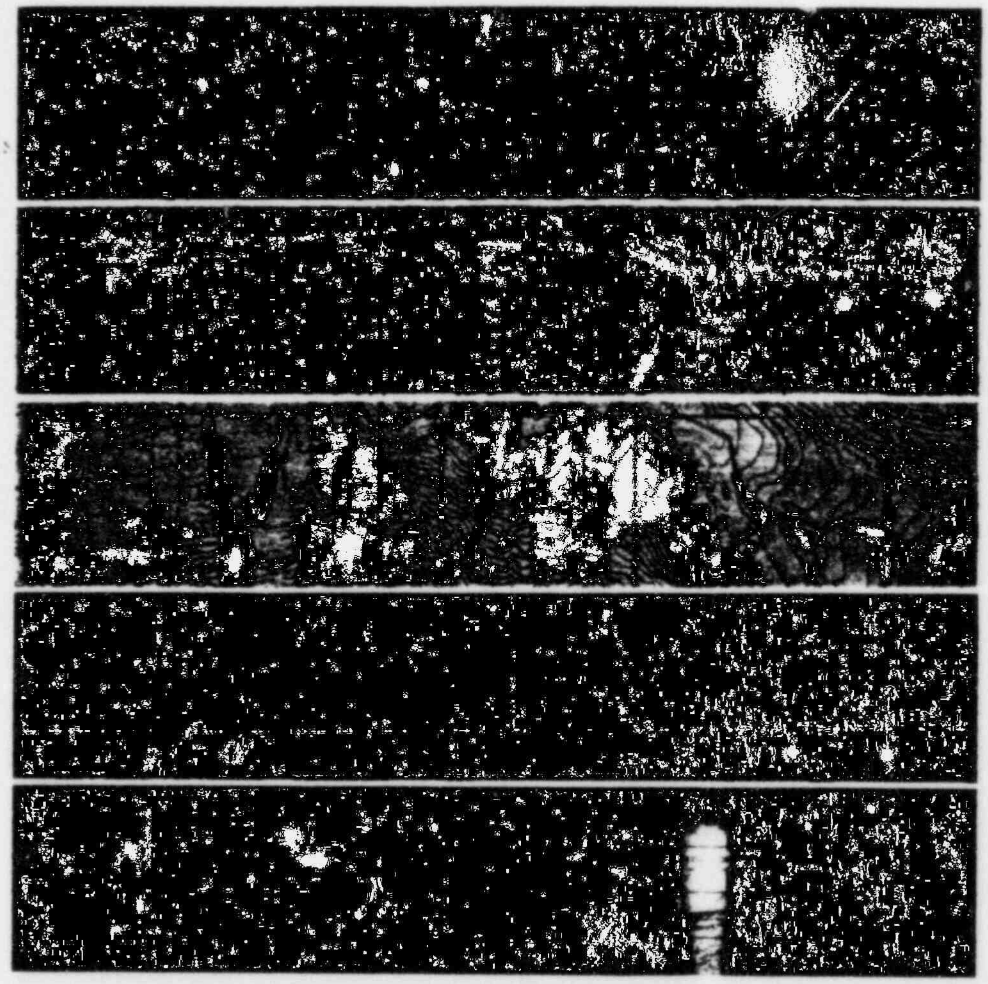

ENVIRONMENTAL MONITORING REPORT
JANUARY THROUGH MAY 1985
FOR THE SOUTH CAROLINA DEPARTMENT OF
HEALTH AND ENVIRONMENTAL CONTROL

AUGUST 1985

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Job No. 5182-108-09

SUMMARY

The V.C. Summer Nuclear Station (VCSNS) environmental monitoring programs were designed to meet the licensing requirements of the Nuclear Regulatory Commission (NRC) and the requirements of the National Pollutant Discharge Elimination System (NPDES) permit issued by the South Carolina Department of Health and Environmental Control (SCDHEC). The purpose of the operational environmental monitoring program was to assess the thermal effects of VCSNS on the biota in Monticello Reservoir. Power testing of the VCSNS began in October 1982 and waste heat was discharged to the reservoir throughout the period of January 1983 through December 1984. The operational history of the VSCNS is presented in the Environmental Monitoring Report (Dames & Moore, 1985). A detailed description of the history of the reservoir, collecting stations, and other pertinent information was reported in a series of earlier Environmental Monitoring Reports (Dames & Moore, 1978; 1985).

This report includes a summary of larval fish data collected during the study period January through May 1985. The results indicate that the fish are spawning slightly earlier in the season when compared to baseline and operational data. This change in timing of reproduction seems to be directly related to the heated water effluent from the nuclear plant. Spawning temperatures were reached earlier in 1985 than in previous years (including 1984 when induced early spawning was first noted). The 1985 early spawning was most apparent in white bass, the first species to appear in January and February. In March larval shad and perch were noted while minnows, suckers, bream, and crappie larvae were collected in April. In May the threadfin shad, was collected as larvae for the first time in the history of the project. Larval fish were collected throughout the reservoir from March through May with no apparent preference for thermally or non-thermally influenced stations. No dramatic or unusual changes in larval fish density or diversity were observed when compared with data from previous years (Dames & Moore,

1978 through 1985). There was no apparent effect of the heated effluent on the dissolved oxygen of the reservoir. The water temperature was elevted slightly (only in the immediate area of the thermal discharge).

Conclusions

The discharge of heated water during operation of VCSNS has had few effects on the larval fish of Monticello Reservoir. The only part of the reservoir affected by the VCSNS was the area between the discharge canal and Station K on the eastern shore of the lake. The only noticeable effect of these thermal additions was an induced early spawning of one species of fish, white bass, during January and February, and shad and perch during March (Table 1). During the study there was no sign of oxygen depletion or low dissolved oxygen levels in the thermally affected areas. Information collected during 1985 compares favorably with 1984 data (Dames & Moore, 1985) and supports these conclusions.

Concluding Statement

The overall results of the operational phase of the monitoring program indicate that the discharge of heated water from the VCSNS has had few effects on the larval fish. The effects that did occur were very localized and affected only three species of fish.

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The regulatory requirements for the FPSF and the VCSNS included areas of overlap in monitoring requirements. Therefore, when the FPSF began operation in 1978, the various monitoring studies were combined. The specific requirements met by this joint investigation included:

- ° Post-operational, five year, study for FPSF, required by Federal Energy Regulatory Commission (FERC).
- ° NPDES permit requirements for VCSNS, required by SCDHEC.
- ° Final pre-operational report for VCSNS, required by SCDHEC and the Nuclear Regulatory Commission.

2.0 OBJECTIVES

As part of the operating license requirement for the VCSNS, as stipulated in the NPDES permit, larval fish sampling was required by the SCDHEC during 1985. The purpose of the sampling was to determine potential effects of thermal discharges on reproduction of fish in Monticello Reservoir. The collecting period during 1985 was important since the VCSNS was not in operation during part of the same time period in 1984. Therefore some of the information reported herein was collected during the peak spawning period for some species of fish. In addition, these data will supplement information collected during the previous year (Dames & Moore, 1985).

Ichthyoplankton, comprised of the egg and larval component of fish, are of fundamental importance in assessing fishery success for two reasons:

1. Ichthyoplankton are the products of a specie's reproductive efforts; therefore, ichthyoplankton abundance and survival bear directly on the reproductive success of a specie.

2. Ichthyoplankton, particularly of forage species such as gizzard shad, provide a valuable food resource to a number of desirable fish species.

The seasonal abundance of ichthyoplankton is a reflection of the reproductive activity by the parent fish. In temperate areas, most spawning takes place in spring and summer; therefore, ichthyoplankton are collected most abundantly in these seasons. The presence of early life history stages of fish in an area often indicates that the area of the water body is being used as a nursery by adult fish.

Because of their limited mobility, eggs and larvae are particularly susceptible to being affected by the operation of power generating

stations. These effects, which are dependent on specific engineering variables, may include impingement upon water intake structures, entrainment through condenser cooling systems, and entrainment in the heated effluent discharged during power generation (Battelle, 1974). Thermal stress can kill organisms (Marcy, 1971; 1973), weaken them and thus make them more vulnerable to predation (Schubel et al., 1978), or, in the case of eggs, cause abnormal development of the embryo which often results in death soon after hatching (Koo and Johnston, 1978). Mechanical stress can also weaken or kill exposed organisms (Marcy, 1973).

3.0 METHODS

Larval fish were collected by personnel from SCE&G from January through May 1985 at eleven stations in Monticello Reservoir (Figure 1).

Duplicate ichthyoplankton samples were collected at two depths (surface and mid-depth) at stations situated in open water (I through O) and at the surface only at stations located in coves (Q, R, S, T). Collections at Stations I and M were obtained approximately one-half hour after sunset, whenever possible. Station L was sampled during the generation phase of the FPSF. All samples were collected by towing flow-metered plankton nets, having 0.75 meter diameter mouth openings, and a mesh size of 363 micrometers. Sampling was conducted until approximately 100 cubic meters of water had passed through the net. Sampling frequency was monthly during January, and weekly during mid-February through May. The total number of samples collected was 574.

The collected organisms were preserved and returned to the laboratory for identification, measurement, and enumeration.

During each field sampling period physical measurements (including dissolved oxygen, conductivity, temperature, and pH) were taken, in situ, by using calibrated electronic meters. Water transparency was measured with a secchi disc.

4.0 RESULTS AND DISUSSION

4.1 Ichthyoplankton

Mean monthly ichthyoplankton densities are presented in Table 1, and Table 2 presents the mean density of larval fish for the collecting period. Larval fish were collected during all months.

Larval white bass were the first ichthyoplankton appearing in Monticello Reservoir during the 1985 study. They occurred in January at two of the eleven stations with a density of 6.5 organisms/100 m^3 at Station N and a density of 0.5 organisms/100 m^3 at Station T (Table 1). This is the earliest that ichthyoplankton have been collected in Monticello Reservoir and, since these stations are thermally affected by the VCSNS, it is likely this earlier spawning activity is directly related to the discharge of heated water by the VCSNS. This theory is substantiated by similar findings during the previous year (Dames & Moore, 1985). This induced early spawning can be considered to have neither negative nor positive impacts on the fisheries community, but rather merely as a change in the spawning schedule. During February, ichthyoplankton, which also consisted entirely of white bass, were collected at six stations, four of which were thermally affected by the VCSNS. Collections of larval fish during February at the non-thermally influenced areas (Stations L and M) may indicate transportation of specimens to the area from Parr Reservoir, by the FPSF, or from the vicinity of Station K by winds from the northeast. In March larval fish were collected at all of the eleven sampling stations.

From March through May both the densities and diversities of larval fish increased at all stations with no evidence of influence from the VCSNS.

As in previous years of the study (preoperational and operational) Dorosoma sp. were the most abundant larvae collected with monthly

densities reaching as high as $112/m^2$ and $54.4/m^2$, surface and middepth respectively, at Station I in May. In 1985, Dorosoma sp. were first collected in March and were found at all stations during that month except O. This distribution indicates that spawning clupeids showed no apparent preference for heated or nonheated water, and emphasizes a lack of influence of the VCSNS on the spawning behavior of this common species. Pomoxis sp. and Lepomis spp., two species which are important from a recreational and ecological viewpoint, were first collected in April, with no evidence of their spawning schedule being influenced by heated effluent from the VCSNS (Table 1). Uncertainty in identifying Lepomis larvae to the species level (Conner, 1979) warrants the conservative designation of these as Lepomis spp. (sunfish), although the majority of specimens fit the "bluegill type."

Table 2 presents the mean density of larvel fish at the sampling stations. The control station (Station I) had the highest density, 36.4 and 13.8 organisms/m^3 at the surface and mid-depth locations, respectively. Station T, which was located in a cove on the east side of Monticello Reservoir (Figure 1) had the second highest density (20.6 organisms/m^3) of the stations. At both Stations I and T shad were the predominant species collected. Sampling results at the other stations were generally similar throughout the study period.

4.2 Water Temperature and Dissolved Oxygen

The water temperature and dissolved oxygen data are presented in Table 3 by station for each month of the study. This information was collected during larval fish sampling. In addition, average discharge temperature data, supplied by SCE&G personnel, are provided in Table 4.

The water temperatures recorded at the stations during the field sampling program in January reached a high of 14.5°C at Station N, a thermally influenced station, as opposed to a maximum of 7°C at Station

I, the control station. Morone chrysops has a spawning temperature optimum of 15°C (Eddy and Underhill, 1974), a temperature approached at Station N where highest reproduction of this species in January appears to be closely related to the elevated temperatures resulting from VCSNS operations. Power generation at the VCSNS was sporadic during the first half of January (Figure 2) and if the plant had been generating at full capacity, it is possible that Morone chrysops spawning would have occurred even earlier. During the February sampling program high water temperatures of 19°C at a thermally influenced station (Q) and 15°C at the control station were recorded, accounting for the broad distribution of reproductive stages in the reservoir.

There was no evidence of any oxygen depletion or depressed oxygen levels at any of the thermally influenced stations during the study.

4.3 Power Generation History

The power generation history of the VCSNS from January through May 1985 (Figure 2) is quite similar to the same period in 1984 (Dames & Moore, 1985). During 1983, however, the plant did not operate at full capacity during the early part of the year (Dames & Moore, 1984) and as a result, the effects of the waste heat discharge on the reservoir were lessened. Due to this lack of heated effluent there was no apparent early spawning activity during 1983.

5.0 SUMMARY

Fish larvae were collected in Monticello Reservoir during the first five months of 1985. Occurrence of ichthyoplankton during January and February appears to be related to the presence of heated water discharged from the VCSNS. The 1985 findings were similar to 1984 results in terms of species composition and abundance. Other than an apparently induced early spawning Morone chrysops there were no noticeable effects of the heated effluent on the spawning activities of the other species collected. No other effects of the VCSNS on the ichthyoplankton of Monticello Reservoir, positive or negative, were noted during the 1985 study. A larval threadfin shad (Dorosoma petenense) was collected for the first time in the study area.

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TABLE 1 - MONTHLY DENSITIES OF LARVAL FISH (NUMBER/100 m^3) COLLECTED IN NET TOWS, JANUARY THROUGH MAY 1985

Scientific or Family Name	Common Name	Station	I	J	K	L	M	N	O	Q	R	S	T
January 1985													
Morone chrysops	White bass	Surface	--	--	--	--	--	6.52	--	--	--	--	0.54
		Mid-depth	--	--	--	--	--	--	--	--	--	--	--
Total		Surface	--	--	--	--	--	6.52	--	--	--	--	0.54
		Mid-depth	--	--	--	--	--	--	--	--	--	--	--
February 1985													
Morone chrysops	White bass	Surface	--	--	2.04	0.54	0.53	2.46		0.93		10.12	
		Mid-depth	--	--	16.46	--	--	--	--	--	--	--	--
Damaged, Unid.		Surface	--	--	0.51	--	--	--	--	--	--	--	--
		Mid-depth	--	--	1.10	--	--	--	--	--	--	--	--
Total		Surface	--	--	2.55	0.54	0.53	2.46	--	0.93	--	10.12	--
		Mid-depth	--	--	17.56	--	--	--	--	--	--	--	--
March 1985													
Dorosoma spp.	Shad	Surface	0.40	0.46	0.16	0.25	0.96	0.51	--	0.38	0.97	2.51	0.51
		Mid-depth	0.42	--	0.57	0.32	0.96	--	--	--	--	--	--
Morone chrysops	White bass	Surface	--	--	--	1.48	4.04	0.09	0.99	1.96	0.11	3.69	0.45
		Mid-depth	--	0.58	0.51	--	0.62	1.41	--	--	--	--	--
Percidae	Perch	Surface	4.33	1.83	0.36	1.03	0.25	0.21	--	0.13	2.16	1.15	1.37
		Mid-depth	0.96	1.38	--	--	0.32	--	--	--	--	--	--
Damaged, Unid.		Surface	--	--	--	0.26	--	--	0.24	--	0.30	0.25	--
		Mid-depth	--	--	--	--	--	--	--	--	--	--	--
Total		Surface	4.73	2.29	0.49	3.02	5.25	0.81	1.23	2.47	3.54	7.60	2.33
		Mid-depth	1.38	1.96	1.08	0.32	1.90	1.41	--	--	--	--	--

TABLE 1 (Continued)

Scientific or Family Name	Common Name	Station	I*	J	K	L	M*	N*	O*	Q*	R	S*	T*
April 1985													
Dorosoma	Shad	Surface	56.03	11.55	1.62	4.41	3.58	1.18	0.85	2.93	7.46	8.35	14.43
		Mid-depth	5.86	3.93	5.46	4.95	0.29	7.29	2.33	--	--	--	--
Cyprinidae	Minnows	Surface	0.11	--	--	--	--	--	--	0.11	0.10	--	--
		Mid-depth	--	--	--	--	--	--	--	--	--	--	--
Catostomidae	Suckers	Surface	--	--	--	--	--	--	--	--	--	--	0.10
		Mid-depth	--	--	--	--	--	--	--	--	--	--	--
Morone chrysops	White bass	Surface	0.13	--	--	0.24	0.23	--	--	--	--	--	--
		Mid-depth	0.14	0.32	--	0.33	--	0.86	--	--	--	--	--
Lepomis sp.	Sunfish	Surface	0.10	--	--	--	--	--	--	--	--	--	0.10
		Mid-depth	--	--	--	--	--	--	--	--	--	--	--
Pomoxis spp.	Crappie	Surface	0.74	0.28	--	--	--	--	--	--	0.11	--	0.32
		Mid-depth	0.76	--	--	--	--	--	--	--	--	--	--
Percidae	Perch	Surface	4.52	0.28	0.11	0.96	0.47	--	0.72	--	1.53	--	2.80
		Mid-depth	3.78	--	--	--	0.29	--	--	--	--	--	--
Damaged, Unid.		Surface	0.13	0.30	0.24	0.24	--	--	--	0.11	0.21	--	0.10
		Mid-depth	--	--	0.12	--	--	0.12	--	--	--	--	--
Total		Surface	61.76	12.41	1.96	5.85	4.28	1.18	1.57	3.14	9.41	8.35	17.47
		Mid-depth	10.53	4.25	5.58	5.28	0.59	8.40	2.33	--	--	--	--

* A total of 18 samples from these stations were lost during shipping.

TABLE 1 (Continued)

Scientific or Family Name	Common Name	Station	I	J	K	L	M	N	O	Q	R	S	T	X
May 1985														
Dorosoma spp.	Shad	Surface	112.04	20.33	6.80	14.23	27.12	12.48	32.02	14.43	34.31	25.69	79.66	--
		Mid-depth	54.43	16.22	14.61	17.62	13.08	10.53	10.37	--	--	--	--	--
Dorosoma petenense	Threadfin shad	Surface	1.38	--	--	--	--	--	--	--	--	--	--	--
		Mid-depth	0.16	--	--	--	--	--	--	--	--	--	--	--
Cyprinidae	Minnows	Surface	--	--	--	0.34	--	--	--	--	--	--	--	--
		Mid-depth	--	--	--	--	--	--	--	--	--	--	--	--
Catostomidae	Suckers	Surface	--	--	--	--	--	--	--	--	--	--	--	--
		Mid-depth	--	--	--	--	1.00	--	--	--	--	--	--	--
Lepomis spp.	Sunfish	Surface	0.27	0.50	0.29	0.26	0.25	--	--	--	0.13	--	0.67	--
		Mid-depth	--	--	--	--	--	--	--	--	--	--	--	--
Pomoxis spp.	Crapple	Surface	0.27	--	--	--	--	--	--	--	--	--	0.13	--
		Mid-depth	--	--	--	--	--	--	--	--	--	--	--	--
Percidae	Perch	Surface	0.25	1.02	0.12	3.03	0.76	0.29	1.06	0.25	0.67	--	0.51	--
		Mid-depth	0.16	0.82	--	0.32	--	0.16	--	--	--	--	--	--
Damaged, Unid.		Surface	1.10	1.27	0.12	0.67	0.76	0.27	2.38	0.42	1.35	1.36	1.46	--
		Mid-depth	2.51	0.32	0.77	1.79	--	0.77	0.34	--	--	--	--	--
Total		Surface	115.30	23.12	7.32	18.52	28.89	13.04	35.46	15.11	36.46	27.04	82.42	--
		Mid-depth	57.25	16.87	15.38	19.73	14.08	11.46	10.71	--	--	--	--	--

TABLE 2 - MEAN DENSITY OF LARVAL FISH (NUMBER/100 m^3) FOR STATIONS I THROUGH O DURING JANUARY 1985 THROUGH MAY 1985

Taxon	Scientific Name	Station	I	J	K	L	M	N	O	Q	R	S	T
Unidentified shad	*Dorosoma spp.*	Surface	33.69	6.47	1.72	3.78	6.33	2.83	6.57	3.55	8.55	7.31	18.92
		Mid-depth	12.14	4.03	4.13	4.58	2.87	3.56	2.54	--	--	--	--
Threadfin shad	*Dorosoma petenense*	Surface	0.28	--	--	--	--	--	--	--	--	--	--
		Mid-depth	0.03	--	--	--	--	--	--	--	--	--	--
Minnow	*Cyprinidae*	Surface	0.02	--	--	0.07	--	--	--	0.02	0.02	--	--
		Mid-depth	--	--	--	--	--	--	--	--	--	--	--
Sucker	*Catostomidae*	Surface	--	--	--	--	--	--	--	--	--	--	0.02
		Mid-depth	--	--	--	--	0.20	--	--	--	--	--	--
White bass	*Morone chrysops*	Surface	0.03	--	0.41	0.45	0.96	1.98	0.20	0.58	0.02	2.76	0.20
		Mid-depth	0.03	0.18	3.39	0.07	0.12	0.45	--	--	--	--	--
Sunfish	*Lepomis spp.*	Surface	0.07	0.10	0.06	0.05	0.05	--	--	--	0.03	--	0.13
		Mid-depth	--	--	--	--	--	--	--	--	--	--	--
Crapple	*Pomoxis spp.*	Surface	0.20	0.06	--	--	--	--	--	--	--	--	--
		Mid-depth	0.15	--	--	--	--	0.03	--	0.02	--	--	0.09
Percid	*Percidae*	Surface	1.82	0.63	0.12	1.01	0.30	0.10	0.36	0.08	0.87	0.23	0.94
		Mid-depth	0.98	0.34	--	0.06	0.12	0.03	--	--	--	--	--
	Damaged Unid.	Surface	0.25	0.31	0.17	0.24	0.15	0.05	0.53	0.11	0.37	0.32	0.31
		Mid-depth	0.50	0.07	0.40	0.36	--	0.18	0.07	--	--	--	--
Totals		Surface	36.36	7.56	2.47	5.59	7.79	4.96	7.65	4.33	9.88	10.62	20.61
		Mid-depth	13.83	4.62	7.92	5.07	3.31	4.25	2.61	0.02	--	--	0.09

TABLE 3 - WATER TEMPERATURE AND DISSOLVED OXYGEN, IN SITU MEASUREMENTS, JANUARY THROUGH MAY, 1985

	January*						February*						March					
	Temperature (Degrees C)			Dissolved Oxygen (mg/liter)			Temperature (Degrees C)			Dissolved Oxygen (mg/liter)			Temperature (Degrees C)			Dissolved Oxygen (mg/liter)		
Station	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean
I	6.5	7.0	6.8	9.4	9.4	9.4	8.5	15.0	11.8	8.4	10.4	9.4	11.5	16.5	14.0	8.4	10.5	9.3
J	10.0	10.0	10.0	7.8	7.9	7.9	8.5	14.0	11.3	8.6	9.2	8.9	13.5	17.0	15.1	8.3	10.0	9.0
K	10.0	10.0	10.0	8.5	8.9	8.7	13.0	15.0	14.0	9.5	9.5	9.5	12.0	18.0	15.1	8.4	10.0	9.1
L	7.5	8.0	7.8	9.5	9.5	9.5	8.0	16.0	12.0	7.4	10.1	8.8	11.5	16.0	13.8	8.5	8.8	8.6
M	7.0	7.5	7.3	9.0	9.6	9.3	9.0	14.5	11.5	8.6	10.0	9.3	13.5	15.0	14.3	8.3	9.7	9.1
N	8.5	14.5	11.5	8.3	9.9	9.1	10.0	16.5	13.3	7.9	9.4	8.7	12.0	20.0	14.9	8.2	9.8	9.2
O	8.5	9.0	8.8	7.8	8.8	8.3	10.0	14.5	12.3	9.9	10.4	10.2	13.5	18.0	15.3	7.8	9.5	8.6
Q	11.0	11.0	11.0	9.0	9.0	9.0	19.0	19.0	19.0	10.3	10.3	10.3	20.0	22.0	21.5	9.1	10.4	9.7
R	11.5	11.5	11.5	8.8	8.8	8.8	17.5	17.5	17.5	10.4	10.4	10.4	15.0	20.0	18.1	8.6	9.9	9.2
S	11.5	11.5	11.5	9.8	9.8	9.8	16.5	16.5	16.5	9.4	9.4	9.4	15.0	20.0	18.0	8.6	9.9	9.3
T	10.0	10.0	10.0	9.0	9.0	9.0	16.0	16.0	16.0	9.3	9.3	9.3	14.0	19.5	17.5	8.4	9.8	9.2

* Only one measurement taken.

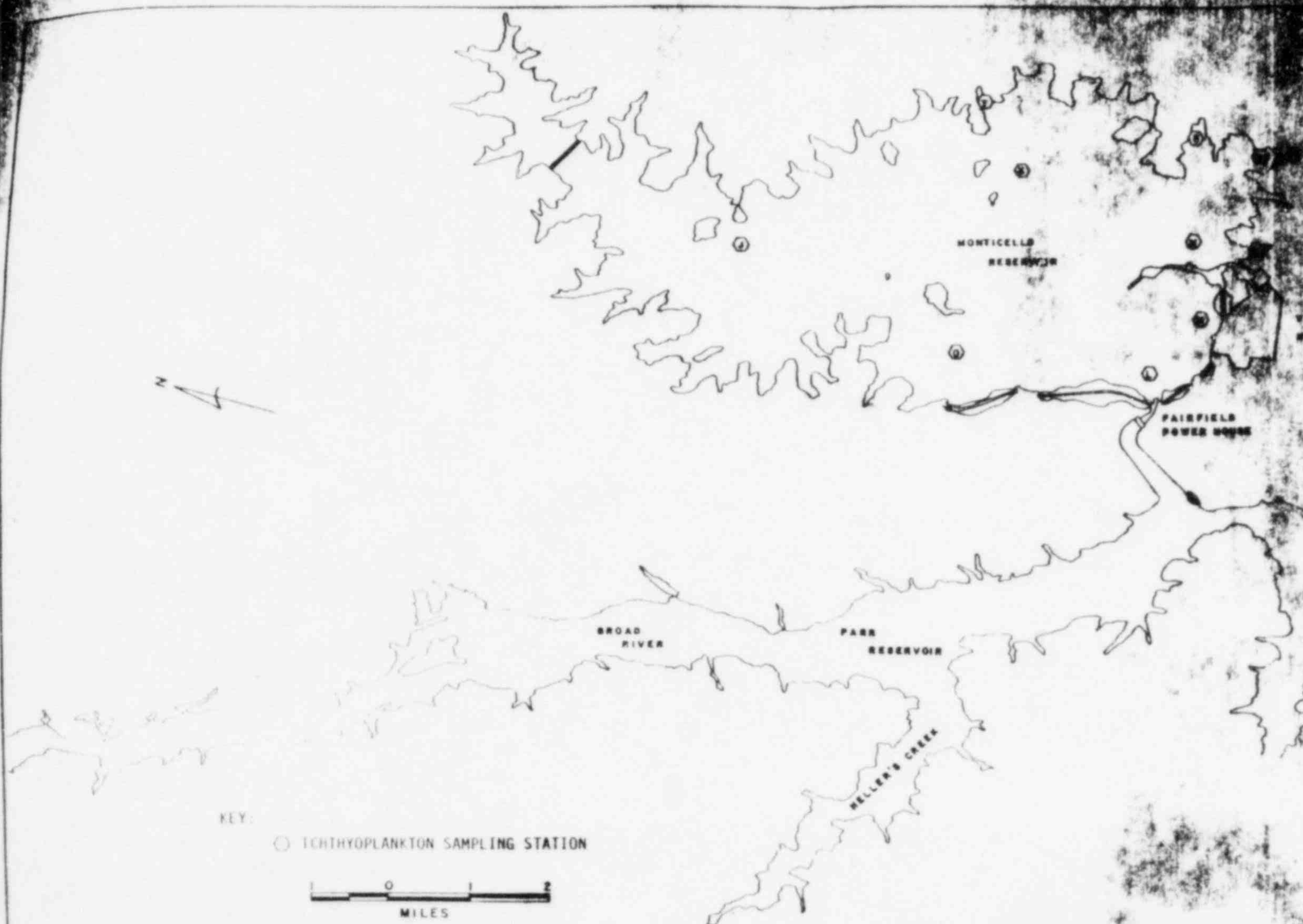
TABLE 3 (Continued)

	April						May					
	Temperature (Degrees C)			Dissolved Oxygen (mg/liter)			Temperature (Degrees C)			Dissolved Oxygen (mg/liter)		
Station	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean
I	16.0	24.0	18.9	6.8	11.0	8.4	19.0	29.0	23.4	5.3	9.7	7.6
J	16.5	25.5	20.0	7.0	11.0	9.0	19.5	26.0	22.0	5.8	10.2	7.8
K	18.0	26.0	21.4	7.5	9.5	8.6	20.0	26.0	23.5	8.0	10.8	9.1
L	15.5	23.5	18.9	6.8	9.5	8.2	19.0	25.0	21.4	5.8	10.2	7.9
M	16.0	23.0	18.5	6.4	9.5	8.4	20.0	23.5	21.8	6.0	9.7	8.1
N	16.5	25.0	20.1	6.0	10.1	8.4	20.0	29.0	23.5	6.4	11.4	8.5
O	16.0	25.0	19.6	7.2	10.1	8.5	19.5	24.5	21.8	6.3	9.6	7.7
Q	22.0	27.0	25.2	8.2	9.8	9.0	21.0	30.0	27.1	8.4	10.1	9.2
R	20.0	27.0	23.4	8.3	9.5	9.0	20.5	26.0	24.4	9.0	11.1	9.9
S	19.0	27.0	22.9	8.2	9.8	8.9	21.0	27.0	25.0	8.5	10.7	9.7
T	19.5	27.5	22.7	8.2	9.1	8.8	20.0	26.0	23.6	7.2	9.8	8.8

TABLE 4 - AVERAGE CIRCULATING WATER DISCHARGE TEMPERATURE (°F) AT THE VIRGIL C. SUMMER NUCLEAR STATION, JANUARY THROUGH MAY 1985

Day	January	February	March	April	May
1	74.6	71.4	58.8	84.9	ND
2	75.4	72.5	74.1	86.0	ND
3	78.8	73.4	73.4	85.6	ND
4	77.2	73.5	76.7	82.5	ND
5	74.9	73.5	76.3	62.6	ND
6	74.7	72.8	77.1	80.4	ND
7	71.9	72.6	78.3	85.7	ND
8	53.7	72.3	77.3	86.9	71.0
9	58.4	72.2	77.9	87.3	70.4
10	69.6	71.5	80.2	86.8	69.8
11	77.4	70.6	79.2	86.0	70.0
12	77.3	70.5	78.5	84.4	75.8
13	51.9	70.5	80.6	85.8	88.9
14	51.0	70.6	81.2	88.6	95.8
15	59.4	70.9	83.4	87.8	95.7
16	61.9	60.2	83.2	88.9	96.9
17	65.6	45.4	65.2	89.5	98.0
18	66.9	52.4	75.4	70.1	98.3
19	73.6	68.0	81.4	77.7	97.3
20	72.9	72.7	80.4	89.2	96.7
21	72.9	72.1	80.0	89.8	97.5
22	72.4	72.5	81.1	91.7	97.3
23	72.1	72.6	81.2	91.4	96.5
24	71.5	73.0	81.0	90.1	98.2
25	71.8	74.6	82.1	92.6	99.8
26	71.9	77.0	82.1	92.9	98.5
27	71.2	60.1	80.8	93.0	97.8
28	70.3	54.5	81.3	92.8	97.4
29	71.7		81.7	72.8	98.5
30	71.1		83.2	ND	99.5
31	71.9		82.8		98.4

ND = No Data



SOUTH CAROLINA ELECTRIC &

ICHTHYOPLANKTON SAMPLING

FIGURE 1

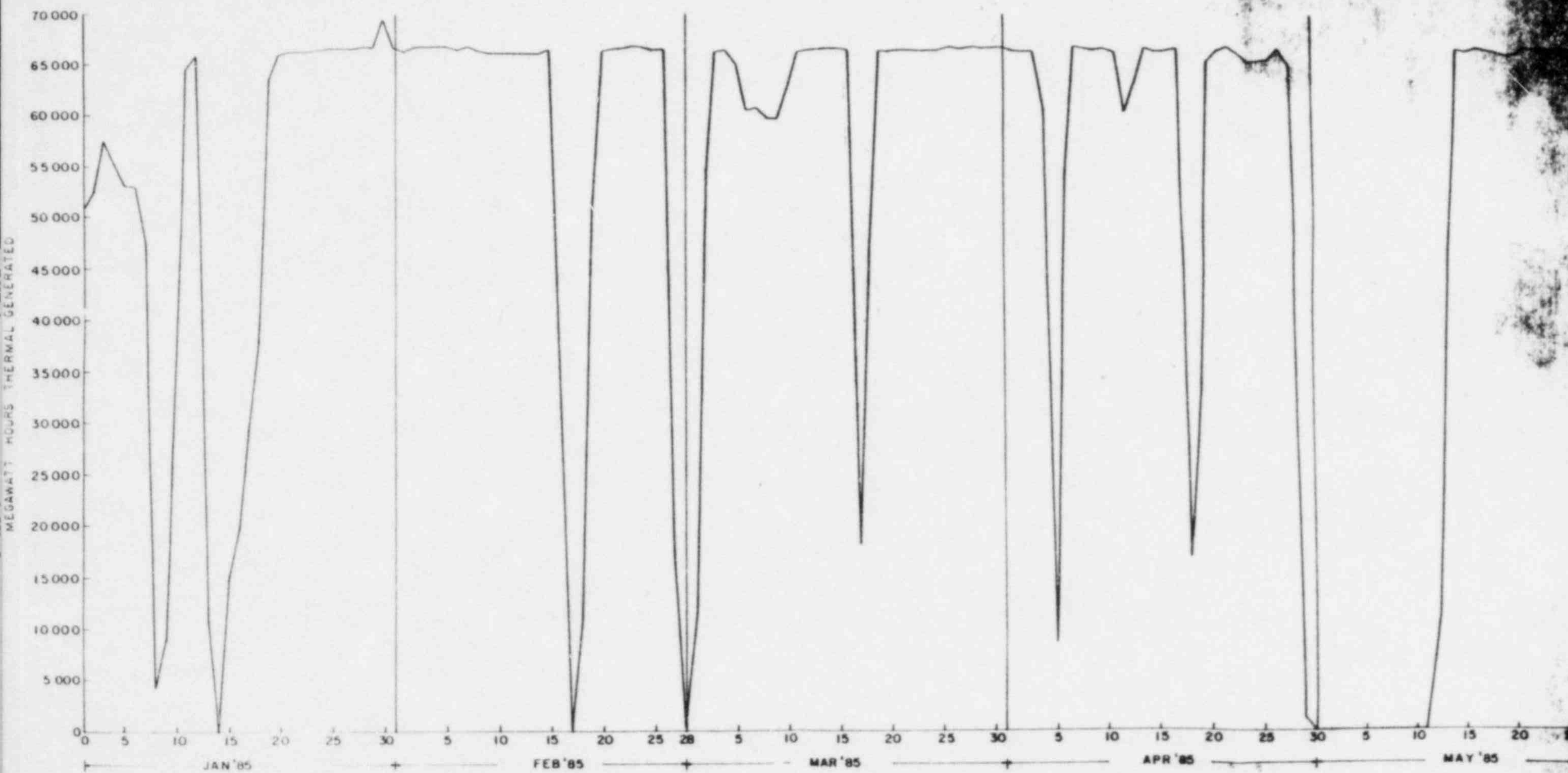


Figure 2. Average Megawatt Hours Th[illegible] Generated at the Virgil [illegible] Nuclear Station During [illegible] through May 1985.