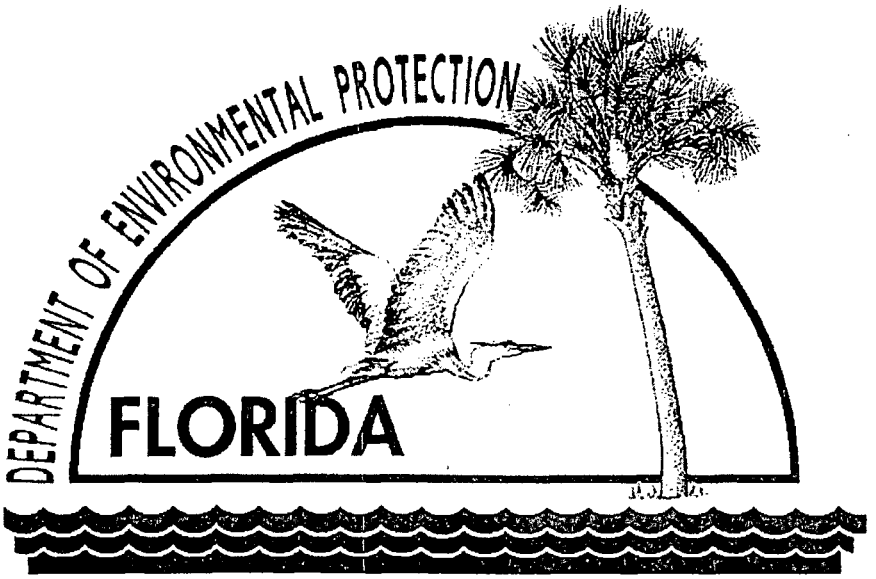


WASTEWATER APPLICATION FORM 2CS

PERMIT TO DISCHARGE PROCESS WASTEWATER
FROM NEW OR EXISTING
INDUSTRIAL WASTEWATER FACILITIES
TO SURFACE WATER

INSTRUCTIONS - FORM 2CS

This form must be completed by all applicants who check "yes" to Item II-C in DEP Form 62-620.910(1).

Public Availability of Submitted Information.

You may not claim as confidential any information required by this form or DEP Form 62-620.910(1), whether the information is reported on the forms or in an attachment. This information will be made available to the public upon request. Any information you submit to the Department which goes beyond that required by this form or DEP Form 62-620.910(1) you may claim as confidential, but claims for information which is effluent data will be denied. If you do not assert a claim of confidentiality at the time of submitting the information, the Department may make the information public without further notice to you. Claims of confidentiality must be in accordance with Rule 62-620.302, Florida Administrative Code.

Completeness

Your application will not be considered complete unless you answer every question on this form (DEP Form 62-620.910(5))and on Form 1 (DEP Form 62-620.910(1)). If an item does not apply to you, enter "NA" (for "not applicable") to show that you considered the question. Also, you may need a Plan of Study (POS) to develop Water Quality Effluent Limitations (WQBEL) required by Rule 62-650, F.A.C. Please contact the Department for information.

Follow-up Requirements (for New or Substantially Modified Facilities)

Although you are now required to submit estimated data on this form, please note that no later than six months after you begin discharging from the proposed or substantially modified facility, you must complete and submit items VII and VIII of this Form 2CS (DEP Form 62-620.910(5)). However, you need not complete those portions of Item V requiring test which you have already performed under the discharge monitoring requirements of your permit.

Definitions

All significant terms used in these instructions and in the form are defined in the glossary found in the General Instructions which accompany Form 1.

DEP ID Number

If you are applying for a renewal of an existing permit or for a substantial revision to an existing permit, fill in your DEP Identification Number at the top of each page of Form 2CS. You may copy this number directly from Item 1 of Form 1. If you are applying for a permit for a proposed facility, leave the DEP Identification Number blank. The Department will assign a number.

Item I

You may use the map you provided for Item XI of Form 1 to determine the latitude and longitude of each of your discharge locations.

Item II

Describe the design of each outfall, including construction materials used or to be used.

Item III

Describe the surface water body which will be or is receiving effluent from the wastewater facility.

Item IV

A. The line drawing should show generally the route taken by water in your facility from intake to discharge. Show all operations contributing wastewater, including process and production areas, sanitary flows, cooling water, and stormwater runoff. You may group similar operations into a single unit, labeled to correspond to the more detailed listing in Item III B. The water balance should show average flows. Show all significant losses of water to products, atmosphere, and discharge. You should use actual measurements whenever available; otherwise, use your best estimate.

B. List all sources of wastewater to each discharge point. Operations may be described in general terms (for example, "dye-making reactor" or "distillation tower"). You may estimate the flow contributed by each source if no data are available. For stormwater discharges you may estimate the average flow, but you must indicate the rainfall event upon which the estimate is based and the method of estimation. For each treatment unit, indicate its size, flow rate, and retention time, and describe the ultimate disposal of any solid or liquid wastes not discharged. Treatment units should be listed in order and you should select the proper code from Table 2CS-1 to fill in column 3-b for each treatment unit. Insert "XX" into column 3-b if no code corresponds to a treatment unit you list.

C. A discharge is intermittent unless it occurs without interruption during the operating hours of the facility, except for infrequent shut-downs for maintenance, process changes, or other similar activities. A discharge is seasonal if it occurs only during certain parts of the year. Fill in every applicable column in this item for each source of intermittent or seasonal discharges. Base your answers on actual data whenever available; otherwise, provide your best estimate. Report the highest daily value for flow rate and total volume in the "Max. Daily" columns (columns 4-a and 4-b). Report the average of all daily values measured during days when the discharge occurred within the last year in the "Long Term Avg." columns (columns 4-a and 4-b).

Item V

"Production" in this question refers to those goods which the proposed, substantially modified, or existing facility will produce or is producing, not to "wastewater" production. This information is only necessary where production-based new source performance standards (NSPS) or effluent guidelines apply to your facility. Your estimated production figures should be based on a realistic projection of actual daily production level (not design capacity) for each of the first three operating years of the facility. This estimate must be a long-term-average estimate (e.g., average production on an annual basis). If production will vary depending on long-term shifts in operating schedule or capacity, you may report alternate production estimates and the basis for the alternate estimates.

A. All NSPS and effluent guidelines promulgated by EPA appear in the Federal Register and are published annually in 40 CFR Subchapter N. A guideline applies to you if you have any operations contributing process wastewater in any subcategory covered by a BPT, BCT, or BAT guideline. If you are unsure whether you are covered by a promulgated NSPS or effluent guideline, check with your DEP district office (*Figure 1 in the Form 1 instructions*). You must check "yes" if an applicable NSPS or effluent guideline has been promulgated, even if the guideline limitations are being contested in court. If you believe that a promulgated NSPS or effluent guideline has been remanded for reconsideration by a court and does not apply to your operations, you may check "no."

B. An NSPS or effluent guideline is expressed in terms of production (*or other measure of operation*) if the limitation is expressed as mass of pollutant per operational parameter: for example, "pounds of BOD per cubic foot of logs from which bark is removed," or "pounds of TSS per megawatt hour of electrical energy consumed by smelting furnace." An example of a guideline not expressed in terms of a measure of operation is one which limits the concentration of pollutants.

C. This item must be completed only if you checked "yes" to Item V-B. The production information requested here is necessary to apply effluent guidelines to your facility and you cannot claim it as confidential. However, you do not have to indicate how the reported information was calculated. Report quantities in the units of measurement used in the applicable NSPS or effluent guideline. The production figures provided must be based on actual daily production and not on design capacity or on predictions of future operations. To obtain alternate limits under Rule 62-620.620(2)(b)3., F.A.C., you must define your maximum production capability and demonstrate to the Department that your actual production is substantially below maximum production capability and that there is a reasonable potential for an increase above actual production during the duration of the permit.

Item VI

A. If you check "yes" to this question, complete all parts of the chart, or attach a copy of any previous submission you have made to the Department containing the same information.

B. You are not required to submit a description of future pollution control projects if you do not wish to or if none is planned.

Item VII (*A, B, C, and D, including Tables VII-A, VII-B, and VII-C*)

This item requires you to collect and report data on the pollutants discharged from each of your discharge points. Each part of this item addresses a different set of pollutants and must be completed in accordance with the specific instructions for that part. The following general instructions apply to the entire item.

General Instructions

Part A requires you to report at least one analysis for each pollutant listed. Parts B and C require you to report analytical data in two ways. For some pollutants, you may be required to mark "X" in the "Testing Required" column (*column 2-a, Part C*), and test (*sample and analyze*) and report the levels of the pollutants in your discharge whether or not you expect them to be present in your discharge. For all other, you must mark "X" in either the "Believe Present" column or the "Believe Absent" column (*columns 2-a or 2-b, Part B, and Columns 2-b or 2-c, Part C*) based on your best estimate, and test for those which you believe to be present. (*See specific instructions on the form and below for Parts A through D.*) Base your determination that a pollutant is present in or absent from your discharge on your knowledge of your raw materials, maintenance chemicals, intermediate and final products and by-products, and any previous analyses known to you of your effluent or similar effluent. (*For example, if you manufacture pesticides, you should expect those pesticides to be present in contaminated stormwater runoff.*) If you would expect a pollutant to be present solely as a result of its presence in your intake water, you must mark "Believe Present" but you are not required to analyze for that pollutant. Instead, mark an "X" in the "Intake" column.

A. Reporting

All levels must be reported as concentration and as total mass. You may report some or all of the required data by attaching separate sheets of paper instead of filling out pages *VII*-1 to *VII*-10 if the separate sheets contain all the required information in a format which is consistent with pages *VII*-1 to *VII*-10 in spacing and in identification of pollutants and columns. (*For example, the data systems used in your GC/MS analysis may be able to print data in the proper format.*) Use the following abbreviations in the columns headed "Units" (*column 3, Part A, and Column 4, Parts B and C*).

Concentration
ppm - parts per million
mg/l - milligrams per liter
ppb - parts per billion
µg/l - micrograms per liter

Mass
lbs - pounds
ton - tons (English tons)
mg - milligrams
g - grams
kg - kilograms
T - tonnes (metric tons)

All reporting of values for metals must be in terms of "total recoverable metal," unless (1) an applicable, promulgated effluent limitation or standard specifies the limitation for the metal in dissolved, valent, or total form; or (2) all approved analytical methods for the metal inherently measure only its dissolved form (e.g., hexavalent chromium). If you measure only one daily value, complete only "Max. Daily Values" columns and insert "1" into the "Number of Analyses" column (*columns 2-a and 2-d, Part A, and column 3-a, 3-d, Parts B and C*). The Department may require you to conduct additional analyses to further characterize your discharges. For composite sample, the daily value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24-hour period; for grab samples, the daily value is the arithmetic or flow-weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24-hour period. If you measure more than one daily value for a pollutant and those values are representative of your waste stream, you must report them. You must describe your method of testing and data analysis. You also must determine the average of all values within the last year and report the concentration and mass under the "Long Term Avg. Values" columns (*column 2-c, Part A, and column 3-c, Parts B and C*), and the total number of daily values under the "Number of Analyses" columns (*column 2-d, Part A, and columns 3-d, Parts B and C*). Also determine the average of all daily values taken during each calendar month, and report the highest average under the "Max. 30-day Values" columns (*column 2-c, Part A, and column 3-b, Parts B and C*).

B. Sampling

The collection of the samples for the reported analyses should be supervised by a person experienced in performing sampling of industrial wastewater. Any specific requirements contained in the applicable analytical methods should be followed for sample containers, sample preservation, holding times, the collection of duplicate samples, etc. The time when you sample should be representative of your normal operation, to the extent feasible, with all processes which contribute wastewater in normal operation, and with your treatment system operating properly with no system upsets. Samples should be collected from the center of the flow channel, where turbulence is at a maximum, at a site specified in your present permit, or at any site adequate for the collection of a representative sample. Sampling for metals that are hardness-dependent shall also include sampling for hardness.

For pH, temperature, cyanide, total phenols, residual chlorine, oil and grease, and fecal coliform, grab samples must be used. For all other pollutants 24-hour composite samples must be used. However, a minimum of one grab sample may be taken for effluents from holding ponds, or other impoundments with a retention period of greater than 24 hours. For stormwater discharges a minimum of one to four grab samples may be taken, depending on the duration of the discharge. One grab must be taken in the first hour (*or less*) of discharge, with one additional grab (*up to a minimum of four*) taken in each succeeding hour of discharge for discharges lasting four or more hours. The Department may waive composite sampling for any discharge point for which you demonstrate that use of an automatic sampler is infeasible and that a minimum of four grab samples will be representative of your discharge.

Grab and composite samples[1] are defined as follows:

> Grab sample: An individual sample or at least 100 milliliters collected at a randomly-selected time over a period not exceeding 15 minutes.

[1]Sampling requirements are periodically reviewed in light of recent research on testing methods. Upon completion of the review, changes to sampling requirements may be made. Before starting any required sampling or submitting past sampling to the Department, be sure that you have a current copy of 40 CFR Part 136 or Chapter 160, Florida Administrative Code.

Composite sample: A combination of at least 8 sample aliquots of a least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24-hour period. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically. For GC/MS Volatile Organic Analysis (VOA), aliquots must be combined in the laboratory immediately before analysis. Four (4) (*rather than eight*) aliquots or grab samples should be collected for VOA. These four samples should be collected during actual hours of discharge over a 24-hour period and need not be flow proportioned. Only one analysis is required.

Data from samples taken in the past may be used if all data requirement are met; sampling was done no more than three years before submission; and all data are representative of the present discharge. Among the factors which would cause the data to be unrepresentative are significant changes in production level; changes in raw materials, processes, or final products; and changes in wastewater treatment. When EPA promulgates new analytical methods in 40 CFR Part 136, EPA will provide information as to when you should use the new methods to generate data on your discharges. The Department may promulgate new methods in Chapter 160, Florida Administrative Code, with the date when the new methods are to be used. Always be sure you have current copies of these two documents before you take samples or submit sampling data to the Department. If you have submitted data from past sampling, the Department may request additional information, including current quantitative data, if it is determined to be necessary to assess your discharges.

C. Analysis

You must use test methods promulgated in 40 CFR Part 136 or Chapter 160, Florida Administrative Code; however, if none has been promulgated for a particular pollutant, you may use any suitable method for measuring the level of the pollutant in your discharge if you submit a description of the method or a reference to a published method. Your description should include the sample holding time, preservation techniques, and the quality control measures which you used. If you have two or more substantially identical discharge points, you may request permission from the Department to sample and analyze only one point and submit the results of the analysis for other substantially identical points. If your request is granted by the Department, or a separate sheet attached to the application form identify which point you did test, and describe why the other points you did not test are substantially identical to the point which you did test.

D. Reporting of Intake Data

You are not required to report data under the "Intake" columns unless you wish to demonstrate your eligibility for a "net" effluent limitation for one or more pollutants, that is, an effluent limitation adjusted by subtracting the average level of the pollutant(s) present in your intake water. To demonstrate your eligibility, under the "Intake" columns report the average of the results of analyses on your intake water (*If your water is treated before use, test the water after it is treated.*), and discuss the requirements for a new limitation with the appropriate district office.

Part VII-A

Part VII-A must be completed by all applicants for all discharge points including discharges of non-contact cooling water or storm runoff. However, at your request, the Department may waive the requirement to test for one or more of these pollutants, upon a determination that available information is adequate to support issuance of the permit with less stringent reporting requirements for these pollutants. Use composite samples for all pollutants in this Part, except use grab samples for pH and temperature. See the discussion in General Instructions to item *VII* for definitions of the columns in Part A. The "Long Term Avg. Values" column (*column 2-c*) and "Max. 30-day Values" column (*column 2-b*) are not compulsory but should be filled out if data are available.

Part VII-B

Part VII-B must be completed by all applicants for all discharge points, including points containing only non-contact cooling water or storm runoff. You must report quantitative data if the pollutant(s) in question is limited in an effluent limitation either directly or indirectly but expressly through a limitation on an indicator (*e.g., use of TSS as an indicator to control the discharge of iron and aluminum*). For other discharged pollutants you must provide quantitative data or explain their presence in your discharge. The Department will consider a request to eliminate the requirement to test for pollutants for an industrial category or subcategory. Your request must be supported by data representative of the industrial category or subcategory in question. The data must demonstrate that individual testing for each applicant is unnecessary, because the facilities in the category or subcategory discharge substantially identical levels of the pollutant or discharge the pollutant uniformly at sufficiently low levels. Use composite samples for all pollutants you analyze for in this part, except use grab samples for residual chlorine, oil and grease, and fecal coliform. The "Long Term Avg. Values" column (*column 2-c*) and "Max. 30-day Values" column (*column 2-b*) are not compulsory but should be filled out if data are available.

Part VII-C

Table 2CS-2 at the end of these instructions lists 34 primary industry categories. For each discharge point, if any of your processes which contribute wastewater falls into one of those categories, you must mark "X" in "Testing Required" column (*column 2-a)* and test for (1) all of the toxic metals, cyanide, and total phenols; and (2) the organic toxic pollutants contained in Table 2CS-3 as applicable to your category. The organic toxic pollutants are listed by GC/MS fractions on pages *VII*-4 to *VII*-10 in Part *VII*-C. The inclusion of total phenols in Part VII-C is not intended to classify total phenols as a toxic pollutant. When you determine which industry category you are in to find your testing requirements, you are not determining your category for any other purpose and you are not giving up your right to challenge your inclusion in that category before your permit is issued. For all other cases (*secondary industries, non-process wastewater discharge points, and GC/MS fractions that are not required*), you must mark "X" in either the "Believed Present" column or the "Believed Absent" column for each pollutant.

You must report quantitative data as follows:

For every pollutant you know or have reason to believe is present in your discharge in concentrations of 10 ppb or greater;

For acrolein; acrylonitrile; 2,4 dinitrophenol; and 2-methyl-4,6 dinitrophenol where you expect these four pollutants to be discharged in concentrations of 100 ppb or greater; and

For every pollutant expected to be discharged in concentrations less that the thresholds specified above. For pollutants in this last category, in lieu of quantitative data, you may briefly describe the reasons the pollutant is expected to be discharged.

You are required to mark "Testing Required" for dioxin if you use or manufacture one of the following compounds:

(a) 2,4,5-trichlorophenoxy acetic acid, (2,4,5-T);
(b) 2-(2,4,5-trichlorophenoxy) propanoic acid, (Silvex, 2,4,5-TP);
(c) 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate, (Erbon);
(d) 0,0-dimethyl 0-(2,4,5-trichlorophenyl) phosphorothioate, (Ronnel);
(e) 2,4,5-trichlorophenol, (TCP); or
(f) hexachlorophene, (HCP).

If you mark "testing Required" or "Believed Present," you must perform a screening analysis for dioxin, using gas chromatography with an electron capture detector. A TCDD standard for quantitation is not required. Describe the results of this analysis in the space provided: for example, "no measurable baseline deflection at the retention time of TCDD" or "a measurable peak within the tolerances of the retention time of TCDD." The Department may require you to perform a quantitative analysis if you report a quantitative analysis if you report a positive result.

Part VII-D

List any pollutants in Table 2CS-3 that you believe to be present and explain why you believe them to be present. No analysis is required, but if you have analytical data, you must report it. For discharges of the hazardous substances listed in Table 2CS-4, you may be exempt from the reporting requirements of section 311 of the Clean Water Act. Please contact the Department for information.

Item VIII

This requirement applies to current use or manufacture of a toxic pollutant as an intermediate or final product or by-product. The Department may waive or modify the requirement if you demonstrate that it would be unduly burdensome to identify each toxic pollutant and the Department has adequate information to issue your permit. You may not claim this information as confidential; however, you do not have to distinguish between use or production of the pollutants or list the amounts.

Item IX

This item is self explanatory.

Item X

This item is self explanatory.

Item XI

This item is self explanatory.

Item XII

There are severe penalties for submitting false information on this application form. Chapter 62-620, Florida Administrative Code, requires, in addition to the certification provided by a professional engineer, a certification from the owner or responsible authority of the facility as follows:

A. For a corporation: by a responsible corporate official. For purposes of this section, a responsible corporate official means (1) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation; or (2) the manager of one or more manufacturing, production or operating facilities employing more than 250 person or have gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

B. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

C. For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official. A principal executive officer includes the chief executive officer of the agency or a senior executive officer having the responsibility for the overall operations of a principal geographic unit of the agency, for example, a regional or district administrator.

TABLE 2CS-1
CODES FOR TREATMENT UNITS

PHYSICAL TREATMENT PROCESSES			
1-A	Ammonia Stripping	1-N	Microstraining
1-B	Dialysis	1-O	Mixing
1-C	Diatomaceous Earth Filtration	1-P	Moving Bed Filters
1-D	Distillation	1-Q	Multimedia Filtration
1-E	Electrodialysis	1-R	Rapid Sand Filtration
1-F	Evaporation	1-S	Reverse Osmosis (Hyperfiltration)
1-G	Flocculation	1-T	Screening
1-H	Flotation	1-U	Sedimentation (Settling)
1-I	Foam Fractionation	1-V	Slow Sand Filtration
1-J	Freezing	1-W	Solvent Extraction
1-K	Gas-Phase Separation	1-X	Sorption
1-L	Grinding (Comminutors)	1-Y	Percolation Pond
1-M	Grit Removal		
CHEMICAL TREATMENT PROCESSES			
2-A	Carbon Adsorption	2-G	Disinfection (*Ozone*)
2-B	Chemical Oxidation	2-H	Disinfection (*Other*)
2-C	Chemical Precipitation	2-I	Electrochemical Treatment
2-D	Coagulation	2-J	Ion Exchange
2-E	Dechlorination	2-K	Neutralization
2-F	Disinfection (*Chlorine*)	2-L	Reduction
BIOLOGICAL TREATMENT PROCESSES			
3-A	Activated Sludge	3-E	Pre-Aeration
3-B	Aerated Lagoons	3-F	Spray Irrigation/Land Application

Table 2CS-1, Codes for Treatment Units contd.

3-C	Anaerobic Treatment	3-G	Stabilization Ponds
3-D	Nitrification-Denitrification	3-H	Trickling Filter
OTHER PROCESSES			
4-A	Discharge to Surface Water	4-C	Reuse/Recycle of Treated Effluent
4-B	Ocean Discharge Through Outfall	4-D	Underground Injection
SLUDGE TREATMENT AND DISPOSAL PROCESSES			
5-A	Aerobic Digestion	5-M	Heat Drying
5-B	Anaerobic Digestion	5-N	Heat Treatment
5-C	Belt Filtration	5-O	Incineration
5-D	Centrifugation	5-P	Land Application
5-E	Chemical Conditioning	5-Q	Landfill
5-F	Chlorine Treatment	5-R	Pressure Filtration
5-G	Composting	5-S	Pyrolysis
5-H	Drying Beds	5-T	Sludge Lagoons
5-I	Elutriation	5-U	Vacuum Filtration
5-J	Flotation Thickening	5-V	Vibration
5-K	Freezing	5-W	Wet Oxidation
5-L	Gravity Thickening		

TABLE 2CS-2
TESTING REQUIREMENTS FOR ORGANIC TOXIC POLLUTANTS INDUSTRY CATEGORY

INDUSTRY CATEGORY	GC/MS FRACTION[1]			
	Volatile	Acid	Base/Neutral	Pesticide
Adhesives and sealants	X	X	X	
Aluminum forming	X	X	X	
Auto and other laundries	X	X	X	X
Battery manufacturing	X		X	
Coal mining	X	X	X	X

Table 2CS-2, Testing Requirements for Organic Toxic Pollutants Industry Category contd.

Coil coating	X	X	X	
Copper forming	X	X	X	
Electric and electronic compounds	X	X	X	X
Electroplating	X	X	X	
Explosives manufacturing		X	X	
Foundries	X	X	X	
Gum and wood chemicals	X	X	X	X
Inorganic chemicals manufacturing	X	X	X	
Iron and steel manufacturing	X	X	X	
Leather tanning and finishing	X	X	X	X
Mechanical products manufacturing	X	X	X	
Nonferrous metals manufacturing	X	X	X	X
Ore mining	X	X	X	X
Organic chemicals manufacturing	X	X	X	X
Paint and ink formulation	X	X	X	X
Pesticides	X	X	X	X
Petroleum refining	X	X	X	X
Pharmaceutical preparations	X	X	X	
Photographic equipment and supplies	X	X	X	X
Plastic and synthetic materials manufacturing	X	X	X	X
Plastic processing	X			
Porcelain enameling	X		X	X
Printing and publishing	X	X	X	X
Pulp and paperboard mills	X	X	X	X
Rubber processing	X	X	X	
Soap and detergent manufacturing	X	X	X	
Steam electric power plants	X	X	X	
Textile mills	X	X	X	X
Timber products processing	X	X	X	X

[1]The pollutants in each fraction are listed in Item VII-C . X = Testing required.

TABLE 2CS-3
TOXIC POLLUTANTS AND HAZARDOUS SUBSTANCES
REQUIRED TO BE IDENTIFIED BY APPLICANTS
IF EXPECTED TO BE PRESENT

Toxic Pollutant

Asbestos

Hazardous Substances

Acetaldehyde
Allyl alcohol
Allylchloride
Amyl acetate
Aniline
Benzonitrile
Benzyl chloride
Butyl acetate
Butylamine
Captan
Carbaryl
Carbofuran
Carbon disulfide
Chlopyrifos
Coumpahos
Cresol
Crotonaldehyde
Cyclohexane
2,4-D (2,4-Dichlorophinoxyacetic acid)
Diazinon
Dicamba
Dichlobenil
Dichlone

Hazardous Substances

2,2 Dichloropropionic acid
Dichlorvos
Diethyl amine
Dimethyl amine
Dintrobenzene
Diquat
Disulfoton
Diuron
Epichlorohydrin
Ethion
Ethylene diamine
Formaldehyde
Furfural
Guthion
Isoprene
Isopropanolamine dodecylbenzenesulfonate
Kelthane
Kepone
Malathion
Mercaptodimethur
Methoxychlor
Methyl mercaptan
Methyl methacrylate
Methyl parathion
Mevinphos
Mexacarbate
Monoethyl amiine

Hazardous Substances

Monomethyl amine
Naled
Naphthenic acid
Nitrotoluene
Parathion
Phenolsulfonate
Phosgene
Propargite
Propylene oxide
Pyrethrins
Quinoline
Resorcinol
Strontium
Strychnine
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)
TDE (Terochlorodiphenyl ethane)
2,4,5-TP [2-(2,4,5-Trichlorophenoxyl)propanic acide]
Trichlorofon
Triethanolamine dodecylbenzenesulfonate
Triethylamine
Uranium
Vanadium
Vinyl acetate
Xylene
Xylenol
Zirconium

TABLE 2CS-4
HAZARDOUS SUBSTANCES

1. Acetaldehyde
2. Acetic acid
3. Acetic anhydride
4. Acetone cyanohydrin
5. Acetyl bromide
6. Acetyl chloride
7. Acrolein
8. Acrylonitrile
9. Adipic acid
10. Aldrin
11. Allyl alcohol
12. Alyll chloride
13. Aluminum sulfate
14. Ammonia
15. Ammonium acetate
16. Ammonium benzoate
17. Ammonium bicarbonate
18. Ammonium bichromate
19. Ammonium bifluoride
20. Ammonium bisulfite
21. Ammonium carbamate
22. Ammonium carbonate
23. Ammonium chloride
24. Ammonium chromate
25. Ammonium citrate
26. Ammonium fluoroborate
27. Ammonium fluoride
28. Ammonium hydroxide
29. Ammonium oxalate
30. Ammonium silicofluoride
31. Ammonium sulfamate
32. Ammonium sulfide
33. Ammonium sulfite
34. Ammonium tartrate
35. Ammonium thiocyanate
36. Ammonium thiosulfate
37. Amyl acetate
38. Aniline
39. Antimony pentachloride
40. Antimony potassium tartrate
41. Antimony tribromide
42. Antimony trichloride
43. Antimony trifluoride
44. Antimony trioxide
45. Arsenic disulfide
46. Arsenic pentoxide
47. Arsenic trichloride
48. Arsenic trioxide
49. Arsenic trisulfide
50. Barium cyanide
51. Benzene
52. Benzoic acid
53. Benzonitrile
54. Benzoyl chloride
55. Benzyl chloride
56. Beryllium chloride
57. Beryllium fluoride
58. Beryllium nitrate
59. Butylacetate
60. n-Butylphthalate
61. Butylamine
62. Butyric acid
63. Cadmium acetate
64. Cadmium bromide
65. Cadmium chloride
66. Calcium arsenate
67. Calcium arsenite
68. Calcium carbide
69. Calcium chromate
70. Calcium cyanide
71. Calcium dodecylbenzenesulfonate
72. Calcium hypochlorite
73. Captan
74. Carbaryl
75. Carbofuran
76. Carbon disulfide
77. Carbon tetrachloride
78. Chlordane
79. Chlorine
80. Chlorobenzene
81. Chloroform
82. Chloropyrifos
83. Chlorosulfonic acid
84. Chromic acetate
85. Chromic acid
86. Chromic sulfate
87. Chromous chloride
88. Cobaltous bromide
89. Cobaltous formate
90. Cobaltous sulfamate
91. Coumaphos
92. Cresol
93. Crotonaldehyde
94. Cupric acetate
95. Cupric acetoarsenite
96. Cupric chloride
97. Cupric nitrate
98. Cupric oxalate
99. Cupric sulfate
100. Cupric sulfate ammoniated
101. Cupric tartrate
102. Cyanogen chloride
103. Cyclohexane
104. 2,4-D acid (2,4-Dichlorophenoxyacetic acid)
105. 2,4-D esters (2,4-Dichlorophenoxyacetic acid esters)
106. DDT
107. Diazinon
108. Dicamba
109. Dichlobenil
110. Dichlone
111. Dichlorobenzene
112. Dichloropropane
113. Dichloropropene
114. Dichloropropene-Dichloropropane mix
115. 2,2-Dichloropropionic acid
116. Dichlorvos
117. Dieldrin
118. Diethylamine
119. Dimethylamine
120. Dinitrobenzene
121. Dinitrophenol
122. Dinitrotoluene
123. Diquat
124. Disulfoton
125. Diuron
126. Dodecylbenzesulfonic acid
127. Endosulfan
128. Endrin
129. Epichlorohydrin
130. Ethion
131. Ethylbenzene
132. Ethylenediamine
133. Ethylene dibromide
134. Ethylene dichloride
135. Ethylene Diaminetetracetic acid (EDTA)
136. Ferric ammonium citrate
137. Ferric ammonium oxalate
138. Ferric chloride
139. Ferric fluoride
140. Ferric nitrate

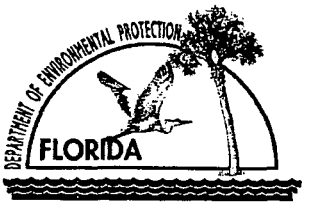
HAZARDOUS SUBSTANCES (contd.)

141. Ferric sulfate
142. Ferrous ammonium sulfate
143. Ferrous chloride
144. Ferrous sulfate
145. Formaldehyde
146. Formic acid
147. Fumaric acid
148. Furfural
149. Guthion
150. Heptachlor
151. Hexachlorocyclopentadiene
152. Hydrochloric acid
153. Hydrofluoric acid
154. Hydrogen cyanide
155. Hydrogen sulfide
156. Isoprene
157. Isopropanolamine dodecylbenzenesulfonate
158. Kelthane
159. Kepone
160. Lead acetate
161. Lead arsenate
162. Lead chloride
163. Lead fluoborate
164. Lead fluorite
165. Lead iodide
166. Lead nitrate
167. Lead stearate
168. Lead sulfate
169. Lead sulfide
170. Lead thiocyanate
171. Lindane
172. Lithium chromate
173. Malathion
174. Maleic acid
175. Maleic anhydride
176. Mercaptodimethur
177. Mercuric cyanide
178. Mercuric nitrate
179. Mercuric sulfate
180. Mercuric thiocyanate
181. Mercurous nitrate
182. Methoxychlor
183. Methyl mercaptan
184. Methyl methacrylate
185. Methyl parathion
186. Mevinphos
187. Mexacarbate
188. Monoethylamine
189. Monomethylamine
190. Naled
191. Naphthalene
192. Naphthenic acid
193. Nickel ammonium sulfate
194. Nickel chloride
195. Nickel hydroxide
196. Nickel nitrate
197. Nickel sulfate
198. Nitric acid
199. Nitrobenzene
200. Nitrogen dioxide
201. Nitrophenil
202. Nitrotoluene
203. Paraformaldehyde
204. Parathion
205. Pentachlorophenol
206. Phenol
207. Phosoene
208. Phosphoric acid
209. Phosphorus
210. Phosphorus oxychloride
211. Phosphorus pentasulfide
212. Phosphorus trichloride
213. Polychlorinated biphenyls (PCB)
214. Potassium arsenate
215. Potassium arsenite
216. Potassium bichromate
217. Potassium chromate
218. Potassium cyanide
219. Potassium hydroxide
220. Potassium permanganate
221. Propargite
222. Propionic acid
223. Propionic anhydride
224. Propylene oxide
225. Pyrethrins
226. Quinoline
227. Resorcinol
228. Selenium oxide
229. Silver nitrate
230. Sodium
231. Sodium arsenate
232. Sodium arsenite
233. Sodium bichromate
234. Sodium bifluoride
235. Sodium bisulfite
236. Sodium chromate
237. Sodium cyanide
238. Sodium dodecylbenzensulfonate
239. Sodium fluoride
240. Sodium hydrosulfide
241. Sodium hydroxide
242. Sodium hypochlorite
243. Sodium methylate
244. Sodium nitrate
245. Sodium phospate (dibasic)
246. Sodium phosphate (tribasic)
247. Sodium selenite
248. Strontium chromate
249. Strychnine
250. Styrene
251. Sulfuric acid
252. Sulfur monochloride
253. 2,4,5-T acid (2,4,5-Trichlorophenoxy acetic acid)
254. 2,4,5-T amines (2,4,5-Trichlorophenoxy acetic cid amines)
255. 2,4,5-T esters (2,4,5-Trichlorophenoxy acetic cid esters)
256. 2,4,5-T salts (2,4,5-Trichlorophenoxy acetic acid salts)
257. 2,4,5-TP acid (2,4,5-Trichlorophenoxy propanoic acid)
258. 2,4,5-TP acid esters (2,4,5-Trichlorophenoxy propanoic acid esters)
259. TDE (Tetrachlorodiphenyl ethane)
260. Tetraethyl lead
261. Tetraethyl pyrophosphate
262. Thallium sulfate
263. Toluene
264. Toxaphene
265. Trichlorofon
266. Trichloroethylene
267. Trichlorophenol
268. Triethanolamine dodecylbenzenesulfonate
269. Triethylamine
270. Trimethylamine
271. Uranyl acetate
272. Uranyl nitrate
273. Vanadium pentoxide
274. Vanadyl sulfate
275. Vinyl acetate
276. Vinylidene chloride
277. Xylene
278. Xylenol
279. Zinc acetate
280. Zinc ammonium chloride

HAZARDOUS SUBSTANCES (contd.)

281. Zinc borate
282. Zinc bromide
283. Zinc carbonate
284. Zinc chloride
285. Zinc cyanide
286. Zinc fluoride
287. Zinc formate
288. Zinc hydrosulfite
289. Zinc nitrate
290. Zinc phenolsulfonate
291. Zinc phosphide
292. Zinc silcofluoride
293. Zinc sulfate
294. Zirconium nitrate
295. Zirconium potassium fluoride
296. Zirconium sulfate
297. Zirconium tetrachloride

FORM
2CS



WASTEWATER APPLICATION FOR PERMIT TO DISCHARGE PROCESS WASTEWATER FROM NEW OR EXISTING INDUSTRIAL WASTEWATER FACILITIES TO SURFACE WATERS

Facility I.D. Number: FL0002208

Please print or type information in the appropriate areas.

I OUTFALL LOCATION For each outfall, list the X,Y coordinates and the name of the receiving water.
(latitude/longitude to the nearest 15 seconds)

A. Outfall No. (List)	B. Latitude			C. Longitude			D. Name of Receiving Water
	Deg.	Min.	Sec.	Deg.	Min.	Sec.	
D-001	27	21	05	80	14	26	Atlantic Ocean
I-003	27	20	57	80	14	48	Plant Discharge Canal
I-005	27	20	59	80	14	43	Plant Discharge Canal
I-007	27	20	52	80	14	41	Plant Intake Canal
I-008	27	20	36	80	14	28	Plant Intake Canal

II OUTFALL DESIGN

A. Outfall No. (List)	B. Design Configuration and Construction Materials	C. Distance from shore	D. Diameter	E. Elevation of Discharge Invert (MSL)	F. Receiving Water Depth at POD (MSL)
D-001	Y-Port Diffuser Reinforced Concrete Pipe Multi-Port Diffuser Rienforced Concrete Pipe	1500 ft 1959 - 3375 ft	12 ft 16 ft	-36 ft -27 to -38 ft	-42 ft +/- -33 to -44 ft +/-
I-003	Low Volume Waste-Liquid Radiation Waste Stainless Steel Pipe	<75 ft from canal shore	3.5 in	N/A	-12 ft +/-
I-005	Low Volume Waste-Steam Generator Blowdown Two Stainless Steel Pipe Unit 1&2	<75 ft from canal shore	4 in	N/A	-12 ft +/-
I-007	Screen Wash Water Two concrete sluiceways Unit 1&2	On canal Shoreline	3 ft	+9 ft	-30 ft +/-
I-008	South East Evaporation/ Percolation Basin	On canal Shoreline	Pipe Drain	N/A	-30 ft

Facility I.D. Number: FL 0002208

III RECEIVING WATER INFORMATION

For each surface water that will receive effluent, supply the following information:

A. Name of Receiving Water	B. Check One		C. Classification (See Ch. 62-302, F.A.C.)	D. Type of Receiving Water (canal, river, lake, etc.)
	Fresh	Salt or Brackish		
Atlantic Ocean	☐	☒	III-Marine	Open Waters
	☐	☐		
	☐	☐		
	☐	☐		
	☐	☐		
	☐	☐		

E. Minimum 7-day 10-year low flow of the receiving water at each outfall (if appropriate).

F. Identify and describe the flow of effluent from each outfall to a major body of water. A suitably marked map or aerial photograph may be used.

G. Do you request a mixing zone under Rule 62-4.244, F.A.C.? If yes, for what parameters or pollutants?

IV FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of:

1. All operations contributing wastewater to the effluent; including process wastewater, sanitary wastewater, cooling water, and stormwater runoff;

2. The average flow contributed by each operation; and

3. The treatment received by the wastewater.

Use the space on the next page. Continue on additional sheets, if necessary.

(1)	(2) Operation(s) Contributing Flow		(3) Treatment		
Outfall No. (List)	(a) Operation (list)	(b) Avg. Flow & Units	(a) Description	(b) List Code from Table 2CS-1	
D-001	Units 1 & 2 Once-Through Cooling	1487 MGD	Ocean Discharge	4-B	
	Water and Auxiliary Cooling Water				
I-003	Low Volume Waste	0.004 MGD	Microstraining	1-N	
	Liquid Radiation Waste		Ion Exchange	2-J	
			Settling	1-U	
			Neutralization	2-K	
I-005	Low Volume Waste	0.011 MGD	Ion Exchange	2-J	
	Steam Generator Blowdown		Settling	1-U	
			Microstraining	1-N	
			Neutralization	2-K	
I-007	Intake Screen Wash	0.011 MGD			
I-008	SE Evaporation/Percolation Basin	0.019 MGD	Sedimentation (Settling)	1-U	
			Evaporation	1-F	
			Percolation	1-Y	
I-06B/I-06C	Former Fuel Oil Storage Area Runoff/	.055 MGD			
	Non-Industrial Storm Water to				
	Mangrove Area				

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?
☒ Yes (complete the following table) ☐ No (go to D. below)

(1) Outfall No. (List)	(2)Operation(s) Contributing Flow(List)	(3) Frequency		(4) Flow				
		(a) Days per Week (specify avg.)	(b) Months per Yr. (specify avg.)	(a) Flow Rate (in mgd)		(b) Total Volume (specify with units)		(c) Duration (in days)
				Long Term Avg.	Max. Daily	Long Term Avg.	Max. Daily	
I-003	Low Volume -Liquid Radiation Waste	1	12	0.024	0.032	0.024 MGD	0.032 MG	<1
I-005	Low Volume Waste- Steam Generator Blowdown	1/4 wks	12	0.365	0.776	0.365 MGD	0.776 MG	<1
I-007	Intake Screen Wash Water	7	12	0.254	3.053	0.254 MGD	3.053 MG	<1
I-008	SE Evaporation/Percolation Basin	N/A	1	1.656	2.736	6.623 MGY	2.736 MG	4

D. Describe practices to be followed to ensure adequate wastewater treatment during emergencies such as power loss and equipment failures causing shutdown of pollution abatement equipment of the proposed/permitted facilities.

E. List the method(s) and location(s) of flow measurement.

V PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

☒ Yes (complete Item V-B) ☐ No (go to Section VI)

B. Are the limitations in the applicable guideline expressed in terms of production (or other measure of operation)?

☐ Yes (complete Item V-C) ☒ No (go to Section VI)

C. If you answered "yes" to Item V-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. AVERAGE DAILY PRODUCTION			2. Affected Outfalls
a. Quantity per Day	b. Units of Measure	c. Operation, Product, Materials, Etc. (specify)	(list outfall nos.)

Facility I.D. Number: FL0002208

VI IMPROVEMENTS

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement order, enforcement compliance schedule letter, stipulations, court orders, and grant or loan conditions.

☐ Yes (complete the following table) ☒ No (go to Item VI-B)

1. Identification of Condition, Agreement, Etc.	2. Affected Outfalls		3. Brief Description of Project	4. Final Compliance Date	
	a. No.	b. Source of Discharge		a. Required	B. Projected

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs (or other environmental projects which may affect your discharges) you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction.

☐ Mark "X" if description of additional control programs is attached.

VII INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding--Complete one set of tables for each outfall -- Annotate the outfall number in the space provided. NOTE: Tables VII-A, VII-B, and VII-C are included on separate sheets number VII-1 through VII-9.

D. Use the space below to list any of the pollutants listed in Table 2CS-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. Pollutant	2. Source	1. Pollutant	2. Source
Dimethylamine	1-005 Steam Gen. Blowdown		

Facility I.D. Number: FL0002208

VIII POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item VII-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or by-product?

☐ YES (list all such pollutants below) ☒ NO (go to IX)

IX BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☒ YES (identify the test(s) and describe their purposes below) ☐ NO (go to Section X)

Ninety-six hour static renewal definitive toxicity tests were conducted as required by the current NPDES - FL0002208 Permit at D-001 on October 20, 2003. These test were conducted using Mysidopsis bahia and Menidia beryllina.

FDEP preformed similar test on April 5, 2004 as a part of the five year compliance performance testing.

The results of both were satisfactory.

X CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item VII performed by a contract laboratory or consulting firm?

☒ YES (list the name, address, telephone number, and certification number of, and pollutants analyzed by each such laboratory or firm below) ☐ NO (go to Section XI)

A. Name	B. Address	C. Telephone (area code & no.)	D. Pollutants Analyzed (list)
FPL Central Lab #E56078	6001 A Village Blvd. WPB, FL	561-640-2010	TOC, Cyanide, TKN, Phenols, BOD, Color, Surfactants (All but I-003)
General Engineering Lab, LLC #E87156	2040 Savage Rd. Charleston, SC 29407	843-556-8171	All analyses for I-003
Harbor Branch Lab #E93080	5600 US Hwy 1 Ft. Pierce, FL	772-465-2400	Fecal Coliforms

Facility I.D. Number: FL0002208

XI CONNECTION TO REGIONAL POTW

A. Indicate the relationship between this project and area regional planning for wastewater treatment. List steps to be taken for this industrial wastewater facility to become part of an area-wide wastewater treatment system.

The majority of the FPL, St. Lucie Plant is connected to the South Hutchinson Island Wastewater Treatment Facility, although there still exist a small number of septic tanks.

XII-A CERTIFICATIONS FOR NEW OR MODIFIED FACILITIES

This is to certify the engineering features of this pollution control project have been designed by me and found to be in conformity with sound engineering principles, applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules of the Department. It is also agreed that the undersigned, if authorized by the owner, will furnish the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Harold A Frediani, Jr

Signature

Golder Associates Inc. Cert. of Auth. No: 1670

Company Name

Harold A. Frediani, Jr.

Name (Please type)

Address 3730 Chamblee Tucker Road

Atlanta, Georgia, 36394

(Affix Seal)

Florida Registration No.: 36394

Telephone No:: 770-992-2533

Date 3/4/2010

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Richard L. Anderson

Name & Official Title (Please type or print)

Richard L. Anderson

Signature

772-467-7100

Telephone No. (area code & No.)

03/17/2010

Date Signed

XII-B CERTIFICATIONS FOR PERMIT RENEWALS

This is to certify the engineering features of this pollution control project have been examined by me and found to be in conformity with sound engineering principles, applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules of the Department.

Signature	Company Name
	Address
Name (please type)	
(Affix Seal)	Florida Registration No.:
	Telephone No::
	Date

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name & Official Title (Please type or print)	Signature
Telephone No. (area code & No.)	Date Signed

Facility ID. Number: FL0002208 Outfall No. D-001

PLEASE PRINT OR TYPE ONLY: You may report some or all of this information on separate sheets instead of completing these pages. Use the same format.
SEE INSTRUCTIONS.

VII. INTAKE AND EFFLUENT CHARACTERISTICS

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. Pollutant	2. Effluent							3.. Units		4. Intake (optional)		
	a. Max. Daily Value		b. Max. 30-day Value		c. Annual Avg. Value		d. No. of Analyses	a. Concentration	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
a Carbonaceous Biochemical Oxygen Demand (CBOD)												
b. Chemical Oxygen Demand (COD)												
c. Total Organic Carbon (TOC)												
d. Total Suspended Solids (TSS)												
e. Total Nitrogen (as N)												
f. Total Phosphorus (as P)												
g. Ammonia (as N)												
h. Flow - actual or projected	Value		Value		Value					Value		
i. Flow - design	Value		Value		Value					Value		
j. Specific Conductivity	Value		Value		Value					Value		
k. Temperature (winter)	Value		Value		Value			°C		Value		
l. Temperature (summer)	Value		Value 115 deg F		Value			°C		Value		
m. . pH	Min.	Max	Min.	Max.				STANDARD UNITS				

PART B - Mark "X" in column 2a for each pollutant you know or have reason to believe is present. Mark "X" in column 2b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additonal details and requirements.

1. Pollutant and CAS No. (if available)	2. Mark "X"		3. Effluent							4. Units		5. Intake (optional)		
	a. believed present	b. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
			(1) Conc...	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
a. Bromide (24949-67-9)	☐	☐												
b. Chlorine, Total Residual	☐	☐												
c. Color	☐	☐												
d. Fecal Coliform	☐	☐												
e. Fluoride (16984-48-8)	☐	☐												
f. Nitrate-Nitrite (as N)	☐	☐												

: Item VII-B Contd.

Facility ID. Number _____ Outfall No. _____

1. Pollutant and CAS No. (if available)	2. Mark "X"		3. Effluent						d. No. of Analyses	4. Units		5. Intake (optional)		
	a .believed present	b. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)			a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
			(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
g. Nitrogen, Total Organic (as N)	☐	☐												
h. Oil and grease	☐	☐												
i. Phosphorus, Total (as P) (7723-14-0)	☐	☐												
j. Radioactivity														
(1) Alpha, Total	☐	☐												
(2) Beta, Total	☐	☐												
(3) Radium, Total	☐	☐												
(4) Radium 226, Total	☐	☐												
k. Sulfate (as SO_4) (14808-79-8)	☐	☐												
l. Sulfide (as S)	☐	☐												
m. Sulfite (as SO_3) (14265-45-3)	☐	☐												
n. Surfactants	☐	☐												
o. Aluminum, Total (7429-90-5)	☐	☐												
p. Barium, Total (7440-39-3)	☐	☐												
q. Boron, Total (7440-42-8)	☐	☐												
r. Cobalt, Total (7440-48-4)	☐	☐												
s. Iron, Total (7439-89-6)	☐	☐												
t. Maagnesium, Total (7439-95-4)	☐	☐												
u. Molybdenum, Total (7439-98-7)	☐	☐												
v. Manganese, Total (7439-96-5)	☐	☐												
w. Tin, Total (7440-31-5)	☐	☐												
x. Titanium, Total (7440-32-6)	☐	☐												

Facility ID. Number: _____ Outfall No. _____

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2a for all GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2a (secondary industries, non-process wastewater outfalls, and non-required GC/MS fractions), mark "X" in column 2b for each pollutant you know or have reason to believe is present. Mark "X" in column 2c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one anlysis for that pollutnat if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4,dinitrophenol, or 2-methyl-4,6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

1. Pollutant and CAS No. (if available)	2. Mark "X"			3. Effluent							4. Units		5. Intake (optional)		
	a. testing required	b. believed present	c. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
				(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)	☐	☐	☐												
2M. Arsenic, Total (7723-14-0)	☐	☐	☐												
3M. Beryllium, Total (7440-41-7)	☐	☐	☐												
4M. Cadmium, Total (7440-43-9)	☐	☐	☐												
5M. Chromium, Total (7440-47-3)	☐	☐	☐												
6M. Copper, Total (7440-50-8)	☐	☐	☐												
7M. Lead, Total (7439-92-1)	☐	☐	☐												
8M. Mercury, Total (7439-97-6)	☐	☐	☐												
9M. Nickel, Total (7440-02-0)	☐	☐	☐												
10M. Selenium, Total (7782-49-2)	☐	☐	☐												
11M. Silver, Total (7440-22-4)	☐	☐	☐												
12M. Thallium, Total (7440-28-0)	☐	☐	☐												
13M. Zinc, Total (7440-66-6)	☐	☐	☐												
14M. Cyanide, Total (57-12-5)	☐	☐	☐												
15M. Phenols, Total	☐	☐	☐												
DIOXIN															
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)	☐	☐	☐												
GC/MS FRACTION-VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	☐	☐	☐												
2V. Acrylonitrile (107-13-1)	☐	☐	☐												

Facility ID. Number: _____ Outfall No. _____

1. Pollutant and CAS No. (if available)	2. Mark "X"			3. Effluent							4. Units		5. Intake (optional)		
	a. testing required	b. believed present	c. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
				(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
GC/MS FRACTION - VOLATILE COMPOUNDS (continued)															
3V. Benzene (71-43-2)	☐	☐	☐												
4V. Bis (Chloromethyl) Ether (542-88-1)	☐	☐	☐												
5V. Bromoform (75-25-2)	☐	☐	☐												
6V. Carbon Tetrachloride (56-23-5)	☐	☐	☐												
7V Chlorobenzene (108-90-7)	☐	☐	☐												
8V. Chlorodi-bromomethane (124-8-1)	☐	☐	☐												
9V. Chloroethane (74-00-3)	☐	☐	☐												
10V. 2-Chloro-ethylvinyl Ether (110-75-8)	☐	☐	☐												
11V. Chloroform (67-86-3)	☐	☐	☐												
12V. Dichloro-bromomethane (75-24-4)	☐	☐	☐												
13V. Dichloro-difluoromethane (75-71-8)	☐	☐	☐												
14V. 1,1-Dichloroethane (75-34-3)	☐	☐	☐												
15V. 1,2-Dichloroethane (107-06-2)	☐	☐	☐												
16V. 1,1-Dichloroethylene (75-35-4)	☐	☐	☐												
17V. 1,2,-Dichloropropane (78-87-5)	☐	☐	☐												
18V. 1,3-Dichloropropylene (542-75-6)	☐	☐	☐												
19V. Ethylbenzene (100-41-4)	☐	☐	☐												
20V. Methyl Bromide (74-83-9)	☐	☐	☐												
21V. Methyl Chloride (74-87-3)	☐	☐	☐												
22V. Methylene Chloride (74-98-2)	☐	☐	☐												
23V. 1,1,2,2-Tetra-chloroethane (79-34-5)	☐	☐	☐												
24V. Tetrachloroethylene (127-18-4)	☐	☐	☐												

Facility ID. Number: _____ Outfall No. _____

1. Pollutant and CAS No. (if available)	2. Mark "X"			3. Effluent							4. Units		5. Intake (optional)		
	a. testing required	b. believed present	c. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
				(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
GC/MS FRACTION - VOLATILE COMPOUNDS (continued)															
25V. Toluene (108-88-3)	☐	☐	☐												
26V. 1,2-Trans-Dichloroethylene (156-60-5)	☐	☐	☐												
27V. 1,1,2-Trichloroethane (71-55-6)	☐	☐	☐												
28V. 1,1,2-Trichloroethane (79-00-5)	☐	☐	☐												
29V. Trichloroethylene (79-01-6)	☐	☐	☐												
30V. Trichloro-fluoromethane (75-69-4)	☐	☐	☐												
31V. Vinyl Chloride (75-01-4)	☐	☐	☐												
GC/MS FRACTION - ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)	☐	☐	☐												
2A. 2,4-Dichlorophenol (120-83-2)	☐	☐	☐												
3A. 2,4-Dimethylphenol (105-67-9)	☐	☐	☐												
4A. 4,6-Dinitro-O-Cresol (534-53-1)	☐	☐	☐												
5A. 2,4-Dinitrophenol (51-28-5)	☐	☐	☐												
6A. 2-Nitrophenol (88-75-5)	☐	☐	☐												
7A. 4-Nitrophenol (100-02-7)	☐	☐	☐												
8A P-Chloro-M-Cresol (59-50-7)	☐	☐	☐												
9A Pentachlorophenol (87-86-5)	☐	☐	☐												
10A Phenol (108-95-2)	☐	☐	☐												
11A 2,4,5-Trichloro-phenol (88-06-2)	☐	☐	☐												
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (63-32-9)	☐	☐	☐												
2B. Acenaphtylene (208-96-8)	☐	☐	☐												
3B. Anthracene (120-12-7)	☐	☐	☐												
4B. Benzidine (92-87-5)	☐	☐	☐												

Facility ID. Number: _____ Outfall No. _____

1. Pollutant and CAS No. (if available)	2. Mark "X"			3. Effluent							4. Units		5. Intake (optional)		
	a. testing required	b. believed present	c. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
				(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
5B. Benzo *(a)* Anthracene (56-55-3)	☐	☐	☐												
6B. Benzo *(a)* Pyrene (50-32-8)	☐	☐	☐												
7B. 3,4-Benzo-fluoranthene (205-99-2)	☐	☐	☐												
8B. Benzo *(ghi)* Perylene (191-24-2)	☐	☐	☐												
9B. Benzo *(k)* Fluoranthene (207-08-9)	☐	☐	☐												
10B. Bis *(2-Chloroethoxy)* Methane (111-91-1)	☐	☐	☐												
11B. Bis *(2-chloroethyl)* Ether (111-44-4)	☐	☐	☐												
12B. Bis *(2-Chloroisopropyl)* Ether (102-60-1)	☐	☐	☐												
13B. Bis *(2-Ethylhexyl)* Phthalate (117-81-7)	☐	☐	☐												
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	☐	☐	☐												
15B Butyl Benzyl Phthalate (84-68-7)	☐	☐	☐												
16B. 2-Chloronaphthalene (91-58-7)	☐	☐	☐												
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	☐	☐	☐												
18B. Chrysene (218-01-9)	☐	☐	☐												
19B. Dibenzo *(a,h)* Anthracene (53-70-3)	☐	☐	☐												
20B. 1,2-Dichlorobenzene (95-50-1)	☐	☐	☐												
21B. 1,3-Dichlorobenzene (541-73-1)	☐	☐	☐												
22B. 1,4-Dichlorobenzene (106-46-7)	☐	☐	☐												
23B. 3,3'-Dichlorobenzidine (92-94-1)	☐	☐	☐												
24B. Diethyl Phthalate (84-66-2)	☐	☐	☐												
25B. Dimethyl Phthalate (131-11-3)	☐	☐	☐												
26B. Di-N-Butyl Phthalate (84-74-2)	☐	☐	☐												
27B. 2,4-Dinitrotoluene (121-14-2)	☐	☐	☐												
28B. 2,6-Dinitrotoluene (606-20-2)	☐	☐	☐												

Facility ID. Number: _____ Outfall No. _____

1. Pollutant and CAS No. (if available)	2. Mark "X"			3. Effluent							4. Units		5. Intake (optional)		
	a. testing required	b. believed present	c. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
				(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
29B. Di-N-Octyl Phthalate (117-84-0)	☐	☐	☐												
30B. 1,2-Diphenylhydrazine *(as Azobenzene)* (122-66-7)	☐	☐	☐												
31B. Fluoranthene (206-44-0)	☐	☐	☐												
32B. Fluorene (86-73-7)	☐	☐	☐												
33B. Hexachlorobenzene (118-74-1)	☐	☐	☐												
34B. Hexachlorobutadiene (87-68-3)	☐	☐	☐												
35B. Hexachlorocyclopentadiene (77-47-4)	☐	☐	☐												
36B. Hexachloroethane (67-72-1)	☐	☐	☐												
37B. Indeno *(1,2,3-cd)* Pyrene (193-39-5)	☐	☐	☐												
38B. Isophorone (78-59-1)	☐	☐	☐												
39B. Naphthalene (91-20-3)	☐	☐	☐												
40B. Nitrobenzene (98-95-9)	☐	☐	☐												
41B N-Nitrosodimethylamine (62-75-9)	☐	☐	☐												
42B. N-Nitrosodi-N-Propylamine (621-64-7)	☐	☐	☐												
43B. N-Nitro-sodiphenylamine (86-30-6)	☐	☐	☐												
44B Phenanthrene (85-01-8)	☐	☐	☐												
45B. Pyrene (129-00-0)	☐	☐	☐												
46B. 1,2,4-Trichlorobenzene (120-82-1)	☐	☐	☐												
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)	☐	☐	☐												
2P. -BHC (319-84-6)	☐	☐	☐												
3P -BHC (319-85-7)	☐	☐	☐												
4P. -BHC (58-89-9)	☐	☐	☐												
5P. -BHC (319-86-8)	☐	☐	☐												

Facility ID. Number: _____ Outfall No. _____

1. Pollutant and CAS No. (if available)	2. Mark "X"			3. Effluent							4. Units		5. Intake (optional)		
	a. testing required	b. believed present	c. believed absent	a. Maximum Daily Value		b. Max. 30-day Value (if available)		c. Long Term Avg. Value (if available)		d. No. of Analyses	a. Conc.	b. Mass	a. Long Term Avg. Value		b. No. of Analyses
				(1) Conc.	(2) Mass	(1) Conc.	(2) Mass	(1) Conc.	(2) Mass				(1) Conc.	(2) Mass	
6P. Chlordane (57-74-9)	☐	☐	☐												
7P. 4,4'-DDT (50-29-3)	☐	☐	☐												
8P. 4,4'-DDE (72-55-9)	☐	☐	☐												
9P. 4,4'-DDD (72-54-8)	☐	☐	☐												
10P. Dieldrin (60-57-1)	☐	☐	☐												
11P. -Endosulfan (115-29-7)	☐	☐	☐												
12P. -Endosulfan (115-29-7)	☐	☐	☐												
13P. Endosulfan Sulfate (1031-07-8)	☐	☐	☐												
14P. Endrin (72-20-8)	☐	☐	☐												
15P. Endrin Aldehyde (7421-92-4)	☐	☐	☐												
16P. Heptachlor (76-44-8)	☐	☐	☐												
17P. Heptachlor Epoxide (1024-57-3)	☐	☐	☐												
18P. PCB-1242 (53469-21-9)	☐	☐	☐												
19P. PCB-1254 (11097-69-1)	☐	☐	☐												
20P. PCB-1221 (11104-28-2)	☐	☐	☐												
21P. PCB-1232 (11141-16-5)	☐	☐	☐												
22P. PCB-1248 (12672-29-6)	☐	☐	☐												
23P. PCB-1260 (11096-82-5)	☐	☐	☐												
24P. PCB-1016 (12674-11-2)	☐	☐	☐												
25P. Toxaphene (8001-35-2)	☐	☐	☐												

Antidegradation Analysis

Antidegradation Considerations - The Florida Power & Light Company St. Lucie Plant submits that all elements of the Department's antidegradation rule (Section 62-4.242, F.A.C.) are amply met in the context of this application for a permit revision to change the current instantaneous temperature limit of 113°F to a monthly average limit of 115°F; and to change the current instantaneous maximum temperature rise above ambient from 30°F to a monthly average temperature rise above ambient of 30°F.

- *The proposed project is important to and is beneficial to the public health, safety, and welfare.*

  The St. Lucie Plant provides electricity, which is an essential public amenity, and also contributes substantially to employment and the tax base in the region. Rule 62-302.300(6), F.A.C. confirms that "private activities conducted for private purposes may be...in the public interest." On January 7, 2008, the Florida Public Service Commission issued an affirmative need determination order for the expansion of the St. Lucie Plant; Order No. PSC-08-0021-FOF-EI. Under Florida Statute 403.519, the Commission's determination of need creates a presumption of public need and necessity for the St. Lucie expansion (a.k.a. Extended Power Uprate or EPU). Additionally, the St. Lucie Plant EPU is expected to result in hundreds of millions of dollars in fuel cost savings over the life of the "uprated" plant while preventing the emission of about 500,000 tons per year of CO_2 into the atmosphere. The proposed permit revision would result in maximizing the environmental benefits and fuel cost savings of the EPU. Accordingly, the St. Lucie Plant permit revision application clearly is associated with a project that is important and beneficial to the public health, safety, and welfare.

- *There will be no adverse impacts on the environment or designated uses.*

  Regarding the second and third prongs of the antidegradation test (Rule 62-4.242(1)(b)2. and 3.), the St. Lucie Plant is aware of no basis for expecting adverse environmental consequences to the aquatic environment or impairment to recreational values or marine productivity as a result of this permit revision. To further address this issue, FPL has enclosed as Attachment 1, the "Thermal Discharge Study" that was prepared by Golder Associates Inc. (Golder) in January 2010. In its study, Golder conducted modeling to assess potential thermal plume impacts associated with a maximum discharge temperature of 115 ° F compared to the currently permitted limit of 113 ° F. Golder also reviewed historical data on benthic organism communities in the area of the plant cooling water discharge to predict whether there are likely to be measurable changes associated with the proposed temperature increase. Golder concluded:

  > "The difference in the extent of the thermal plume attributable to the increase in discharge temperature from 113°F to 115°F is relatively small. For the Y-nozzle diffuser, the increase ranges from about 2,000 cubic feet at the highest temperature (111°F) to about 1,000 cubic feet at the lowest temperature (96°F). For the multiport diffuser, the range is on the order of

50 cubic feet at 111°F to 350 cubic feet at 96°F. The heated water exiting the diffusers at 115°F would be cooled down to 96°F within about 12.5 seconds. The potential decrease in dissolved oxygen concentration due to the increase in discharge temperature is on the order of about 0.01 milligrams per liter.

The proposed change in the thermal discharge will increase the temperature of a small volume of the Atlantic Ocean water column in the near vicinity of the St. Lucie Plant discharge. The proposed thermal discharge is expected to quickly mix with the Ocean waters and is expected to interact with the bottom sediments in a similar manner as the currently permitted discharge; the heated water will float as it mixes. Fish and other motile marine organisms are able to avoid heated discharges by swimming away from their source. Fish have also been observed to be attracted to heated discharges without measurable harm.

Benthic organism communities are sedentary and cannot avoid the changes in water temperature. Based on the thermal modeling conducted, no measurable change in thermal exposure is anticipated for benthic organisms because the plume is buoyant and the model predicts that it will float away from the sediments as it mixes. The multiport discharges are located from 7 to 9 feet above sea bottom, allowing the water to rise as it mixes with minimal interaction with benthic organisms. The Y-nozzle discharges are at the sea bottom, but rise while mixing with ambient water within the area of the sea bottom that was excavated for the Y-nozzle diffuser installation.

Golder concludes that the potential biological impacts of the proposed discharge temperature change are minimal and not measurable."

- *SWIM Plan Consistency*

The St. Lucie Plant EPU permit revision proposal is not inconsistent with any provisions of any South Florida Water Management District SWIM Plan.

- *Reuse or Other Discharge Location*

There is no alternative discharge location or feasible alternative that is a viable or environmentally preferable option (See Options 1, 2 and 3 below). Accordingly, this part of the test is satisfied.

Option 1. It is not feasible to increase the circulating water flow

Operational Impacts:
FPL's initial application for revision Permit FL0002208 for the EPU was approved by FDEP on March 11. 2009. At that time, FPL confirmed that it had no intention of increasing circulating water flow.

Based on FPL's evaluation of recent intake temperature data, consistently maintaining the once through cooling water discharge temperature below a monthly average 113°F after the EPU Uprate would require a reduction of 3°F in the cooling water temperature rise (Delta-T). Accomplishing this through flow enhancement would require an increase in the total cooling water flow (per Unit) from 490,600 gpm to 547,200 gpm (about 10% increased flow), and, commensurately an increase in pump head from 40 ft to 48 ft also would be required. Motor horsepower (BHP) would increase from 1475 BHP, to 2000 BHP thus requiring four new circulating water pumps for each Unit. Other cooling water system components would need to be reviewed to determine if additional modifications would be required, including intake velocity caps, travelling screens, pump suction structure (sizing), chlorination system capacity, discharge canal water level (a dam may be required to prevent road flooding), etc. The increased electrical load of approximately 1.6 MWe per Unit would require two new Unit Electrical Substations (one per Unit). New motor cables and duct banks are required. The estimated cost of increasing the circulating water flow would be between $80 and $120 million.

Environmental Impacts:
The 10% increase in flow would result in a significant increase in the rate of entrainment of planktonic organisms.

In addition, the parasitic load associated with the operation of the new, larger pumps would result in the following incremental increase in green house gas emissions and other air emissions as the resulting parasitic load at the St. Lucie Plant would necessarily be "made up" by fossil fuel power plants.

Pollutant	Tons per year
NOx	13
SO2	19
CO2	15,978

Option 2. Installation of helper cooling towers is not feasible

Operational Impacts:
The installation of helper cooling towers was evaluated with the design objective being to remove the additional heat resulting from the uprate and thereby maintaining capability to continue to use the current permit temperature limit of 113°F. The design studied was a mechanical draft tower that consisted of 16 cells. The specification required high efficiency drift eliminators, but even with these in place, there could be issues of salt drift and fogging of SR A1A and possibly portions of the plant. The estimated capital cost of the helper cooling

towers was approximately $95 M. There would also be significant O&M costs associated with operation and maintenance of the towers, maintenance chemicals and the electricity to run the pumps and fans (approximately 5 MWe).

Environmental Impacts:
As mentioned above, operation of the salt water mechanical draft cooling towers could, under certain atmospheric conditions, result in salt spray and fogging. In addition, as with Option 1, above, the parasitic load associated with the operation of pumps and fans would result in the following green house gas emissions and other air emissions as the parasitic load would be "made up" by fossil power plants:

Pollutant	Tons per 3 months*
NOx	5
SO_2	7
CO_2	6,156

*** Assumes helper cooling tower would only operate as necessary to maintain current temperature limits**

Option 3: There are very significant environmental and economic costs associated with reducing reactor power and thermal output for high ocean temperatures to achieve compliance with current discharge permit requirements.

Operational Impacts:
Review of the most recent versions of the uprate heat balances, along with analysis of the ambient ocean water temperatures in August, September, and October (2005-2009) indicate that there now is a significant possibility that derating would be required during the late summer and early fall months to meet the current permitted temperature limits. In fact, review of the ambient ocean temperatures in this time frame, when adjusted by adding the expected uprate discharge temperature increase (28.85°F) indicated exceedences in over 200 days of operational impact at full load over the five year (2005-2009) period. (See Attachment 2) Assuming a power reduction of 37 MWe per unit results in a 1°F reduction in cooling water discharge temperature, over 7,200 hours of down rated production would be required resulting in lost production revenue of about $31 million over the five year period. The more recent late summer and early fall time frames of 2007 and 2009 would have been responsible for 65% of this projected consequence.

	2005	2006	2007	2008	2009	Total
Cost	$5,183,145	$3,025,072	$8,874,173	$2,503,616	$11,110,778	$ 30,696,784

In addition, nuclear power plants are designed to be operated as "base load" facilities. They are brought on line after a refueling cycle and taken to full load where typically they run for 18 months (until the next refueling event), unless there is a mechanical problem, hurricane, or other operational abnormality. Frequent load adjustments to follow fluctuations in ambient ocean temperatures would introduce unnecessary operational complications and inefficiencies.

Environmental Impacts:
Required replacement power for the load reductions described above would come from fossil plant sources, thereby resulting in increased green house gas emissions to accompany the higher cost over the base loaded nuclear power.

The resultant additional green house gas emissions and other air emissions were calculated using data from the years 2005-2009 and are quantified below:

	2005	2006	2007	2008	2009	Total
MH-hr losses	61	36	105	29	231	**461**
NOx (tons)	56	32	95	27	210	**420**
SO_2 (tons)	83	48	141	40	312	**624**
CO_2 (tons)	69,597	40,619	119,159	33,617	262,992	**525,985**

- *Waste Minimization and Source Reduction Analysis Pursuant to Rule 62-4.242(1)(d)2.*

  The attached affidavit verifies that the required analysis has been conducted.

Conclusion: The requested permit revision would meet all requirements of Florida's water quality standards, including the antidegradation test.

GENERAL AFFIDAVIT

State of Georgia
County of DeKalb

BEFORE ME, the undersigned Notary, Debbie A. Warburton *[name of Notary before whom affidavit is sworn]*, on this 4th *[day of month]* day of March *[month]*, 2010 personally appeared Harold A. Frediani, Jr. *[name of affiant]*, known to me to be a credible person and of lawful age, who being by me first duly sworn, on his oath, deposes and says:

FPL has completed a waste minimization and source reduction analysis for the St Lucie Plant Uprate Project consistent with best management practices appropriate for the type of facility or discharge proposed, as identified in Rule 62-620.100(3)(m), F.A.C., 40CFR 122.44(k), and Guidance Manual for Developing Best Management Practices (BMP), USEPA..

Harold A Frediani Jr
[signature of affiant]

Harold A. Frediani, Jr.
[typed name of affiant]

3730 Chamblee Tucker Road
[address of affiant, line 1]

Atlanta, GA 30341
[address of affiant, line 2]

Subscribed and sworn to before me, this 4th *[day of month]* day of March *[month]*, 2010.

[Notary Seal]

Debbie A Warburton
[signature of Notary]

Debbie Warburton
[typed name of Notary]

NOTARY PUBLIC

My commission expires: Aug. 19, 2011.

ATTACHMENT 1