# FLORIDA POWER & LIGHT COMPANY

# ST. LUCIE PLANT

# UNIT NO. 1

FLORIDA POWER & LIGHT COMPANY

PEOPLE . . . SERVING PEOPLE

# ANNUAL ENVIRONMENTAL REPORT NO. 2

FOR THE YEAR

1977

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## I. INTRODUCTION

This report is submitted by Florida Power & Light Company in accordance with St. Lucie Unit 1 Environmental Technical Specifications, Appendix B, Section 5.6.1.a. The report covers the period January 1, 1977 through December 31, 1977.

## II. SUMMARY

St. Lucie Unit No. 1 reached the 100% power level in January, 1977 and experienced no operating difficulties requiring shutdowns of significant length during the reporting period. At no time did the unit exceed any of the thermal limitations as imposed by the Environmental Technical Specifications.

Results of all chemical parameter monitoring have shown that levels of concentration were as expected and have not changed significantly during 1977.

The results of the biological surveillance program are discussed in the report entitled "Ecological Monitoring at the Florida Power & Light Company St. Lucie Plant - 1977." This report was prepared in accordance with Environmental Technical Specifications 3.1.B, 4.1, and 4.2. It compares the data collected during 1977 with the results of the baseline study[1] and the 1976 operational study[2] to assess the effects of plant construction and operation on

the major biotic communites in the near shore marine environment. It was concluded from this assessment that negligible impacts have resulted from the operation of the plant.

Only a few months remain until two years of plant operation are complete. We anticipate that the monitoring during that time will continue to demonstrate that the effects attributable to plant operation are environmentally acceptable. Therefore, we are preparing a summary report to be submitted under separate cover. That report will contain a request for revision of the biotic monitoring program at St. Lucie in accordance with Environmental Technical Specifications 3.1.B and 4.1.

[1]Preoperational Baseline Environmental Study performed by the Florida Department of Natural Resources Marine Research Laboratory in conjunction with FPL, September 1971 to July 1974.

[2]1976 Annual Environmental Monitoring Report entitled "Ecological Monitoring at the Florida Power & Light Company St. Lucie Plant."

## III. ABIOTIC SURVEILLANCE RESULTS

### 1. Thermal

The four thermal limitations of concern are: 1) discharge canal maximum release temperature (111°F); 2) maximum temperature rise across the condenser (24°F); 3) maximum temperature within the zone of mixing (93°F); and 4) maximum surface temperature rise over ambient within the zone of mixing (5.5°F). Analysis of all thermal data taken shows that no thermal limits were exceeded.

### 1.A. Maximum discharge canal water temperature

The maximum discharge canal water temperature was determined and tabulated (Table 1) for each day that the plant was operating. An analysis of the data shows that the maximum discharge temperature during the year was 110°F occuring on only 0.6% of the operating days (two days). The occurences were in July and September with the unit operating at approximately 95% and 97% of full power respectively. During these hot months with the plant at high power levels, it is expected that water temperatures will be higher.

### 1.B. Condenser $\Delta T$

Table 2 is a time duration table for the temperature rise across the condenser. It shows that the condenser $\Delta T$ reached the Technical Specification limit of 24°F on approximately 56% of the operating days. Since the condenser design temperature rise is 24°F, the maximum temperature rise is expected to be close to or at this

value on most of the days for a base-loaded plant such as St. Lucie.

The environmental impact on the ecosystem in the area of the thermal plume is dependent on the discharge canal water temperature rather than the condenser ΔT. As was discussed above, the discharge canal temperature was below the Technical Specification limit during 1977.

1.C. Zone of Mixing Maximum Water Temperature

Water temperature data within the zone of mixing was gathered using two self-contained recording thermographs as described in Environmental Technical Specification 3.1.A.6.

The maximum water temperature for each day is listed in Table 3. The recording thermographs in the discharge area were lost twice during 1977 and data were not recovered. (FPL Reportable Occurrence Nos. 335-B-77-01, and 335-B-7704). It is felt, however, that the maximum water temperature limit for the zone of mixing was not exceeded during these outages. This belief is based on the following factors: 1) The discharge canal temperature during the outages were normal. 2) There is not indication that mixing was hampered during the outage. 3) Similar plant operating conditions during the remainder of the year produced a maximum zone of mixing water temperature

of 90°F for only 0.8% of the operating days. This is 3°F below the Technical Specification limit and occurred infrequently.

1.D. Zone of Mixing Surface Temperature Rise

As shown by Table 4, the maximum surface temperature rise within the zone of mixing was 5.5°F which occurred only 1.2% of the operating days. Although a temperature rise of 5.5°F is the technical specification limit, it is considered to be acceptable because of the small portion of the operating time during which it occurred and because of the inherent difficulties of determining real temperature differences in the open ocean (i.e. instrument accuracy, accuracy of measuring the ambient temperature, and the natural temperature fluctuations in the ocean). The maximum temperature rise was determined using data from two recording thermographs as required by Environmental Technical Specification 3.1.A.6.

Section 1.C. above indicated that two outages of the thermographs in the discharge area occurred in 1977. One of these outages also involved the intake area thermograph. During the time of the outages, the $\Delta T$ in the zone of mixing was not determined. Monitoring of other thermal parameters during those periods shows, however, that no unusual conditions existed that might have caused the zone of mixing temperature rise to be abnormally high. Therefore, the thermograph data shows that the temperature rise in

the thermal plume did not exceed the Technical Specification limit during 1977.

1.E. Temperature Rise Outside The Zone Of Mixing

The surface temperature rise above ambient outside the 400 acre zone of mixing is limited to 1.5°F from June through September and 4°F during the remaining months. Infrared aerial photography was used to show compliance in accordance with Environmental Technical Specification 3.1.A.6. Four infrared flights were performed approximately three months apart to reflect seasonal conditions. The flights were performed by Texas Instruments Inc. Ecological Services Division and are represented as Quarter I through Quarter IV.

Each Quarter's flight was scheduled to occur during low and high tide conditions, weather permitting.[1] The results of Quarters I, II, and IV (Shown below) demonstrate that compliance with the 4°F criteria for temperature rise outside the 400 acre mixing zone has been accomplished.

1 A Quarter I flight at low tide was not performed due to equipment malfunctions.

Actual Area of 4°F Isotherm as % of 400 Acre Mixing Zone.

| Flight | Reactor Power (%) | Area (acres) | Tide Condition | % of Allowable |
|---|---|---|---|---|
| Quarter I | 82 | 3.1 | High | 0.78 |
| Quarter II | 98.4 | 2.4 | High | 0.6 |
| | 98.4 | 0.1 | High | 0.02 |
| | 99.4 | 5.4 | Low | 1.4 |
| Quarter IV | 99.6 | N.M.* | Low | N.M.* |
| | 100.1 | 22.19 | High | 5.5 |

*N.M. = Not Measurable

The Quarter III flight results (Shown below) demonstrate compliance with the 1.5°F criteria for temperature rise outside the 400 acre mixing zone during the months from June through September.

Actual Area of 1.5°F Isotherm as % of 400 Acre Mixing Zone.

| Flight | Reactor Power (%) | Area (acres) | Tide Condition | % of Allowable |
|---|---|---|---|---|
| Quarter III | 100 | 269 | Low | 67 |
| | 99.8 | 19.5 | High | 4.9 |

In conclusion, compliance with the limitations on temperature rise outside the 400-acre zone of mixing has been accomplished throughout 1977. Detailed information is presented in the quarterly reports which are enclosed with this report.

2. Chemical

Table 5 summarizes the chemical monitoring program at St. Lucie. Dissolved oxygen, pH, salinity, and total residual chlorine are monitored in the discharge canal. Dissolved oxygen is monitored in the intake canal.

Dissolved oxygen levels in both the intake and discharge canals were observed to fluctuate weekly between about 6.00 ppm and 8.00 ppm. This is consistent with the pattern observed in 1976.

The pH is measured daily in the discharge canal. It varied from a low of 8.00 to a high of 8.25. This is quite stable as would be expected in highly buffered sea water. These levels are consistent with those reported for 1976 and are well within the limits established by the Environmental Technical Specifications. Salinity concentrations in the discharge canal reached a low of 29.4 ppt and a high of 35.5 ppt. These levels are comparable to those observed previously and reported in the 1976 Annual Environmental Monitoring Report for St. Lucie.

Total residual chlorine levels ranged from the detection limit of 0.01 mg/l to a high of 0.08 mg/l. These are all below the technical specification limit of 0.1 mg/l.

Table 6 presents data from the St. Lucie heavy metals monitoring program. Five elements were found to be at levels less than their respective detection limits in both the intake and discharge canals throughout the year.

| Element | Detection Limit |
|---|---|
| Chromium | <0.02 ppm |
| Lead | <0.05 ppm |
| Mercury | <0.0002 ppm |
| Nickel | <0.02 ppm |
| Copper | <0.02 ppm |

The minimum detectable level for arsenic was increased from 0.001 ppm to 0.002 ppm during 1977 by the laboratory that FPL contracts to analyze its sample. We have not yet received the results from the final arsenic sample analysis for 1977. Based on the trend observed during 1976 and 1977, however, we anticipate that it will show a level below the detection limit. One sample (8-1-77) indicated a measurable quantity of arsenic in the intake canal. In view of the monitoring results during 1976 and the remainder of 1977, we have concluded that this was due to contamination in the sample or to an error in measurement.

The recorded levels of iron and zinc are reported in Table 6.

## IV. MINIMUM EFFECTIVE CHLORINE USAGE STUDY PROGRESS REPORT

Environmental Technical Specification 4.3 requires that a study be conducted "to determine the minimum amount of chlorine necessary which will afford adequate protection to the condenser while avoiding unnecessary discharge of chlorine to the environment." This study was performed using condenser cleanliness and efficiency as a means of determining when minimum chlorination had been achieved.

Analysis of the data collected during 1977 does not result in a direct correlation between condenser efficiency and chlorine injection rate (See Figure 1) Plant personnel have visually observed, however, an increase in fouling in other parts of the system as a result of operating at low chlorination rates; i.e. condenser water box, component cooling water heat exchangers, and intake structures. At a chlorination rate of 83.3 lbs per hour or less, the fouling in parts of the system other than the condenser is unacceptable. Therefore, the chlorination rate has been returned to 104 lbs per hour which was the original rate. This has resulted in an improvement.

Table 7 summarizes the chlorine injection data taken. A comparison of the concentrations of residual chlorine measured at the discharge canal terminus shows that the levels are approximately the same for all injection rates. Also, the concentrations at the canal terminus range from 0.005 to 0.08 ppm all of which are below the technical specification limit of 0.1 ppm.

Therefore, returning the chlorination rate to 104 lbs per hour does not result in an unnecessary discharge of chlorine to the environment.

## V. ADDITIONAL BIOTIC RESULTS

Sea turtle entrapment in the intake canal has occurred during the monitoring period of January 1, 1977 through December 31, 1977. A large mesh turtle net placed in the intake canal is used to capture the entrapped turtles. A total of 74 turtles were caught, tagged, and released unharmed to the ocean. Loggerhead turtles accounted for 70 of the number, with three green turtles and one leatherback turtle comprising the balance.

Mortality of sea turtles was also noted in the intake canal with six loggerheads and two greens being recovered. With the exception of one drowning, the cause of death was unknown.

The turtles were entrapped eleven out of twelve months of the year with the largest number being caught and released during the month of September. The weight and carapace size of the loggerheads indicates that the majority of these turtles are subadults.

The capture/release method is an interim solution to turtle entrapment while a final solution is being assessed and engineered.

## VI. CHANGES TO THE ENVIRONMENTAL TECHNICAL SPECIFICATIONS

None

## VII. REPORTABLE OCCURRENCES

There were four Environmental Reportable Occurrences during 1977.

| R. O. Number | Date of R. O. | Title |
|---|---|---|
| 335-B-77-01 | 1-10-77 | Discharge zone of Mixing - Recording Thermographs. |
| 335-B-77-02 | 1-26-77 | Waste Gases |
| 335-B-77-03 | 8-29-77 | Fish Impingement |
| 335-B-77-04 | 10-10-77 | Intake and Discharge Area Thermographs |

FIGURE 1

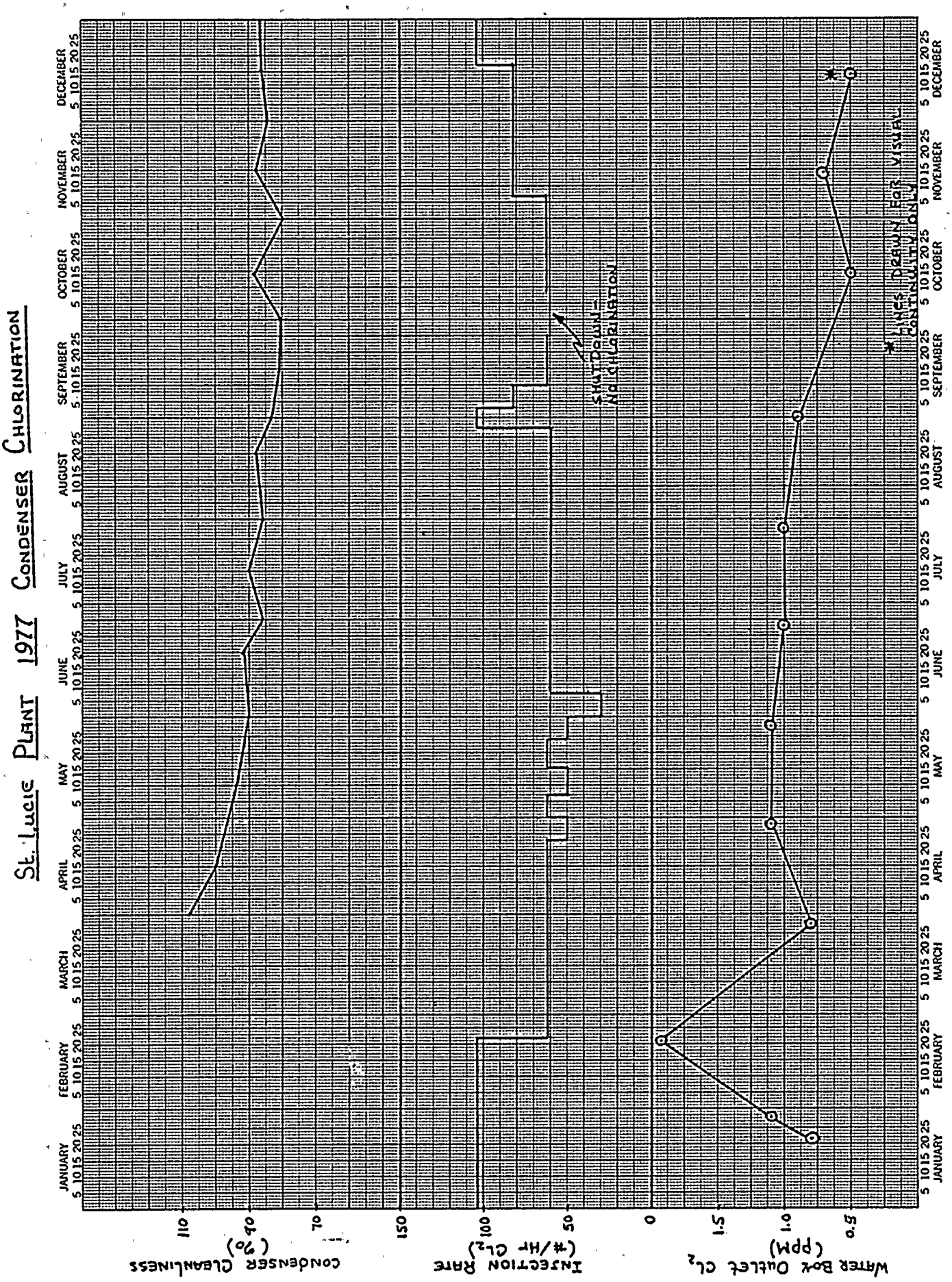
St. Lucie Plant 1977 Condenser Chlorination
K+E 1 YEAR BY DAYS X 250 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.
46 2890
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
SHUTDOWN-
NO CHLORINATION
* LINES DRAWN FOR VISUAL
CONTINUITY ONLY
Condenser Cleanliness
(%)
110
90
70
Injection Rate
(#/Hr Cl2)
150
100
50
0
Water Box Outlet Cl2
(PPM)
1.5
1.0
0.5

TABLE 1

ST. LUCIE PLANT
MAX. DISCHARGE CANAL TEMP.
TEMPERATURE DURATION CURVE

| NUMBER OF DAYS | MAXIMUM TEMP.-°F | ACCUMULATED % of Operating Days |
|---|---|---|
| 2 | 110 | 0.6 |
| 7 | 109 | 2.8 |
| 12 | 108 | 6.6 |
| 23 | 107 | 13.9 |
| 27 | 106 | 22.5 |
| 9 | 105 | 25.3 |
| 25 | 104 | 33.2 |
| 25 | 103 | 41.1 |
| 22 | 102 | 48.1 |
| 19 | 101 | 54.1 |
| 7 | 100 | 56.3 |
| 10 | 99 | 59.5 |
| 5 | 98 | 61.1 |
| 10 | 97 | 64.2 |
| 11 | 96 | 67.7 |
| 11 | 95 | 71.2 |
| 6 | 94 | 73.1 |
| 8 | 93 | 75.6 |
| 10 | 92 | 78.8 |
| 6 | 91 | 80.7 |
| 8 | 90 | 83.2 |
| 4 | 89 | 84.5 |
| 5 | 88 | 86.1 |
| 10 | 87 | 89.2 |
| 6 | 86 | 91.1 |
| 6 | 85 | 93.0 |
| 8 | 84 | 95.6 |
| 7 | 83 | 97.8 |
| 1 | 82 | 98.1 |
| 2 | 81 | 98.7 |
| 1 | 80 | 99.0 |
| 2 | 79 | 99.7 |
| 0 | 78 | 99.7 |
| 0 | 77 | 99.7 |
| 0 | 76 | 99.7 |
| 1 | 75 | 100.0 |

TABLE 2

ST. LUCIE PLANT
MAXIMUM CONDENSER ΔT
TEMPERATURE DURATION CURVE

| Number Of Days | Maximum ΔT - F° | Accumulated % of Operating Days |
|---|---|---|
| 181 | 24 | 55.9 |
| 59 | 23 | 74.1 |
| 32 | 22 | 84.0 |
| 22 | 21 | 90.7 |
| 10 | 20 | 93.8 |
| 1 | 19 | 94.1 |
| 3 | 18 | 95.1 |
| 1 | 17 | 95.4 |
| 1 | 16 | 95.7 |
| 4 | 15 | 96.9 |
| 1 | 14 | 97.2 |
| 3 | 13 | 98.2 |
| 4 | 12 | 99.4 |
| 1 | 11 | 99.7 |
| 0 | 10 | 99.7 |
| 0 | 9 | 99.7 |
| 0 | 8 | 99.7 |
| 0 | 7 | 99.7 |
| 0 | 6 | 99.7 |
| 1 | 5 | 100.0 |

TABLE 3

ST. LUCIE PLANT
ZONE OF MIXING MAXIMUM TEMPERATURE
TEMPERATURE DURATION CURVE

| Number Of Days | Maximum Temp-°F | Accumulated % of Operating Days |
|---|---|---|
| 2 | 90 | 0.8 |
| 5 | 89 | 2.8 |
| 7 | 88 | 5.7 |
| 15 | 87 | 11.7 |
| 18 | 86 | 19.0 |
| 16 | 85 | 25.5 |
| 27 | 84 | 36.4 |
| 17 | 83 | 43.3 |
| 30 | 82 | 55.5 |
| 23 | 81 | 64.8 |
| 19 | 80 | 72.5 |
| 8 | 79 | 75.7 |
| 3 | 78 | 76.9 |
| 7 | 77 | 79.8 |
| 9 | 76 | 84.2 |
| 7 | 75 | 87.0 |
| 9 | 74 | 90.7 |
| 6 | 73 | 93.1 |
| 5 | 72 | 95.1 |
| 1 | 71 | 95.6 |
| 1 | 70 | 96.0 |
| 4 | 69 | 97.6 |
| 2 | 68 | 98.4 |
| 3 | 67 | 99.6 |
| 1 | 66 | 100.0 |

TABLE 4

ST. LUCIE PLANT
ZONE OF MIXING MAX. SURFACE TEMP. RISE
TEMPERATURE DURATION CURVE

| Number Of Days | Maximum Rise-°F | Accumulated % of Operating Days |
|---|---|---|
| 2 | 5.5 | 1.2 |
| 0 | 5.4 | 1.2 |
| 0 | 5.3 | 1.2 |
| 2 | 5.2 | 2.3 |
| 3 | 5.1 | 4.0 |
| 9 | 5.0 | 9.2 |
| 0 | 4.9 | 9.2 |
| 3 | 4.8 | 11.0 |
| 4 | 4.7 | 13.3 |
| 1 | 4.6 | 13.9 |
| 10 | 4.5 | 19.6 |
| 1 | 4.4 | 20.2 |
| 4 | 4.3 | 22.5 |
| 12 | 4.2 | 29.5 |
| 3 | 4.1 | 31.2 |
| 12 | 4.0 | 38.2 |
| 5 | 3.9 | 41.0 |
| 2 | 3.8 | 42.2 |
| 4 | 3.7 | 44.5 |
| 1 | 3.6 | 45.1 |
| 11 | 3.5 | 46.2 |
| 1 | 3.4 | 46.8 |
| 2 | 3.3 | 48.0 |
| 15 | 3.2 | 56.6 |
| 2 | 3.1 | 57.8 |
| 14 | 3.0 | 65.9 |
| 2 | 2.9 | 67.0 |
| 2 | 2.8 | 68.2 |
| 15 | 2.7 | 76.9 |
| 0 | 2.6 | 76.9 |
| 5 | 2.5 | 79.8 |
| 0 | 2.4 | 79.8 |
| 1 | 2.3 | 80.4 |
| 8 | 2.2 | 85.0 |
| 2 | 2.1 | 86.1 |
| 4 | 2.0 | 88.4 |
| 2 | 1.9 | 89.6 |
| 2 | 1.8 | 90.8 |
| 8 | 1.7 | 95.4 |
| 0 | 1.6 | 95.4 |
| 1 | 1.5 | 96.0 |
| 0 | 1.4 | 96.0 |
| 0 | 1.3 | 96.0 |
| 5 | 1.2 | 98.8 |
| 0 | 1.1 | 98.8 |
| 2 | 1.0 | 100.0 |

ST. LUCIE PLANT UNIT NO. 1
CHEMICAL PARAMETERS
TABLE 5

1977 Month JANUARY

| DAY | INTAKE | | DISCHARGE | | | | REMARKS |
|---|---|---|---|---|---|---|---|
| | D.O.[1] | | pH | D.O.[1] | SALINITY[2] | T.R.C.[3] | |
| 1 | | | 8.20 | | 35.0 | | |
| 2 | | | 8.17 | | 34.8 | | |
| 3 | | | 8.20 | | 34.9 | .02 | |
| 4 | | | 8.20 | | 35.0 | | |
| 5 | 6.60 | | 8.22 | 6.90 | 34.6 | | |
| 6 | | | 8.20 | | 34.8 | | |
| 7 | | | 8.20 | | 35.0 | | |
| 8 | | | 8.21 | | 35.0 | | |
| 9 | | | 8.20 | | 34.8 | | |
| 10 | | | 8.2 | | 35.6 | | |
| 11 | | | 8.2 | | 35.2 | | |
| 12 | 7.1 | | 8.15 | 7.1 | 35.5 | | |
| 13 | | | 8.21 | | 35.2 | | |
| 14 | | | 8.15 | | 35.1 | | |
| 15 | | | 8.2 | | 35.1 | | |
| 16 | | | 8.2 | | 35.1 | | |
| 17 | | | 8.15 | | 34.6 | .02 | |
| 18 | | | 8.15 | | 35.2 | | |
| 19 | 7.2 | | 8.1 | 7.2 | 35 | | |
| 20 | | | 8.15 | | 35 | | |
| 21 | | | 8.1 | | 35 | | |
| 22 | | | 8.1 | | 35 | | |
| 23 | | | 8.15 | | 35 | | |
| 24 | | | 8.1 | | 35.2 | .02 | |
| 25 | | | 8.1 | | 35.2 | | |
| 26 | 7.3 | | 8.1 | 7.2 | 35.1 | | |
| 27 | | | 8.1 | | 35.2 | | |
| 28 | | | 8.15 | | 35 | | |
| 29 | | | 8.10 | | 34.8 | | |
| 30 | | | 8.05 | | 34 | | |
| 31 | | | 8.15 | | 35 | .02 | |

NOTES:
[1] Dissolved Oxygen in ppm.
[2] Salinity in ppt.
[3] Total Residual Chlorine in ppm.

ST. LUCIE PLANT UNIT NO. 1
CHEMICAL PARAMETERS
TABLE 5 (cont.)

1977 Month FEBRUARY

| DAY | INTAKE | | DISCHARGE | | | | REMARKS |
|---|---|---|---|---|---|---|---|
| | D.O.[1] | | pH | D.O.[1] | SALINITY[2] | T.R.C.[3] | |
| 1 | | | 8.10 | | 35.0 | | |
| 2 | 7.6 | | 8.12 | 7.7 | 33.5 | | |
| 3 | | | 8.12 | | 35.0 | | |
| 4 | | | 8.12 | | 35.0 | | |
| 5 | | | 8.10 | | 34.5 | | |
| 6 | | | 8.12 | | 34.8 | | |
| 7 | | | 8.10 | | 35.0 | | |
| 8 | | | 8.10 | | 35.2 | 0.02 | |
| 9 | 7.3 | | 8.12 | 7.2 | 35.0 | | |
| 10 | | | 8.10 | | 35.2 | | |
| 11 | | | 8.12 | | 35.1 | | |
| 12 | | | 8.12 | | 35.1 | | |
| 13 | | | 8.10 | | 35.3 | | |
| 14 | | | 8.10 | | 35.2 | | |
| 15 | | | 8.11 | | 35.1 | | Did Not Chlorinate |
| 16 | 6.9 | | 8.18 | 7.3 | 35.0 | | |
| 17 | | | 8.20 | | 35.0 | 0.02 | |
| 18 | | | 8.15 | | 35.0 | | |
| 19 | | | 8.14 | | 34.9 | | |
| 20 | | | 8.20 | | 35.0 | | |
| 21 | | | 8.10 | | 35.0 | | |
| 22 | | | 8.13 | | 35.0 | 0.02 | |
| 23 | 6.6 | | 8.14 | 6.6 | 35.1 | | |
| 24 | | | 8.14 | | 35.2 | | |
| 25 | | | 8.13 | | 35.3 | 0.02 | |
| 26 | | | 8.10 | | 34.8 | | |
| 27 | | | 8.11 | | 34.8 | | |
| 28 | | | 8.12 | | 35.1 | | |
| 29 | - | - | - | - | - | - | |
| 30 | - | - | - | - | - | - | |
| 31 | - | - | - | - | - | - | |

NOTES:
[1] Dissolved Oxygen in ppm.
[2] Salinity in ppt.
[3] Total Residual Chlorine in ppm.

ST. LUCIE PLANT UNIT NO. 1
CHEMICAL PARAMETERS
TABLE 5 (cont.)

1977 Month MARCH

| DAY | INTAKE | | DISCHARGE | | | | REMARKS |
|---|---|---|---|---|---|---|---|
| | D.O.[1] | | pH | D.O.[1] | SALINITY[2] | T.R.C.[3] | |
| 1 | | | 8.13 | | 34.9 | 0.02 | |
| 2 | 6.7 | | 8.10 | 6.45 | 35.1 | | |
| 3 | | | 8.10 | | 34.5 | | |
| 4 | | | 8.12 | | 33.5 | | |
| 5 | | | 8.13 | | 33.5 | | |
| 6 | | | 8.12 | | 34.0 | | |
| 7 | | | 8.13 | | 34.8 | | |
| 8 | | | 8.12 | | 35.2 | | |
| 9 | 6.4 | | 8.10 | 6.0 | 34.8 | | |
| 10 | | | 8.10 | | 35.0 | 0.02 | |
| 11 | | | 8.10 | | 35.5 | | |
| 12 | | | 8.10 | | 35.0 | | |
| 13 | | | 8.10 | | 35.5 | | |
| 14 | | | 8.10 | | 35.0 | | |
| 15 | | | 8.10 | | 35.3 | | |
| 16 | 6.6 | | 8.20 | 6.1 | 35.0 | 0.02 | |
| 17 | | | 8.11 | | 35.0 | | |
| 18 | | | 8.17 | | 35.0 | | |
| 19 | | | 8.13 | | 34.8 | | |
| 20 | | | 8.10 | | 34.6 | | |
| 21 | | | 8.15 | | 35.2 | | |
| 22 | | | 8.20 | | 34.9 | 0.02 | |
| 23 | 6.5 | | 8.18 | 6.2 | 35.2 | | |
| 24 | | | 8.18 | | 35.2 | | |
| 25 | | | 8.21 | | 35.4 | | |
| 26 | | | 8.20 | | 35.2 | | |
| 27 | | | 8.20 | | 35.1 | | |
| 28 | | | 8.15 | | 34.8 | | |
| 29 | | | 8.18 | | 35.0 | 0.05 | |
| 30 | 6.8 | | 8.15 | 6.7 | 34.8 | 0.04 | |
| 31 | | | 8.18 | | 35.0 | | |

NOTES:
[1]Dissolved Oxygen in ppm.
[2]Salinity in ppt.
[3]Total Residual Chlorine in ppm.

ST. LUCIE PLANT UNIT NO. 1
CHEMICAL PARAMETERS
TABLE 5 (cont.)

1977 Month APRIL

| DAY | INTAKE | | DISCHARGE | | | | REMARKS |
|---|---|---|---|---|---|---|---|
| | D.O.[1] | | pH | D.O.[1] | SALINITY[2] | T.R.C.[3] | |
| 1 | | | 8.15 | | 34.6 | | |
| 2 | | | 8.21 | | 34.8 | | |
| 3 | | | 8.18 | | 35.0 | | |
| 4 | | | 8.17 | | 34.9 | | |
| 5 | | | 8.21 | | 35.0 | 0.02 | |
| 6 | 7.3 | | 8.19 | 7.3 | 35.0 | | |
| 7 | | | 8.18 | | 35.0 | | |
| 8 | | | 8.18 | | 35.1 | | |
| 9 | | | 8.18 | | 35.1 | | |
| 10 | | | 8.20 | | 35.0 | | |
| 11 | | | 8.21 | | 35.0 | | |
| 12 | | | 8.19 | | 35.0 | 0.015 | |
| 13 | 6.95 | | 8.17 | 6.7 | 35.0 | | |
| 14 | | | 8.10 | | 35.0 | | |
| 15 | | | 8.13 | | 35.0 | | |
| 16 | | | 8.11 | | 34.8 | | |
| 17 | | | 8.15 | | 34.5 | | Did Not Chlorinate |
| 18 | | | 8.20 | | 34.9 | | |
| 19 | | | 8.21 | | 34.2 | | |
| 20 | 6.3 | | 8.17 | 6.95 | 34.5 | | |
| 21 | | | 8.18 | | 34.5 | | |
| 22 | | | 8.18 | | 34.2 | | |
| 23 | | | 8.18 | | 33.5 | | |
| 24 | | | 8.18 | | 33.8 | | |
| 25 | | | 8.17 | | 34.0 | | |
| 26 | | | 8.20 | | 34.1 | | |
| 27 | 6.3 | | 8.18 | 6.90 | 34.0 | | |
| 28 | | | 8.20 | | 34.0 | | Did Not Chlorinate |
| 29 | | | 8.19 | | 34.0 | 0.02 | |
| 30 | | | 8.20 | | 34.5 | | |
| 31 | - | - | - | - | - | - | |

NOTES:
[1] Dissolved Oxygen in ppm.
[2] Salinity in ppt.
[3] Total Residual Chlorine in ppm.

ST. LUCIE PLANT UNIT NO. 1
CHEMICAL PARAMETERS
TABLE 5 (cont.)

1977 Month MAY

| DAY | INTAKE | | DISCHARGE | | | | REMARKS |
|---|---|---|---|---|---|---|---|
| | D.O.[1] | | pH | D.O.[1] | SALINITY[2] | T.R.C.[3] | |
| 1 | | | 8.15 | | 34.0 | | |
| 2 | | | 8.21 | | 34.3 | | |
| 3 | | | 8.15 | | 34.5 | | |
| 4 | 6.5 | | 8.20 | 6.75 | 34.0 | 0.025 | |
| 5 | | | 8.14 | | 34.8 | | |
| 6 | | | 8.15 | | 34.5 | | |
| 7 | | | 8.12 | | 34.1 | | |
| 8 | | | 8.12 | | 34.6 | | |
| 9 | | | 8.12 | | 34.7 | 0.03 | |
| 10 | | | 8.20 | | 34.2 | | |
| 11 | 6.5 | | 8.22 | 6.9 | 33.7 | | |
| 12 | | | 8.21 | | 33.9 | | |
| 13 | | | 8.20 | | 33.5 | | |
| 14 | | | 8.15 | | 34.0 | | |
| 15 | | | 8.20 | | 33.5 | | |
| 16 | | | 8.18 | | 33.9 | | |
| 17 | | | 8.15 | | 33.3 | | |
| 18 | 6.2 | | 8.18 | 5.95 | 34.0 | 0.05 | |
| 19 | | | 8.18 | | 34.2 | | |
| 20 | | | 8.15 | | 33.9 | | |
| 21 | | | 8.18 | | 34.0 | | |
| 22 | | | 8.19 | | 34.2 | | |
| 23 | | | 8.12 | | 34.8 | | |
| 24 | | | 8.12 | | 34.3 | 0.04 | |
| 25 | 6.05 | | 8.11 | 5.90 | 34.0 | | |
| 26 | | | 8.12 | | 33.5 | | |
| 27 | | | 8.15 | | 33.8 | | |
| 28 | | | 8.15 | | 33.3 | | |
| 29 | | | 8.17 | | 33.5 | | |
| 30 | | | 8.15 | | 33.5 | | |
| 31 | | | 8.15 | | 33.5 | | |

NOTES:
[1]Dissolved Oxygen in ppm.
[2]Salinity in ppt.
[3]Total Residual Chlorine in ppm.

ST. LUCIE PLANT UNIT NO. 1
CHEMICAL PARAMETERS
TABLE 5 (cont.)

1977 Month JUNE

| DAY | INTAKE | | DISCHARGE | | | | REMARKS |
|---|---|---|---|---|---|---|---|
| | D.O.[1] | | pH | D.O.[1] | SALINITY[2] | T.R.C.[3] | |
| 1 | 6.35 | | 8.19 | 7.25 | 34.0 | | |
| 2 | | | 8.19 | | 34.0 | 0.03 | |
| 3 | | | 8.20 | | 34.3 | | |
| 4 | | | 8.20 | | 34.0 | | |
| 5 | | | 8.20 | | 34.2 | | |
| 6 | | | 8.13 | | 34.1 | | |
| 7 | | | 8.18 | | 34.9 | 0.04 | |
| 8 | 5.98 | | 8.12 | 6.2 | 34.2 | | |
| 9 | | | 8.17 | | 34.5 | | |
| 10 | | | 8.15 | | 34.2 | | |
| 11 | | | 8.15 | | 34.3 | | |
| 12 | | | 8.25 | | 34.6 | | |
| 13 | | | 8.15 | | 34.9 | | |
| 14 | | | 8.11 | | 34.9 | 0.03 | |
| 15 | 6.00 | | 8.13 | 6.2 | 35.0 | | |
| 16 | | | 8.12 | | 34.5 | | |
| 17 | | | 8.19 | | 34.7 | | |
| 18 | | | 8.20 | | 35.0 | | |
| 19 | | | 8.15 | | 35.0 | | |
| 20 | | | 8.13 | | 34.7 | | |
| 21 | | | 8.13 | | 34.6 | 0.03 | |
| 22 | 6.25 | | 8.10 | 6.3 | 34.1 | | |
| 23 | | | 8.12 | | 34.4 | | |
| 24 | | | 8.11 | | 34.6 | | |
| 25 | | | 8.12 | | 33.9 | | |
| 26 | | | 8.10 | | 34.2 | | |
| 27 | | | 8.12 | | 34.2 | | |
| 28 | | | 8.20 | | 33.9 | 0.035 | |
| 29 | 6.10 | | 8.21 | 6.95 | 34.1 | | |
| 30 | | | 8.22 | | 33.9 | | |
| 31 | - | - | - | - | - | - | |

NOTES:
[1] Dissolved Oxygen in ppm.
[2] Salinity in ppt.
[3] Total Residual Chlorine in ppm.

ST. LUCIE PLANT UNIT NO. 1
CHEMICAL PARAMETERS
TABLE 5 (cont.)

1977 Month JULY

| DAY | INTAKE | | DISCHARGE | | | | REMARKS |
|---|---|---|---|---|---|---|---|
| | D.O.[1] | | pH | D.O.[1] | SALINITY[2] | T.R.C.[3] | |
| 1 | | | 8.21 | | 33.8 | | |
| 2 | | | 8.20 | | 34.0 | | |
| 3 | | | 8.22 | | 33.5 | | |
| 4 | | | 8.20 | | 34.3 | | |
| 5 | | | 8.23 | | 33.9 | 0.03 | |
| 6 | 6.6 | | 8.16 | 6.1 | 34.2 | | |
| 7 | | | 8.13 | | 33.8 | | |
| 8 | | | 8.17 | | 33.5 | | |
| 9 | | | 8.14 | | 33.7 | | |
| 10 | | | 8.16 | | 33.5 | | |
| 11 | | | 8.16 | | 34.4 | | |
| 12 | | | 8.20 | | 34.0 | 0.03 | |
| 13 | 6.1 | | 8.18 | 5.9 | 31.0 | | |
| 14 | | | 8.16 | | 31.8 | | |
| 15 | | | 8.13 | | 32.0 | | |
| 16 | | | 8.12 | | 33.0 | | |
| 17 | | | 8.13 | | 33.2 | | |
| 18 | | | 8.23 | | 31.5 | | |
| 19 | | | 8.18 | | 31.2 | 0.02 | |
| 20 | 6.0 | | 8.20 | 5.9 | 33.1 | | |
| 21 | | | 8.20 | | 32.0 | 0.03 | |
| 22 | | | 8.20 | | 31.2 | | |
| 23 | | | 8.18 | | 31.0 | | |
| 24 | | | 8.20 | | 31.5 | | |
| 25 | | | 8.18 | | 30.0 | | |
| 26 | | | 8.18 | | 32.0 | 0.04 | |
| 27 | 6.2 | | 8.18 | 6.2 | 32.0 | | |
| 28 | | | 8.14 | | 31.5 | | |
| 29 | | | 8.20 | | 30.5 | | |
| 30 | | | 8.20 | | 31.1 | | |
| 31 | | | 8.20 | | 31.0 | | |

NOTES:
[1] Dissolved Oxygen in ppm.
[2] Salinity in ppt.
[3] Total Residual Chlorine in ppm.

ST. LUCIE PLANT UNIT NO. 1
CHEMICAL PARAMETERS
TABLE 5 (cont.)

1977 Month AUGUST

| DAY | INTAKE | | DISCHARGE | | | | REMARKS |
|---|---|---|---|---|---|---|---|
| | D.O.[1] | | pH | D.O.[1] | SALINITY[2] | T.R.C.[3] | |
| 1 | | | 8.17 | | 29.6 | | |
| 2 | | | 8.20 | | 29.4 | 0.06 | |
| 3 | 7.95 | | 8.12 | 7.65 | 30.3 | | |
| 4 | | | 8.18 | | 30.5 | | |
| 5 | | | 8.18 | | 29.5 | | |
| 6 | | | 8.18 | | 30.0 | | |
| 7 | | | 8.20 | | 31.5 | | |
| 8 | | | 8.20 | | 31.0 | | |
| 9 | | | 8.20 | | 31.0 | 0.02 | |
| 10 | 6.10 | | 8.20 | 5.70 | 33.0 | | |
| 11 | | | 8.20 | | 33.6 | | |
| 12 | | | 8.20 | | 33.5 | | |
| 13 | | | 8.15 | | 33.3 | | |
| 14 | | | 8.12 | | 32.6 | | |
| 15 | | | 8.17 | | 32.4 | | |
| 16 | | | 8.16 | | 32.4 | 0.08 | |
| 17 | 6.30 | | 8.20 | 5.90 | 33.5 | | |
| 18 | | | 8.20 | | 33.5 | | |
| 19 | | | 8.18 | | 33.7 | | |
| 20 | | | 8.17 | | 33.5 | | |
| 21 | | | 8.18 | | 33.5 | | |
| 22 | | | 8.15 | | 34.0 | | |
| 23 | | | 8.18 | | 33.7 | 0.02 | |
| 24 | 6.10 | | 8.13 | 6.00 | 34.0 | | |
| 25 | | | 8.12 | | 33.6 | | |
| 26 | | | 8.20 | | 33.5 | | |
| 27 | | | 8.18 | | 34.8 | | |
| 28 | | | 8.18 | | 35.0 | | |
| 29 | | | 8.18 | | 33.5 | 0.01 | |
| 30 | | | 8.18 | | 34.0 | | |
| 31 | 6.10 | | 8.18 | 6.00 | 34.0 | 0.02 | |

NOTES:
[1] Dissolved Oxygen in ppm.
[2] Salinity in ppt.
[3] Total Residual Chlorine in ppm.

ST. LUCIE PLANT UNIT NO. 1
CHEMICAL PARAMETERS
TABLE 5 (cont.)

1977 Month SEPTEMBER

| DAY | INTAKE | | DISCHARGE | | | | REMARKS |
|---|---|---|---|---|---|---|---|
| | D.O.[1] | | pH | D.O.[1] | SALINITY[2] | T.R.C.[3] | |
| 1 | | | 8.17 | | 34.3 | | |
| 2 | | | 8.18 | | 33.6 | | |
| 3 | | | 8.16 | | 34.0 | | |
| 4 | | | 8.17 | | 34.2 | | |
| 5 | | | 8.15 | | 34.0 | | |
| 6 | | | 8.15 | | 34.0 | 0.04 | |
| 7 | 6.1 | | 8.17 | 5.7 | 33.8 | | |
| 8 | | | 8.17 | | 33.8 | | |
| 9 | | | 8.15 | | 33.9 | | |
| 10 | | | 8.17 | | 34.0 | | |
| 11 | | | 8.17 | | 34.0 | | |
| 12 | | | 8.17 | | 33.8 | | |
| 13 | | | 8.18 | | 33.8 | 0.04 | |
| 14 | 6.3 | | 8.16 | 6.0 | 33.7 | | |
| 15 | | | 8.12 | | 33.9 | | |
| 16 | | | 8.15 | | 33.9 | | |
| 17 | | | 8.18 | | 33.8 | | |
| 18 | | | 8.18 | | 33.8 | | |
| 19 | | | 8.12 | | 33.6 | | |
| 20 | | | 8.12 | | 33.4 | | |
| 21 | 6.0 | | 8.08 | 5.7 | 34.2 | 0.01 | |
| 22 | | | 8.10 | | 34.1 | | |
| 23 | | | 8.14 | | 34.0 | | |
| 24 | | | 8.10 | | 34.0 | | |
| 25 | | | 8.13 | | 34.3 | | |
| 26 | | | 8.20 | | 34.0 | | |
| 27 | | | 8.18 | | 33.8 | | No Chlorination |
| 28 | 6.8 | | 8.16 | 6.2 | 33.9 | | |
| 29 | | | 8.13 | | 34.0 | | |
| 30 | | | 8.15 | | 34.0 | | |
| 31 | - | - | - | - | - | - | |

NOTES:
[1] Dissolved Oxygen in ppm.
[2] Salinity in ppt.
[3] Total Residual Chlorine in ppm.

ST. LUCIE PLANT UNIT NO. 1
CHEMICAL PARAMETERS
TABLE 5 (cont.)

1977 Month OCTOBER

| DAY | INTAKE | | DISCHARGE | | | | REMARKS |
|---|---|---|---|---|---|---|---|
| | D.O.[1] | | pH | D.O.[1] | SALINITY[2] | T.R.C.[3] | |
| 1 | | | 8.14 | | 34.2 | | |
| 2 | | | 8.11 | | 34.2 | | |
| 3 | | | 8.15 | | 33.4 | | |
| 4 | | | 8.18 | | 33.0 | | |
| 5 | 6.6 | | 8.20 | 8.2 | 34.0 | 0.02 | |
| 6 | | | 8.16 | | 33.5 | | |
| 7 | | | 8.20 | | 33.2 | | |
| 8 | | | 8.18 | | 33.4 | | |
| 9 | | | 8.18 | | 33.5 | | |
| 10 | | | 8.05 | | 33.5 | | |
| 11 | | | 8.14 | | 33.0 | | |
| 12 | 5.8 | | 8.16 | 5.4 | 33.1 | 0.01 | |
| 13 | | | 8.15 | | 33.2 | | |
| 14 | | | 8.14 | | 33.2 | | |
| 15 | | | 8.15 | | 33.2 | | |
| 16 | | | 8.10 | | 33.2 | | |
| 17 | | | 8.08 | | 33.1 | | |
| 18 | 6.0 | | 8.12 | 5.6 | 33.2 | | |
| 19 | | | 8.12 | | 33.2 | | |
| 20 | | | 8.15 | | 33.0 | 0.02 | |
| 21 | | | 8.16 | | 33.0 | | |
| 22 | | | 8.12 | | 33.5 | | |
| 23 | | | 8.18 | | 33.2 | | |
| 24 | | | 8.14 | | 32.0 | | |
| 25 | 6.4 | | 8.15 | 5.9 | 32.3 | 0.01 | |
| 26 | | | 8.10 | | 32.0 | | |
| 27 | | | 8.20 | | 32.5 | | |
| 28 | | | 8.20 | | 32.0 | | |
| 29 | | | 8.18 | | 32.1 | | |
| 30 | | | 8.20 | | 32.0 | | |
| 31 | | | 8.12 | | 32.0 | | |

NOTES:
[1]Dissolved Oxygen in ppm.
[2]Salinity in ppt.
[3]Total Residual Chlorine in ppm.

ST. LUCIE PLANT UNIT NO. 1
CHEMICAL PARAMETERS
TABLE 5 (cont.)

1977 Month NOVEMBER

| DAY | INTAKE | | DISCHARGE | | | | REMARKS |
|---|---|---|---|---|---|---|---|
| | D.O.[1] | | pH | D.O.[1] | SALINITY[2] | T.R.C.[3] | |
| 1 | 6.8 | | 8.15 | 6.4 | 34.2 | | |
| 2 | | | 8.12 | | 34.3 | 0.03 | |
| 3 | | | 8.14 | | 34.2 | | |
| 4 | | | 8.12 | | 34.4 | | |
| 5 | | | 8.12 | | 34.2 | | |
| 6 | | | 8.15 | | 34.2 | | |
| 7 | | | 8.15 | | 34.4 | | |
| 8 | 6.6 | | 8.13 | 6.2 | 34.2 | 0.01 | |
| 9 | | | 8.10 | | 34.5 | | |
| 10 | | | 8.10 | | 34.0 | | |
| 11 | | | 8.10 | | 34.0 | | |
| 12 | | | 8.10 | | 34.0 | | |
| 13 | | | 8.10 | | 34.0 | | |
| 14 | | | 8.10 | | 33.8 | | |
| 15 | 7.0 | | 8.10 | 7.0 | 33.5 | | |
| 16 | | | 8.15 | | 35.0 | 0.04 | |
| 17 | | | 8.10 | | 35.0 | | |
| 18 | | | 8.14 | | 35.2 | | |
| 19 | | | 8.16 | | 35.5 | | |
| 20 | | | 8.12 | | 35.1 | | |
| 21 | | | 8.12 | | 35.4 | | |
| 22 | 6.6 | | 8.12 | 6.25 | 35.5 | 0.02 | |
| 23 | | | 8.13 | | 35.3 | | |
| 24 | | | 8.12 | | 35.2 | | |
| 25 | | | 8.12 | | 35.4 | | |
| 26 | | | 8.10 | | 34.8 | | |
| 27 | | | 8.11 | | 35.0 | | |
| 28 | | | 8.10 | | 33.8 | | |
| 29 | 6.2 | | 8.20 | 6.0 | 34.0 | 0.03 | |
| 30 | | | 8.15 | | 34.5 | | |
| 31 | - | - | - | - | - | - | |

NOTES:
[1] Dissolved Oxygen in ppm.
[2] Salinity in ppt.
[3] Total Residual Chlorine in ppm.

ST. LUCIE PLANT UNIT NO. 1
CHEMICAL PARAMETERS
TABLE 5

1977 Month DECEMBER

| DAY | INTAKE | | DISCHARGE | | | | REMARKS |
|---|---|---|---|---|---|---|---|
| | D.O.[1] | | pH | D.O.[1] | SALINITY[2] | T.R.C.[3] | |
| 1 | | | 8.10 | | 34.5 | | |
| 2 | | | 8.05 | | 34.0 | | |
| 3 | | | 8.05 | | 34.1 | | |
| 4 | | | 8.10 | | 34.1 | | |
| 5 | | | 8.15 | | 34.2 | | |
| 6 | | | 8.18 | | 34.0 | | |
| 7 | 6.4 | | 8.12 | 6.2 | 35.0 | 0.03 | |
| 8 | | | 8.16 | | 35.0 | | |
| 9 | | | 8.20 | | 35.5 | | |
| 10 | | | 8.19 | | 35.0 | | |
| 11 | | | 8.20 | | 35.0 | | |
| 12 | | | 8.25 | | 35.5 | | |
| 13 | 6.8 | | 8.25 | 6.8 | 34.5 | 0.04 | |
| 14 | | | 8.20 | | 34.5 | | |
| 15 | | | 8.20 | | 35.0 | | |
| 16 | | | 8.20 | | 35.0 | | |
| 17 | | | 8.21 | | 35.0 | | |
| 18 | | | 8.20 | | 35.2 | | |
| 19 | | | 8.10 | | 34.5 | | |
| 20 | 6.8 | | 8.18 | 7.0 | 35.0 | | |
| 21 | | | 8.10 | | 34.5 | 0.04 | |
| 22 | | | 8.25 | | 34.0 | | |
| 23 | | | 8.20 | | 35.0 | | |
| 24 | | | 8.20 | | 34.8 | | |
| 25 | | | 8.21 | | 34.7 | | |
| 26 | | | 8.20 | | 34.5 | | |
| 27 | | | 8.20 | | 34.0 | 0.04 | |
| 28 | 6.7 | | 8.20 | 7.0 | 35.0 | | |
| 29 | | | 8.20 | | 35.0 | | |
| 30 | | | 8.20 | | 35.0 | | |
| 31 | | | 8.05 | | 34.5 | | |

NOTES:
[1] Dissolved Oxygen in ppm.
[2] Salinity in ppt.
[3] Total Residual Chlorine in ppm.

TABLE 6
ST. LUCIE PLANT UNIT NO. 1
HEAVY METALS

A. INTAKE

YEAR 1977

| | ARSENIC[1] | CHROMIUM[2] | COPPER[2] | IRON[2] | LEAD[2] | MERCURY[2] | NICKLE[2] | ZINC[2] |
|---|---|---|---|---|---|---|---|---|
| 1-4-77 | <.001 | <0.02 | <0.02 | 0.32 | <0.05 | <0.0002 | <0.02 | 0.04 |
| 1-31-77 | <.001 | <0.02 | <0.02 | 0.24 | <0.05 | <0.0002 | <0.02 | 0.06 |
| 2-28-77 | <.001 | <0.02 | <0.02 | 0.04 | <0.05 | <0.0002 | <0.02 | 0.10 |
| 4-1-77 | <.001 | <0.02 | <0.02 | <0.02 | <0.05 | <0.0002 | <0.02 | 0.07 |
| 4-29-77 | <.001 | <0.02 | <0.02 | <0.02 | <0.05 | <0.0002 | <0.02 | 0.08 |
| 5-31-77 | <.002 | <0.02 | <0.02 | 0.07 | <0.05 | <0.0002 | <0.02 | 0.04 |
| 6-30-77 | <.002 | <0.02 | <0.02 | <0.02 | <0.05 | <0.0002 | <0.02 | 0.03 |
| 8-1-77 | 0.010 | <0.02 | <0.02 | <0.02 | <0.05 | <0.0002 | <0.02 | 0.03 |
| 8-30-77 | <.002 | <0.02 | <0.02 | 0.63 | <0.05 | <0.0002 | <0.02 | 0.07 |
| 9-30-77 | <.002 | <0.02 | <0.02 | 0.25 | <0.05 | <0.0002 | <0.02 | 0.03 |
| 10-31-77 | <.002 | <0.02 | <0.02 | 0.16 | <0.05 | <0.0002 | <0.02 | 0.04 |
| 11-29-77 | | <0.02 | <0.02 | 0.08 | <0.05 | <0.0002 | <0.02 | 0.02 |

B. DISCHARGE

| | ARSENIC[1] | CHROMIUM[2] | COPPER[2] | IRON[2] | LEAD[2] | MERCURY[2] | NICKLE[2] | ZINC[2] |
|---|---|---|---|---|---|---|---|---|
| 1-4-77 | <.001 | <0.02 | <0.02 | 0.21 | <0.05 | <0.0002 | <0.02 | 0.03 |
| 1-31-77 | <.001 | <0.02 | <0.02 | 0.14 | <0.05 | <0.0002 | <0.02 | 0.07 |
| 2-28-77 | <.001 | <0.02 | <0.02 | 0.03 | <0.05 | <0.0002 | <0.02 | 0.12 |
| 4-1-77 | <.001 | <0.02 | <0.02 | <0.02 | <0.05 | <0.0002 | <0.02 | 0.09 |
| 4-29-77 | <.001 | <0.02 | <0.02 | 0.18 | <0.05 | <0.0002 | <0.02 | 0.07 |
| 5-31-77 | <.002 | <0.02 | <0.02 | <0.02 | <0.05 | <0.0002 | <0.02 | <0.02 |
| 6-30-77 | <.002 | <0.02 | <0.02 | <0.02 | <0.05 | <0.0002 | <0.02 | 0.04 |
| 8-1-77 | <.002 | <0.02 | <0.02 | <0.02 | <0.05 | <0.0002 | <0.02 | 0.03 |
| 8-30-77 | <.002 | <0.02 | <0.02 | 0.12 | <0.05 | <0.0002 | <0.02 | 0.05 |
| 9-30-77 | <.002 | <0.02 | <0.02 | 0.15 | <0.05 | <0.0002 | <0.02 | 0.02 |
| 10-31-77 | <.002 | <0.02 | <0.02 | 0.19 | <0.05 | <0.0002 | <0.02 | 0.03 |
| 11-29-77 | | <0.02 | <0.02 | 0.16 | <0.05 | <0.0002 | <0.02 | 0.03 |

NOTE: 1 Results in PPM
2 Results in mg/L

TABLE 7
FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT
CHLORINATION - 1977

| MONTH | | INJECTION * RATE | CL2 RESIDUAL WATERBOX DISCHARGE | CL2 RESIDUAL CANAL TERMINUS |
|---|---|---|---|---|
| Jan | 1st week | 104 lb/hr | | .02 PPM |
| | 2nd week | 104 lb/hr | | .005 PPM |
| | 3rd week | 104 lb/hr | 0.8 PPM | .02 PPM |
| | 4th week | 104 lb/hr | 1.1 PPM | .02 PPM |
| Feb | 1st week | 104 lb/hr | | .02 PPM |
| | 2nd week | 104 lb/hr | | .02 PPM |
| | 3rd week | 104 lb/hr | 1.9 PPM | .02 PPM |
| | 4th week | 62.5 lb/hr | | .02 PPM |
| Mar | 1st week | 62.5 lb/hr | | .02 PPM |
| | 2nd week | 62.5 lb/hr | | .02 PPM |
| | 3rd week | 62.5 lb/hr | | .02 PPM |
| | 4th week | 62.5 lb/hr | 0.8 PPM | .02 PPM |
| | 5th week | 62.5 lb/hr | | .04 PPM |
| April | 1st week | 62.5 lb/hr | | .02 PPM |
| | 2nd week | 62.5 lb/hr | | .015 PPM |
| | 3rd week | 62.5 lb/hr | | .02 PPM |
| | 4th week | 50 lb/hr | 1.1 PPM | .02 PPM |
| May | 1st week | 62.5 lb/hr | | .025 PPM |
| | 2nd week | 50 lb/hr | | .03 PPM |
| | 3rd week | 62.5 lb/hr | | .05 PPM |
| | 4th week | 50 lb/hr | 1.1 PPM | .04 PPM |
| June | 1st week | 33.3 lb/hr | | .03 PPM |
| | 2nd week | 62.5 lb/hr | | .04 PPM |
| | 3rd week | 62.5 lb/hr | | .03 PPM |
| | 4th week | 62.5 lb/hr | 1.0 PPM | .03 PPM |
| | 5th week | 62.5 lb/hr | | .035 PPM |
| July | 1st week | 62.5 lb/hr | | .03 PPM |
| | 2nd week | 62.5 lb/hr | | .02 PPM |
| | 3rd week | 62.5 lb/hr | | .03 PPM |
| | 4th week | 62.5 lb/hr | 1.0 PPM | .04 PPM |
| Aug | 1st week | 62.5 lb/hr | | .06 PPM |
| | 2nd week | 62.5 lb/hr | | .02 PPM |
| | 3rd week | 62.5 lb/hr | | .08 PPM |
| | 4th week | 104 lb/hr | | .02 PPM |
| | 5th week | 83.3 lb/hr | 0.9 PPM | .01 PPM |
| Sept | 1st week | 62.5 lb/hr | | .04 PPM |
| | 2nd week | 62.5 lb/hr | | .04 PPM |
| | 3rd week | 62.5 lb/hr | | .01 PPM |
| | 4th week | SHUTDOWN | | |

* Chlorine injection is normally 1 hr & 20 minutes per day with a 20 minute purge.

TABLE 7 (Cont)
FLORIDA POWER & LIGHT COMPANY
ST. LUCIE PLANT
CHLORINATION - 1977

| MONTH | | INJECTION * RATE | CL2 RESIDUAL WATERBOX DISCHARGE | CL2 RESIDUAL CANAL TERMINUS |
|---|---|---|---|---|
| Oct | 1st week | SHUT DOWN | | |
| | 2nd week | 62.5 lb/hr | 0.5 PPM | .01 PPM |
| | 3rd week | 62.5 lb/hr | | .02 PPM |
| | 4th week | 62.5 lb/hr | | .01 PPM |
| Nov | 1st week | 62.5 lb/hr | | .03 PPM |
| | 2nd week | 83.3 lb/hr | 0.7 PPM | .01 PPM |
| | 3rd week | 83.3 lb/hr | | .04 PPM |
| | 4th week | 83.3 lb/hr | | .02 PPM |
| | 5th week | 83.3 lb/hr | | .03 PPM |
| Dec | 1st week | 83.3 lb/hr | | .03 PPM |
| | 2nd week | 83.3 lb/hr | 0.5 PPM | .04 PPM |
| | 3rd week | 104 lb/hr | | .04 PPM |
| | 4th week | 104 lb/hr | | .04 PPM |

* Chlorine injection is normally 1 hr & 20 minutes per day with a 20 minute purge.