

CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9903080233 DOC. DATE: 99/03/01 NOTARIZED: NO DOCKET #
FACIL: 50-335 St. Lucie Plant; Unit 1, Florida Power & Light Co. 05000335
50-389, St. Lucie Plant, Unit 2, Florida Power & Light Co. 05000389
AUTH. NAME AUTHOR AFFILIATION
STALL, J.A. Florida Power & Light Co.
RECIP. NAME RECIPIENT AFFILIATION
Records Management Branch (Document Control Desk)

SUBJECT: Forwards info copy of uilt request to modify FL wastewater permit FL0002208, formerly NPDES permit, for St Lucie Plant, per Section 3.2.4 of plant EPP.

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Florida Power & Light Company, 6351 S. Ocean Drive, Jensen Beach, FL 34957

March 1, 1999

L-99-51
10 CFR 50.36b
10 CFR 50.4
EPP 3.2.3

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Re: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Request for Florida Wastewater
(NPDES) Permit Modification

Attached is an information copy of the Florida Power & Light Company (FPL) request to modify Florida Wastewater Permit FL0002208, formerly the National Pollutant Discharge Elimination System (NPDES) Permit, for the St. Lucie Plant. This document is being sent pursuant to Section 3.2.4 of the St. Lucie Units 1 and 2 Environmental Protection Plan.

This modification involves replacing the demineralizer portion of the make-up system with a water softener/reverse osmosis treatment system followed by demineralizer polishing. FPL intends to eventually eliminate outfall OSN 002 when this system is fully operational.

Should you have any questions on this information, please contact us.

Very truly yours,

J. A. Stall
Vice President
St. Lucie Plant

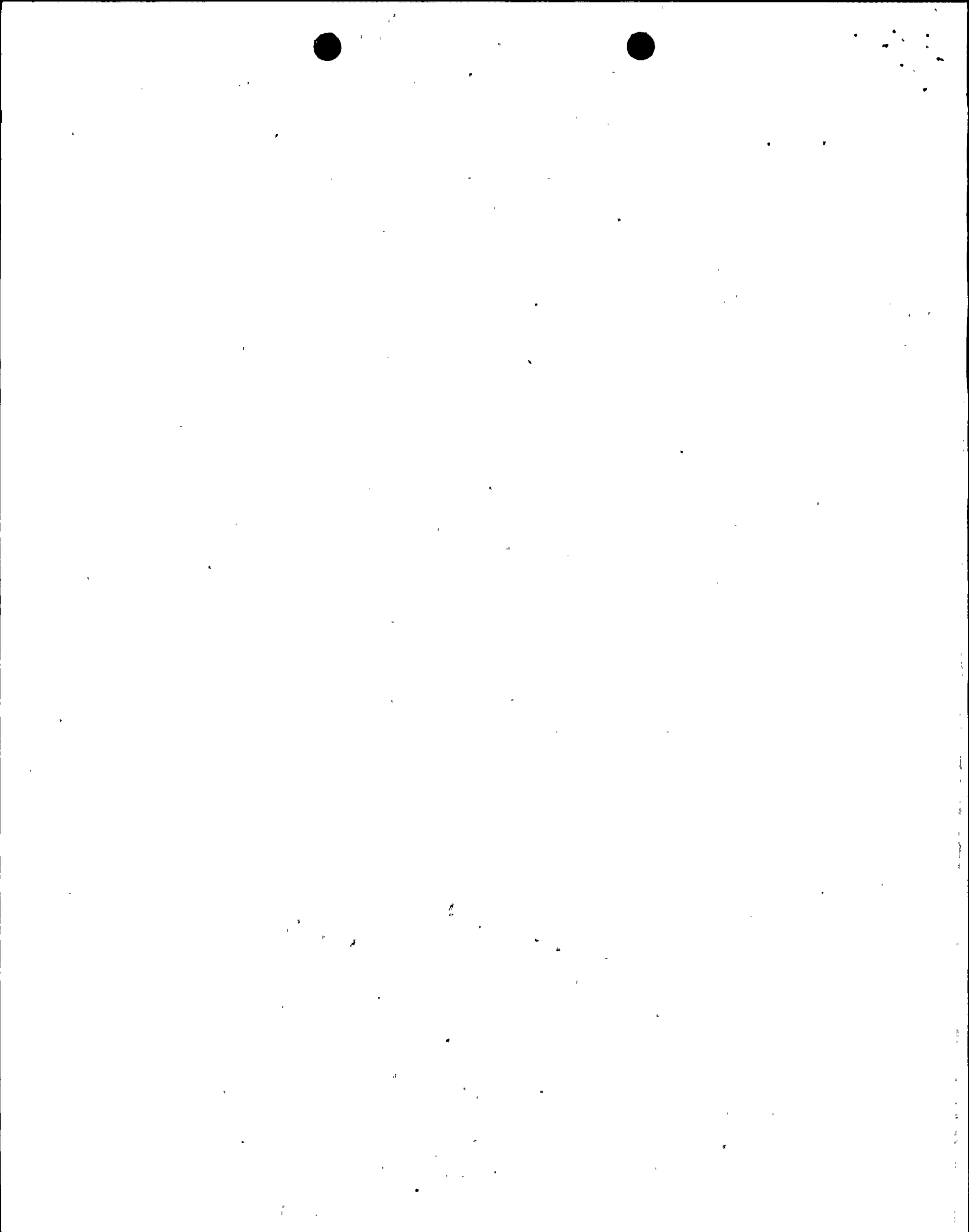
JAS/GRM

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, St. Lucie Plant

Attachment

9903080233 990301
PDR ADOCK 05000335
P PDR

COO/1





6501 S. Ocean Drive, Jensen Beach, FL 34957

February 25, 1999

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
Z 204 677 896

Mr. Mike Hatcher
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

**RE: FPL – ST. LUCIE POWER PLANT
WASTEWATER PERMIT NO. FL0002208
REQUEST FOR MINOR PERMIT MODIFICATION**

Dear Mr. Hatcher:

Enclosed please find the following items to support a minor modification of the Wastewater permit for Florida Power & Light Company's (FPL) St. Lucie Plant:

- 1) Three (3) completed copies of DEP Form 62-620.910(1) – Wastewater Application Form 1 General Information with attachments.
- 2) Three (3) completed and P.E. Sealed copies of DEP Form 62-620.910(9) – Application For A Minor Revision To A Wastewater Facility Permit with attachments.
- 3) A check (FPL Check Number 163442) for the \$250 application fee.

This modification involves replacing the demineralizer portion of the make-up system with a water softener/reverse osmosis treatment system followed by demineralizer polishing. FPL intends to eventually eliminate OSN 002 of the above-referenced permit when this system is fully operational.

If you have any questions or need additional information on this matter, please contact Nick Whiting at (561) 467-7167.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. A. Stall', is written over a horizontal line.

J. A. Stall
Vice President
St. Lucie Plant

Enclosures

cc: DEP, Port St. Lucie
an FPL Group company



WASTEWATER PERMIT APPLICATION FORM 1 GENERAL INFORMATION

I IDENTIFICATION NUMBER:
II CHARACTERISTICS:

Facility ID FL0002208

INSTRUCTIONS: Complete the questions below to determine whether you need to submit any permit application forms to the Department of Environmental Protection. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the blank in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements. See Section B of the instructions. See also, Section C of the instructions for definitions of the terms used here.

SPECIFIC QUESTIONS	YES	NO	FORM ATTACHED
A. Is this facility a domestic wastewater facility which Results in a discharge to surface or ground waters?		X	N/A
B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters?		X	N/A
C. Does or will this facility (other than those describe in A. or B.) discharge process wastewater, or non-process wastewater regulated by effluent guidelines or new source performance standards, to surface waters?		X	N/A*
D. Does or will this facility (other than those described in A. or B.) discharge process wastewater to ground waters?	X		Form 9
E. Does or will this facility discharge non-process wastewater, not regulated by effluent guidelines or new source performance standards, to surface waters?		X	N/A
F. Does or will this facility discharge non-process wastewater to ground waters?		X	N/A*
G. Does or will this facility discharge stormwater to surface waters?		X	N/A*
H. Is this facility a non-discharging/closed loop recycle system?		X	N/A

* Forms submitted to FDEP Tallahassee - April 1996.

III NAME OF FACILITY: (40 characters and spaces)

FPL St. Lucie Steam Electric Power Plant

IV FACILITY CONTACT: (A. 30 characters and spaces)

A. Name and Title (Last, first, & title)	B. Phone (area code & no.)
Whiting, Nick, Environ. Supv.	(561) 467-7167

V FACILITY MAILING ADDRESS: (A. 30 characters and spaces; B. 25 characters and spaces)

A. Street or P.O. Box: 6501 S. Ocean Dr.		
B. City or Town: Jensen Beach	State: FL	Zip Code: 34957

VI FACILITY LOCATION: (A. 30 characters and spaces; B. 24 characters and spaces; C. 3 spaces (if known); D. 25 characters and spaces; E. 2 spaces; F. 9 spaces)

A. Street, Route or Other Specific Identifier: 6501 S. Ocean Dr.		
B. County Name: St. Lucie	C. County Code (if known):	
D. City or Town: Jensen Beach	E. State: FL	F. Zip Code: 34957

VII SIC CODES: (4-digit, in order of priority)

1. Code #: 4911	(Specify) Electric Services	2. Code #:	(Specify)
3. Code #:	(Specify)	4. Code #:	(Specify)

VIII OPERATOR INFORMATION: (A. 40 characters and spaces; B. 1 character; C. 1 character (if other, specify); D. 12 characters; E. 30 characters and spaces; F. 25 characters and spaces; G. 2 characters; H. 9 characters)

A. Name: Florida Power & Light Company		B. Is the name in VIII A. the owner? Yes	
C. Status of Operator: F = Federal; S = State; P = Private; O = Other; M = Public (other than F or S)	(code) P	(specify) Private	D. Phone No.: (561) 467-7167
E. Street or P. O. Box: 6501 S. Ocean Dr.			
F. City or Town: Jensen Beach		G. State: FL	H. Zip Code: 34957

IX INDIAN LAND: Is the facility located on Indian lands? Yes: No: X

X EXISTING ENVIRONMENTAL PERMITS:

A. NPDES Permit No.	B. UIC Permit No.	C. Other (specify)	D. Other (specify)
FL0002208			* See Below

- * IWW IO 56-194945
Unit 2 Site Certification
FDEP Special Permit #96S-080 Lobster Possession

XI MAP: Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements. See Item XI Attachment, Figures 1 and 2.

XII NATURE OF BUSINESS (provide a brief description)

Electric power generating station

XIII CERTIFICATION (see instructions)

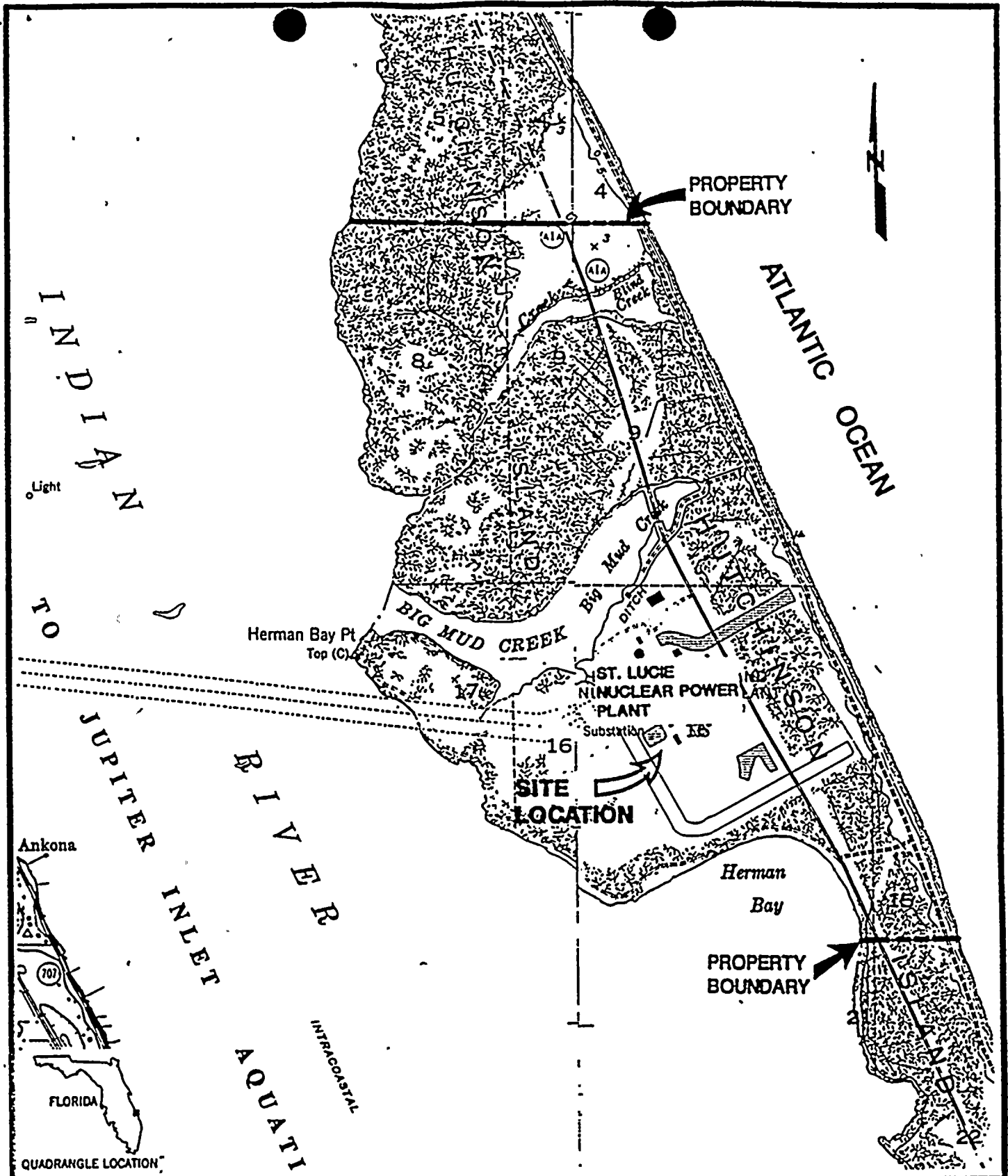
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

J. A. Stall
A. Name (type or print)


B. Signature

Vice President, St. Lucie Plant
Official Title (type or print)

2/22/99
C. Date Signed

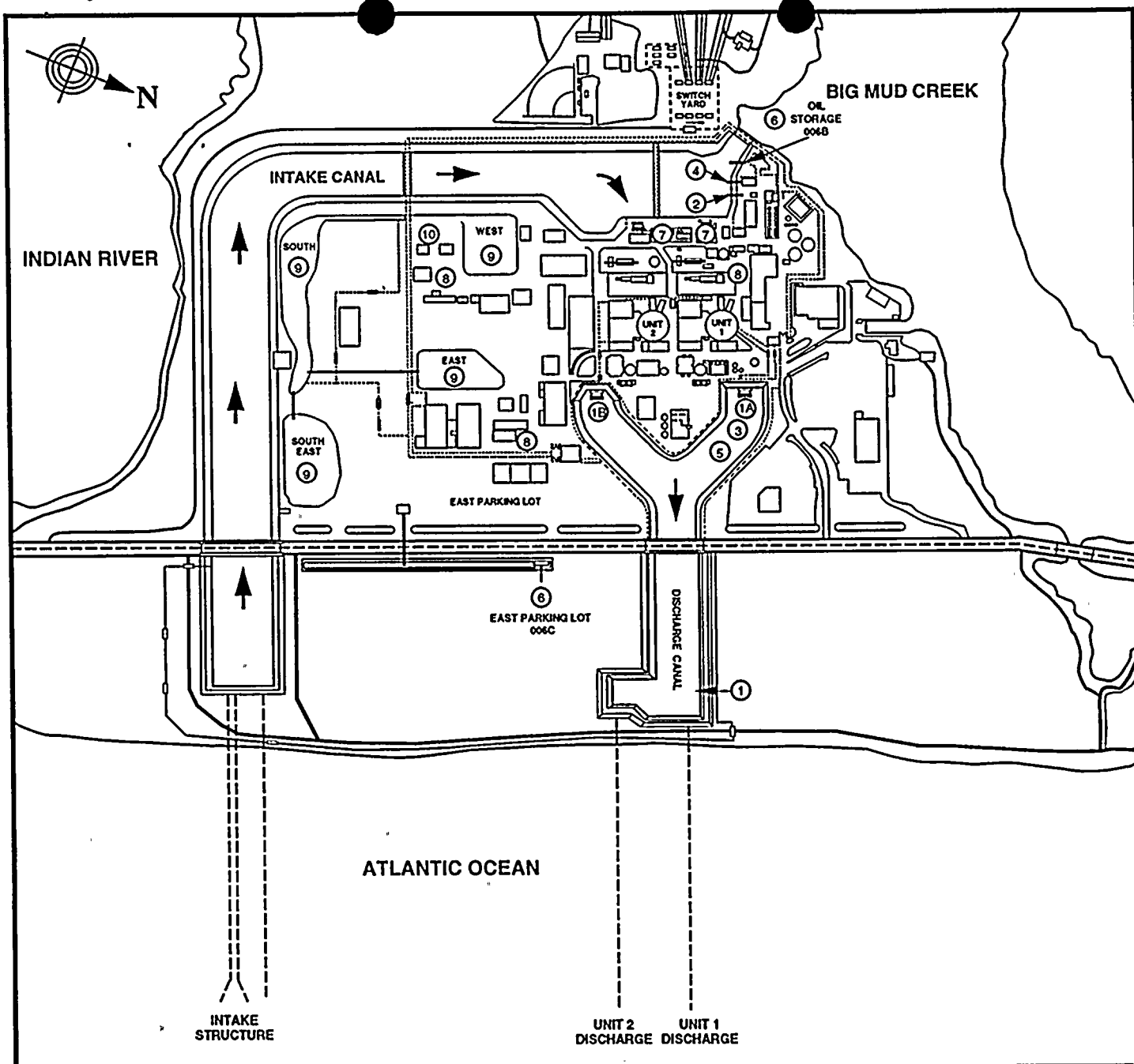


ANKONA 1983 QUAD.
 EDEN 1983 QUAD.
 SOURCE: USGS 7.5 MIN. QUAD.
 T36S, R41E

ITEM XI ATTACHMENT
 FIGURE 1
 FLORIDA POWER AND LIGHT COMPANY
 SITE LOCATION MAP

SCALE: 1"=2000'

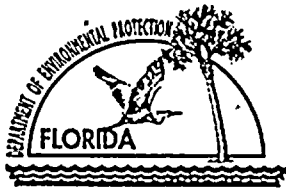
FLORIDA POWER & LIGHT CO.
 ST. LUCIE NUCLEAR-POWER PLANT
 ST. LUCIE COUNTY, FLORIDA



**ITEM XI ATTACHMENT
 FIGURE 2
 FPL ST. LUCIE PLANT OUTFALL LOCATION MAP
 FEBRUARY 1999**

Legend

- | | |
|---|--|
| 1) Serial No. 001 -POD | 5) Low Volume Waste - Steam Generator Blowdown
Serial No. 005 |
| 1A) Once Through Aux Cooling Unit 1 | 6) Non-Equipment Stormwater Drains
Serial No. 006b & No. 006C |
| 1B) Once Through Aux Cooling Unit 2 | 7) Intake Screen Wash
Serial No. 007 |
| 2) Low Volume Waste - Neutralization Basin
Serial No. 002 | 8) Hazardous Waste Satellite Accumulation Area |
| 3) Low Volume Waste - Liquid Radiation Waste
Serial No. 003 | 9) Evaporation/Percolation Basins |
| 4) Unit 1 Wastewater Treatment Facility
Serial No. 004 (No Longer Discharging) | 10) Hazardous Waste 90-Day Accumulation Area |



APPLICATION FOR A MINOR REVISION TO A WASTEWATER FACILITY PERMIT

1. Instructions

- a. In accordance with Rule 62-620.330, F.A.C., this form must be submitted to the appropriate Department district office or approved local program when requests for minor revisions to a permit or minor modifications to a facility are made by a permittee, except for transfer of a permit to a new permittee and addition of a major user of reclaimed water to a Part III reuse system. Application for transfer of a permit to a new permittee shall be made on DEP Form 62-620.910(11). Application for addition of a major user of reclaimed water shall be made on DEP Form 62-610.910(7).
- b. Each applicable item must be completed in full in order to avoid delay in processing of this form. Where attached sheets or other technical documentation are provided, indicate appropriate cross-references.
- c. Three (3) copies of this application with supporting documentation shall be submitted with this form.
- d. All information is to be typed or printed in ink. Dates are to be entered in MM/DD/YR format.
- e. This application and attachments shall be signed in accordance with Rule 62-620.305, F.A.C. Also, as applicable, this application and all attachments shall be signed and sealed by a professional engineer registered in Florida in accordance with Rule 62-620.310, F.A.C.

2. Facility Information

- | | | | |
|--------------------------|---|-----------------------------------|------------------|
| a. Permit Number | <u>FL0002208</u> | b. Facility Identification Number | <u>FL0002208</u> |
| b. Project/Facility Name | <u>FPL St. Lucie Steam Electric Power Plant</u> | | |
| d. Contact Name | <u>Nick Whiting, Environmental Supervisor</u> | | |
| Number and Street | <u>6501 S. Ocean Drive</u> | | |
| City/State/Zip Code | <u>Jensen Beach, Florida 34957</u> | | |
| Telephone | <u>(561) 467-7167</u> | | |

3. Type of Revision

- Correct Typographical Errors¹ - Submit one copy of each page of the permit showing revisions being requested.
- Change Improvement Schedule¹ - Provide a description of the improvement, a list of the dates to be revised, and a reason for the proposed change in each date.
- Change Expiration Date of Permit¹ - Provide the current and proposed expiration dates for the permit and the reasons for the proposed change.
- Change Staffing Requirements² - Describe the proposed change and submit justification for the change in accordance with Chapter 62-699, F.A.C.

¹A processing fee is not required.

²A processing fee is required with the application in accordance with Rule 62-4.050, F.A.C.

- Change Monitoring and Reporting Requirements² - Describe the proposed change and submit justification for the change in accordance with Chapter 62-601, F.A.C.
- Modify Approved Pretreatment Program¹ - Describe the proposed modification and provide the information required by Rule 62-625.540, F.A.C.
- Delete Point Source Outfall¹ - Identify the outfall and explain why the outfall is being eliminated.
- Modify or Expand Approved Residuals Land Application Sites² - Attach a new or updated Agricultural Use or Dedicated Site Plan as required by Chapter 62-640, F.A.C.
- Minor Modification to the Facility² - Provide a description of the proposed modification. If applicable, attach any reports, plans, and specifications which have been developed to implement this modification. See Attachment A and Figures 1 & 2.
- Other² - Provide appropriate documentation. Describe.

4. Certifications

a. Applicant or Authorized Representative

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

J. A. Stall 2/22/99
 (Signature of Applicant or Authorized Representative³) (Date)

Name (please type) J. A. Stall Company Name Florida Power & Light Co.
 Title Vice President, St. Lucie Plant Company Address 6501 S. Ocean Drive
 Phone (561) 465-3550 City/State/Zip Code Jensen Beach, Florida 34957

b. Professional Engineer Registered in Florida

I certify that the engineering features* of this process wastewater project have been (examined) by me** and found to conform to engineering principles applicable to such projects. In my professional judgement, this facility, when properly constructed, operated, and maintained, will comply with all applicable statutes of the State of Florida and rules of the Department.

Name (please type) Dick Verduin
 Florida Registration Number 19914
 Company Name Florida Power & Light Co.
 Company Address 700 Universe Blvd.
 City/State/Zip Code Juno Beach, FL 33408
 Phone Number (561) 691-2614

No 19914
Dick Verduin Feb 16, 1999
 (Seal, Signature, Date, and Registration Number)

- * modification
- ** or by individuals under by direct supervision

³If signed by the authorized representative, attach a letter of authorization in accordance Rule 62-620.305, F.A.C.

ATTACHMENT A

ST. LUCIE PLANT DEMINERALIZED WATER TREATMENT SYSTEM SYSTEM DESCRIPTION

PURPOSE

The proposed water treatment system, which will provide demineralized water for normal plant operation, is intended to replace the original water treatment system.

LOCATION

The proposed water treatment system will be located south of the existing water treatment plant. The system will be placed on a concrete slab with approximate floor dimensions of 50 by 100 feet. The existing stormwater drainage flow patterns in the area will remain essentially unchanged.

GENERAL SYSTEM DESCRIPTION

The basic components of the proposed water treatment system are reverse osmosis followed by mixed bed demineralizers. A flow diagram of the proposed system is provided in Figure 1. The proposed system will be fed from the plant's City Water Storage Tanks, which are supplied by Ft. Pierce Utilities. The product water from the new treatment system will be routed to the Treated Water Storage Tank (TWST). A new pipe will route the wastewater from the reverse osmosis system (RO) and water softener regeneration to an existing storm drain, which discharges to the existing percolation/evaporation pond system. When the new system is fully operational and proven reliable, the Totally Enclosed Treatment Facility (TETF) and Neutralization Basin (OSN 002) will no longer be used for regeneration wastewater treatment.

SYSTEM DESIGN/OPERATION

The existing 6-inch influent and effluent pipes will be tied into the proposed water treatment system provided by Ecolochem, Inc., bypassing the existing treatment system. The design flow rate to the system is up to 750 gallons per minute (GPM). After passing through a water softener, the water is sent to the RO and mixed bed units for final polishing. From the mixed bed demineralizers, the treated water will be routed to the existing 6-inch stainless steel pipe, which supplies the TWST.

Water Softener

The water softener will require occasional regeneration with a brine solution (approximately 10% NaCl) to remove the hardness (typically calcium and magnesium) adsorbed by the resin. The softener regeneration wastewater will be discharged to the existing evaporation/percolation ponds via the plant storm drain system.

Reverse Osmosis (RO) and Mixed Bed Demineralizers

A Carbon Filter precedes each RO unit. Reverse osmosis is a cross-filtration process which uses pump head pressure to overcome the osmotic pressure of the feed water and "forces" a portion of the feed water (in this case 75% of the feed water – up to 400 GPM) through the membrane resulting in basically pure water (permeate). The solids, which remain behind the membrane, are concentrated in the remaining feed water (in this case, 25% of the feed water or up to 132 GPM) and are ultimately disposed in the reject water. The permeate from the RO (up to 400 GPM) will be sent to the mixed bed demineralizers for final "polishing" prior to being routed to the TWST. The reject water from the RO (up to 132 GPM) will be routed to the existing storm drains, which discharge to the plant evaporation/percolation pond system. Since the mixed bed demineralizers will be regenerated offsite, there will be no wastewater discharge from them. During the infrequent occasions that the product water does not meet specification for use as makeup to the plant, the water treatment system will be automatically shut down. When it is restarted, product water may be discharged to the evaporation/percolation ponds at a rate of up to 400 GPM. In this case, the quality of the water discharged will be excellent, since it is basically demineralized.

Chemical Addition

In order to enhance the performance of the water treatment equipment, small quantities of chemicals may be added at a few points in the process (see Figure 1). The proposed chemicals and treatment purpose are as follows:

Sodium chloride Added to the Softener to regenerate the resin.

Sodium bisulfite Added to RO feed to remove any chlorine residual.

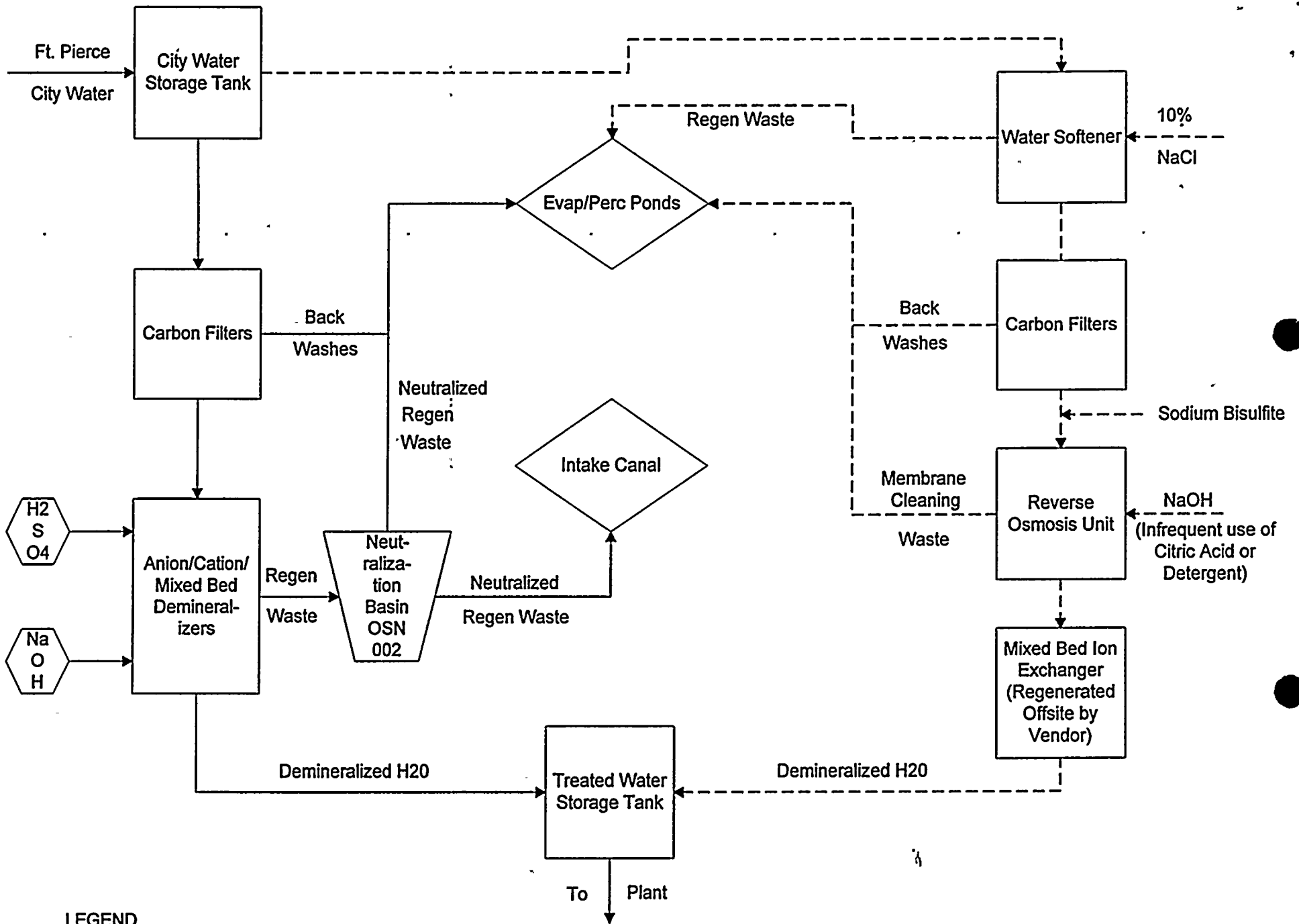
Sodium hydroxide Added to the RO feed to increase silica and alkalinity rejection.

Citric acid and Detergent Added infrequently to clean the RO membranes. Citric acid would be neutralized prior to discharge.

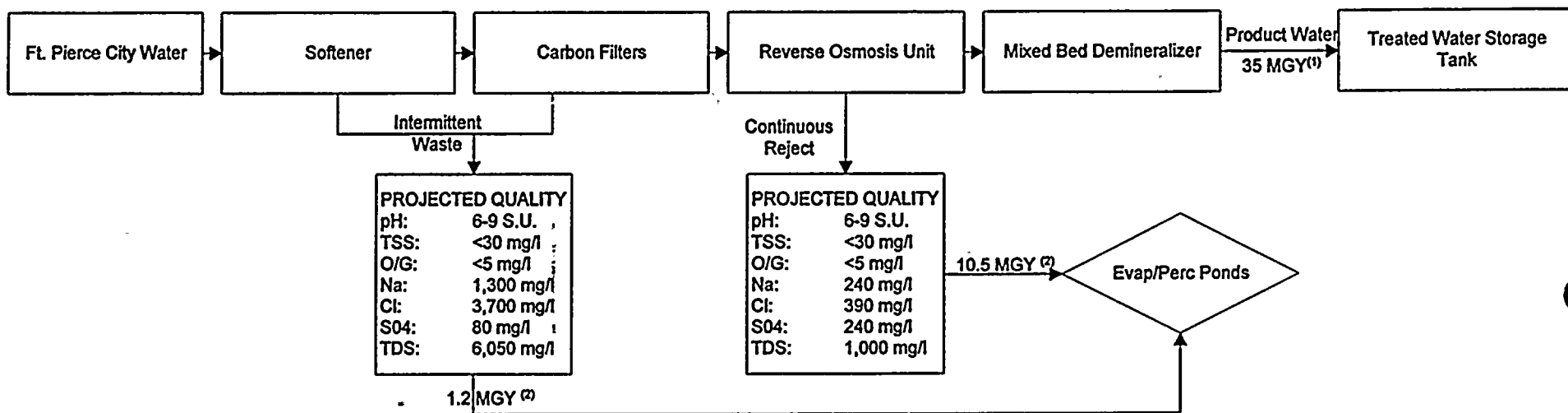
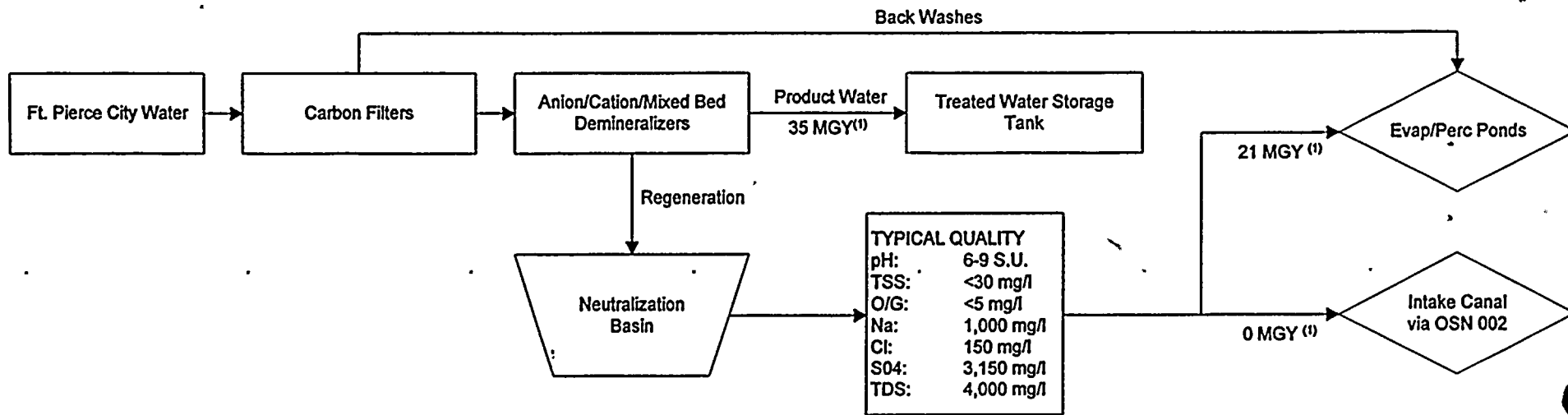
Some miscellaneous reagent chemical may also be used to operate in-line process instrumentation. All process treatment chemicals will be properly stored. All hazardous chemicals will be provided with secondary containment with a capacity of at least 110% of the volume of the largest container within the containment.

Wastewater Quality Comparison: Existing Versus Proposed

Figure 2 provides a comparison of the projected average discharge quality for selected parameters for the proposed system versus actual (typical) data for the existing system. Also provided in the attachment are the estimated volumes of wastewater generated by the new system versus the existing system, based on the expected annual production of demineralized water. Note that with the elimination of on-site demineralizer regenerations, the corrosive wastes which were routed to and treated in the existing TETF, as well as discharges to surface water via OSN 002, will eventually be eliminated.



ST. LUCIE PLANT MAKEUP WATER TREATMENT SYSTEM
 PROCESS FLOW SCHEMATIC
 FIGURE 1



(1) Based on 1997 data
 (2) Projected based on 35 MGY of product water
 OSN - Outfall Serial Number
 TSS - Total Suspended Solids
 O/G - Oil & Grease
 TDS - Total Dissolved Solids
 MGY - Million Gallons per Year

**ST. LUCIE PLANT WATER TREATMENT SYSTEM
 WASTE WATER QUALITY COMPARISON:
 EXISTING VS. PROPOSED
 FIGURE 2**

