 1

UNIT NO: II

WEEKLY

DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS		BIOTREND		Cl_2			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l* DISCHARGE			
	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HOUR/DAY	
9-1	3	40	2000	*	NA	NA	<.1	.1	0	[illegible]
9 9	3	40	1500	*	*	NA	<.1	<.1	0	[illegible]
9-14	3	40	200	*	NA	NA	<.1	<.1	0	[illegible]
* 9-23	<			002					→	bm/JB
* 10-1	<			000					→	bm
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

9-1-82
Circ H_2O chlorinators I and II cannot be adjusted to necessary feedrate. MR has been written

9-9-82
Chlorinators I and II cannot be adjusted 150cc/s is the maxium - biotrends were taken

9-16-82 [illegible] cannot be adjust

* Maintenance is being done on Circ H_2O system

Page 2 of 2

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CIRC WATER CHLORINATION DATA

DATA PACKAGE 1
(DATA SHEET 1)

Rod Edwell 10-1-82

CIRC WATER CHLORINATION DATA

DATA SHEET 1

UNIT NO: I

WEEKLY

DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS		BIOTREND		Cl_2			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l*	DISCHARGE		
	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HOUR/DAY	
9-1	3	30	2000	*	NA	NA	<.1	<.1	0	[illegible]
9-9	3	30	1500	*	*	NA	<.1	<.1	0	[illegible]
9-16	3	30	200	*	NA	NA	<.1	<.1	0	[illegible]
* 9-23	<		0	000						[illegible]
* 10-1	<			000						[illegible]
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

9-1-82
* Circ H_2O Chlorinators I and II cannot be adjusted to necessary feedrate for chlorine demand. NR has been written.

9-9-82
* Circ. H_2O Chlorinators I and II cannot be adjusted. 1500 is the maximum. Biotrends were taken.

9-16-82
* Circ H_2O chlorinators I and II cannot be adjusted.

* Maintenance is being done on Circ H_2O system

CIRC WATER CHLORINATION DATA
DATA PACKAGE 1
(DATA SHEET 1)

Rod Stanell 10-1-82

SERVICE WATER CHLORINATION DATA

DATA SHEET 2

UNIT NO. 1

WEEKLY

DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS			BIOTREND				Cl_2		
			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
9-1	Cont.	Cont.	—	20%/24h.	—	*	<	<.1	<.1	<.1	<.1	6 Sc
9-9	Cont.	Cont.	←	005	→	*	—	<.1	<.1	<.1	<.1	6 Sc
9-11	cont	cont.	←	005	→	✓	—	<.1	<.1	<.1	<.1	0 Sc
9-23	←	←	←	←	002	—	—	—	—	—	—	→
* 10-1	←	←	←	←	002	—	—	—	—	—	—	→
						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

8-30-82
* Biotrend sample was taken.
9-4-82
PSW was turned off due to a Chlorine leak with the regulator valve
Biotrend sample was taken
9-16-82 [illegible] n/p due to repairs. Biotrends were mailed off.

* maintenance is being done on PSW system

DATA PACKAGE 2 (DATA SHEET 2)

Page 2 of 2

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Rod Hamell 10-1-82

SERVICE WATER CHLORINATION DATA

DATA SHEET 2

UNIT NO. II

WEEKLY

DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS			BIOTREND				Cl_2		
			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
9-1	Cont.	Cont.	—	200/24	—	*	—	<.1	<.1	<.1	<.1	0
9-9	Cont.	Cont.	←	005	→	N/A	N/A	<.1	<.1	<.1	<.1	0
9-16	Cont.	Cont.	←	005	→	NA	NA	<.1	<.1	<.1	<.1	0
9-23	←		←		002	NA	NA	NA	NA	NA	NA	0
* 10-1	←	002	←		0 →	NA	NA	NA	NA	NA	NA	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

* Maintenance is being done of PSW system

DATA PACKAGE 2
(DATA SHEET 2)

Rod Harrell 10-1-82

CIRC WATER CHLORINATION DATA

DATA SHEET 1

UNIT NO: II

WEEKLY

			CHLORINATORS		BIOTREND		Cl_2			
DATE	FREQUENCY	CL_2 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	
9-1	3	40	2000	*	NA	NA	<.1	2.1	0	[illegible]
9-9	3	40	1500	*	*	NA	<.1	<.1	0	[illegible]
9-16	3	40	200	*	NA	NA	<.1	<.1	0	[illegible]
*9-23	←			OOS					→	Bm/JBB
*10-1	←			OOO					→	Bm
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

* Maintenance is being done on Circ H_2O system

9-1-82
Circ H_2O chlorinators I and II cannot be adjusted to necessary feedrate. MR has been written

9-9-82
Chlorinators I and II cannot be adjusted 1500 #/day is the maximum - Biotrends were taken

9-16-82 [illegible] cannot be adjusted

CIRC WATER CHLORINATION DATA

DATA PACKAGE 1
(DATA SHEET 1)

CIRC WATER CHLORINATION DATA

DATA SHEET 1

UNIT NO: 1

WEEKLY

DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS		BIOTREND		Cl_2 FREE mg/l* DISCHARGE			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER				
82	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HOUR/DAY	
5	3	30	←	600	←	←	←	←	→	JO
12	←	←	←	000	←	←	←	←	→	JH
19	3	30	3000	3000	*	1000	<.1	<.1	ch/day	JA
26	3	30	1000	2000	*	*	<.1	<.1	ch/day	JH
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

5-5-82 & 5-12-82 Due to problem with vacuum pump Cir. I and II is out of service.

5-19

* No sample taken

Rod Harrell 5/31/82

CIRC WATER CHLORINATION DATA

DATA SHEET 1

UNIT NO: 2

WEEKLY

DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS		BIOTREND		Cl_2			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l* DISCHARGE			
82	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HOUR/DAY	
-5	〃	〃	〃	005.	〃	〃	〃	〃	〃	〃
-12	〃	〃	〃	005	〃	〃	〃	〃	〃	〃
19	3	40	300	300	1000	*	<.1	<.1	chl/day	〃
8/26/82	〃	〃	〃	005	〃	〃	〃	〃	〃	〃
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

* 8-5-82 Due to problem with vacuum pump ckt. I and II is out of service.
* 8-26-82 Unit II is shut down.
* no samples taken after.

Rod Stanell 8/31/82
Signature

Rod Edwards 10/82

CIRC WATER CHLORINATION DATA

DATA SHEET 1

WEEKLY

UNIT NO: I

	DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS NO. 1	CHLORINATORS NO. 2	BIOTREND BEFORE	BIOTREND AFTER	Cl_2 FREE mg/l* DISCHARGE AVG.	Cl_2 FREE mg/l* DISCHARGE MAX	Cl_2 FREE mg/l* DISCHARGE HOUR/DAY	INITIALS
	—	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME				
	9-1	3	30	2000	*	NA	NA	<.1	<.1	0	JL SC
	9-9	3	30	1500	*	*	NA	<.1	<.1	0	JL SC
	9-16	3	30	200	*	NA	NA	<.1	<.1	0	JL SC
*	9-23	<	—	—	000	—	—	—	—	→	DM/JEK
*	10-1	<	—	—	000	—	—	—	—	→	DM
				LIMIT				0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

9-1-82
* Circ H_2O Chlorinators I and II can not be adjusted to necessary feedrate for chlorine demand. MR has been written.

9-9-82
* Circ. H_2O Chlorinators I and II can not be adjusted. 1500 is the maxium. Biotrends were taken.

9-16 82
Circ H_2O chlorinators I and II can not be adjusted.

* Maintenance is being done on Circ H_2O System

CIRC WATER CHLORINATION DATA
DATA PACKAGE 1
(DATA SHEET 1)

Georgia Power

Power Supply Engineering and Services

January 31, 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 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, 1982.

If you have any questions or comments, please advise.

Sincerely,

T. E. Byerley
Manager of Environmental Affairs

RDM:bjk

Attachments

bc: W. O. Simmons
R. H. Bohler
File: EV925-022

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

From: 10-01-82
To: 12-31-82

Permit Number: 0004120

Discharge Location: 001A$_1$ - Low Volume Waste (neutralization t

Type of Sample: Grab
Frequency of Analysis: 2/mo

Parameter:	Suspended Solids mg/l	Oil & Grease mg/l
Limits:	Avg. 30	Avg. 15
	Max. 100	Max. 20
Date		
10-06-82	13	<5
10-18-82	<1	<5
11-01-82	162	8
11-16-82	4	<5
12-07-82	1	<5
12-20-82	<1	<5
Number of Samples:	6	6
Average Value:	30	5
Maximum Value:	162	8
Minimum Value:	<1	<5
Limits Exceeded:	1	0

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

From: 10-01-82
To: 12-31-82

Permit Number: 0004120

Discharge Location: 001A$_2$ - Low Volume Waste (pressure filter backwash)

Type of Sample: Grab
Frequency of Analysis: 1/Qtr.

Parameter:		Suspended Solids mg/l	Oil & Grease mg/l
Limits:		Avg. 30 Max. 100	Avg. 15 Max. 20
Location	Date		
Filter A	11-01-82	4	7
Filter B	11-01-82	1	10
Filter C	11-01-82	3	7
Filter D	11-01-82	2	9
Number of Samples:		4	4
Average Value:		3	8
Maximum Value:		4	10
Minimum Value:		1	7
Limits Exceeded:		0	0

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

From: 10-01-82
To: 12-31-82

Permit Number: 0004120

Discharge Location: 001B - Cooling Tower Blowdown

Frequency of Analysis: 1/wk.

Location:	Intake	Mixing Zone	Tower
Type of Sample:	In Situ	In Situ	Grab
Parameter:	Temperature °F	Temperature °F	Chlorine mg/l Cl:
Limits:	ΔT of 5° Max. 90°	ΔT of 5° Max. 90°	Avg. 0.2 Max. 0.5
Date			
10-01-82	73	74	1
10-08-82	79	75	
10-13-82	77	77	
10-20-82	69	69	
10-27-82	63	63	
11-03-82	70	70	
11-10-82	60	62	
11-17-82	59	59	
11-24-82	64	64	
12-01-82	66	65	
12-08-82	62	62	
12-15-82	55	55	
12-21-82	51	55	
12-29-82	57	57	
Number of Samples:	14	14	
Maximum Value:	79	75	
Minimum Value:	51	55	
Limits Exceeded:	--	0	

Note: 1) Reporting of this discharge point is no longer required. See Attachments for chlorination data.

QUARTERLY OPERATION MONITORING REPORT

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

From: 10-01-82
To: 12-31-82

Permit Number: 000412(

Discharge Location: 001D - Liquid Radwaste System (Unit 1)
Type of Sample: Grab
Frequency of Analysis: 2/mo.

Parameter:	Suspended Solids mg/l		Oil & Grease mg/l		pH pH Units
Limits:	Avg.	30	Avg.	15	
	Max.	100	Max.	20	
Date					
10-04-82					
10-18-82	<1		3		
11-01-82	<1		11		
11-15-82	3		9		
12-06-82	2		2		
12-20-82	3		2		
	4		1		
Number of Samples:	6		6		
Average Value:	3		5		
Maximum Value:	4		11		
Minimum Value:	<1		1		
Limits Exceeded:	0		0		

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

From: 10-01-82
To: 12-31-82

Permit Number: 0004120

Discharge Location: 001D; - Liquid Radwaste System (Unit II)
Type of Sample: Grab
Frequency of Analysis: 2/mo.

Parameter:	Suspended Solids mg/l		Oil & Grease mg/l		pH pH Units
Limits:	Avg.	30	Avg.	15	
	Max.	100	Max.	20	
Date					
10-04-82	<1		<1		
10-18-82	4		2		
11-01-82	11		3		
11-15-82	3		2		
12-06-82	5		1		
12-20-82	3		1		
Number of Samples:	6		6		
Average Value:	4		2		
Maximum Value:	11		3		
Minimum Value:	<1		<1		
Limits Exceeded:	0		0		

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

From: 10-01-82
To: 12-31-82

Permit Number: 0004120

Discharge Location: $001E_1$ - Combined Plant Waste (Unit 1)
Frequency of Analysis: 1/wk.

Type of Sample:	In Situ	Grab	Grab
Parameter:	Temperature °F	Average Free Chlorine mg/l Cl_2	pH pH Units
Limits:	-	-	Min. 6.0
	-	-	Max. 9.0
Date			
10-06-82	76	<0.1	7.6
10-13-82	80	<0.1	7.0
10-20-82	71	<0.1	7.1
10-26-82	66	<0.1	7.2
11-03-82	71	<0.1	7.0
11-10-82	62	<0.1	7.1
11-17-82	61	<0.1	7.2
11-24-82	65	<0.1	7.0
12-01-82	68	<0.1	7.1
12-08-82	62	<0.1	7.2
12-14-82	56	<0.1	6.4
12-21-82	53	<0.1	6.9
12-28-82	60	<0.1	7.2
Number of Samples:	13	13	13
Average Value:	--	<0.1	--
Maximum Value:	80	<0.1	7.6
Minimum Value:	53	<0.1	6.4
Limits Exceeded:	--	--	0

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

From: 10-01-82
To: 12-31-82

Permit Number: 0004120

Discharge Location: 001E, - Combined Plant Waste (Unit II)
Frequency of Analysis: 1/wk.

Type of Samples:	In Situ	Grab	Grab
Parameter:	Temperature	Average Free Chlorine	pH
	°F	mg/l Cl,	pH Units
Limits:	-	-	Min. 6.0
	-	-	Max. 9.0
Date			
10-06-82	79	<0.1	7.9
10-13-82	79	<0.1	7.0
10-20-82	72	1	7.2
10-26-82	67	<0.1	7.2
11-03-82	73	<0.1	7.1
11-10-82	71	<0.1	6.8
11-17-82	59	<0.1	7.1
11-24-82	68	<0.1	7.2
12-01-82	82	<0.1	8.2
12-08-82	62	<0.1	6.5
12-14-82	60	<0.1	6.6
12-21-82	78	<0.1	6.8
12-28-82	64	<0.1	7.1
Number of Samples:	13	13	13
Average Value:	--	<0.1	--
Maximum Value:	82	<0.1	8.2
Minimum Value:	59	<0.1	6.5
Limits Exceeded:	--	--	0

Note: 1) Unit out of service.

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.

T. E. Byerley
Manager of Environmental Affairs

Rod Handl 10-1-82

CIRC WATER CHLORINATION DATA

DATA SHEET 1

UNIT NO: II

WEEKLY

DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS NO. 1	CHLORINATORS NO. 2	BIOTREND BEFORE	BIOTREND AFTER	Cl_2 FREE mg/l* AVG.	Cl_2 FREE mg/l* MAX	Cl_2 DISCHARGE HOUR/DAY	INITIALS
—	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME				
9-1	3	40	2000	*	NA	NA	<.1	<.1	0	[illegible]
9 9	3	40	1500	*	*	NA	<.1	<.1	0	[illegible]
9-16	3	40	200	*	NA	NA	<.1	<.1	0	[illegible]
* 9-23	<			0.02					→	bn/JBB
* 10-1	<			0.00					→	Bm
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

9-1-82
Circ H_2O chlorinators I and II cannot be adjusted to meet our limits. MR has been written

9-9-82
Chlorinators I and II cannot be adjusted legally if the maximum biotrends were taken

9-16-82
Chlorinators I and II cannot be adj[illegible]

* Maintenance is being done on Circ H_2O system

CIRC WATER CHLORINATION DATA
DATA PACKAGE 1
(DATA SHEET 1)

Page 2 of 2

EN2-7605 BOS

CIRC WATER CHLORINATION DATA

DATA SHEET 1

UNIT NO: I

WEEKLY

DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS		BIOTREND		Cl_2			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l* DISCHARGE			
	CYCLE/DAY	MIN/CYCLE	#/24 HR	#/24 HR	TIME	TIME	AVG.	MAX	HOUR/DAY	
1/4/82	2	30	—	3400	—	—	<0.1	<0.1	0	JJB
1/5/82	<			000					/	DM
1/6/82	<			000					2	DM
1/7/82	<			000					/	DM
1/8/82	<			000					2	DM 1/8
1/9/82	<			000					/	DM
1/10/82	<			000					2	DM
1/11/82	<			000						
					LIMIT		0.20	0.50	2 HR/DAY	

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

CIRC WATER CHLORINATION DATA

DATA SHEET 1

WEEKLY

UNIT NO: 11

DATE	FREQUENCY	CL_2 INJECT	CHLORINATORS		BIOTREND		Cl_2			INITIALS
			NO. 1	NO. 2	BEFORE	AFTER	FREE mg/l* DISCHARGE			
	CYCLE/DAY	MIN/CYCLE	1/24 HR	1/24 HR	TIME	TIME	AVG.	MAX	HOUR/DAY	
6/3/82	3	—	—	002	—	—	—	—	—	DM
6/8/82	3	40	002	3900	2130	—	<.1	<.1	NONE	JFB
6/14/82	—	—	—	002	—	—	—	—	—	DM JFB
6/20/82	—	—	—	002	—	—	—	—	—	JFB
6/27/82	3	40	002	3800	1140	1220	<.1	<.1	NONE	JFB
7/4/82	3	40	002	6400	NA	NA	<.1**	<.1**	NONE	DM
7/11/82	3	40	005	6400	1210	1225	<.1	<.1	NONE	JFB
			LIMIT				0.20	0.50	2 HR/DAY	

* ~~could not read~~ chlorine timer adjusted, was not chlorinating at proper times.

* MEASURED AT TOWER OVERFLOW DURING CHLORINATION CYCLE

** TC overflow, measured at flume

SERVICE WATER CHLORINATION DATA

DATA SHEET 2

WEEKLY

UNIT NO. I

DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS			BIOTREND				Cl_2		
			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	HOUR/DAY
10/8	[illegible]	[illegible]		005								[illegible]
10/12	1 cont	cont	005	200	005	2000	—	< 1	< 1	< 1	< 1	NA None
10/22/82	<				005	—	—	—	—			2
10/29/82	<				005							2
11/4/82	<				002							2
11/12/82	<				005							2
11/15/82	<				005							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 PACKAGE 2
(DATA SHEET 2)

SERVICE WATER CHLORINATION DATA

DATA SHEET 2

UNIT NO. II

WEEKLY

DATE	FREQUENCY	Cl_2 INJECT	CHLORINATORS			BIOTREND				Cl_2		
			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
10/15/82	1				000							
10/23	1				000							
10/22	1				000							
10/29	1				002							
11/4/82	1				002							
11/12/82	1				005							
						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 2)