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July 16, 2002

-VIA HAND DELIVERY-

Ms. Blanca S. Bayó
Division of the Commission Clerk
and Administrative Services
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Re: Docket Nos. 020262-EI and 020263-EI

Dear Ms. Bayó:

On March 22, 2002, Florida Power & Light Company ("FPL") filed a Petition for Determination of Need for an Electrical Power Plant - Martin Unit 8 and a Petition for Determination of Need for an Electrical Power Plant - Manatee Unit 3. FPL's two petitions were assigned Docket Nos. 020262-EI and 020263-EI, respectively.

On April 22, 2002, FPL moved to hold both proceedings in abeyance to allow FPL to undertake a Supplemental Request for Proposals (Supplemental RFP). On April 29, 2002, FPL filed an emergency motion for waiver of Rule 25-22.080(2), F.A.C., to allow deferral of the hearing schedule if, as a result of the Supplemental RFP, Martin Unit 8 and Manatee Unit 3 were determined to be the most cost-effective alternatives to meet FPL's 2005 and 2006 need. By Order No. PSC-02-0571-PCO-EI, Commissioner Deason, acting as prehearing officer, substantially granted FPL's emergency motion to hold both proceedings in abeyance, and by Order No. PSC-02-0703-PCO-EI, the Commission granted FPL's emergency waiver of Rule 25-22.080(2).

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FPL has completed its Supplemental RFP. FPL's analysis shows that Martin Unit 8 and Manatee Unit 3 are the most cost-effective options to meet FPL's 2005 and 2006 need for capacity. Consequently, FPL is now prepared, consistent with Order Nos. PSC-02-0571-PCO-EI

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and PSC-02-0703-PCO-EI, for the Commission to proceed with its evaluation of the need for those two units in Docket Nos. 020262-EI and 020263-EI. The documents enclosed herewith, as described below, provide the information required for that evaluation.

Enclosed for filing on behalf of FPL in Docket Nos. 020262-EI and 020263-EI are the original and fifteen copies of:

(1) FPL's Motion for Leave to Amend Petitions for Determination of Need

(2) FPL's Amended Petition for Determination of Need for an Electrical Power Plant-Martin Unit 8

(3) FPL's Amended Petition for Determination of Need for an Electrical Power Plant-Manatee Unit 3

Because the same analysis supported FPL's assessment of its 2005 and 2006 capacity needs and its determination that Martin Unit 8 and Manatee Unit 3 were the most cost-effective alternatives to meet the needs, FPL previously filed a motion to consolidate both dockets. Consistent with its motion to consolidate, FPL filed along with its original Need Determination petitions a single Need Study for Electrical Power Plant and a single set of Need Study Appendices, as well as a common set of testimony for both dockets. FPL continues to seek consolidation of these dockets for hearing.

In support of its amended Petitions for Determination of Need for Martin Unit 8 and Manatee Unit 3, FPL is filing the original and 15 copies of the following documents:

(1) Need Study For Electrical Power Plant, 2005-2006

(2) Need Study Appendices A - D

(3) Need Study Appendices E - J

(4) Need Study Appendices K - O

(5) Direct Testimony of Dr. William E. Avera

(6) Direct Testimony of C. Dennis Brandt

(7) Direct Testimony of Moray P. Dewhurst

(8) Direct Testimony of Leonardo E. Green

(9) Direct Testimony of Rene Silva

(10) Direct Testimony of Dr. Steven R. Sim

(11) Direct Testimony of Donald R. Stillwagon

(12) Direct Testimony of Alan S. Taylor

(13) Direct Testimony of William L. Yeager

(14) Direct Testimony of Gerard Yupp

These documents reflect the results of FPL's Supplemental RFP and supercede the Need Study and Appendices and its Direct Testimony filed on March 22, 2002, in support of its initial Petitions for Determination of Need. Therefore, FPL hereby withdraws the March 22 Need Study and Appendices and the March 22 Direct Testimony.

Copies of the enclosed documents, are being provided to counsel for all parties of record. Under separate cover letter, FPL is filing its confidential appendices to the Need Study and a Request for Confidential Classification for the confidential appendices.

With the interruption of these proceedings for the Supplemental RFP, it is important that FPL's need determination proceedings be heard expeditiously. Prior to the Commission's granting of FPL's Emergency Motion To Hold The Proceedings In Abeyance, the parties had agreed to a schedule that would result in a hearing on October 2-4, 2002, a Commission decision on November 19, 2002, and a final order no later than December 4, 2002. FPL needs to preserve this schedule in order to meet its scheduled in-service date of June 2005 for both Martin Unit 8 and Manatee Unit 3. To facilitate this schedule, FPL has: (a) included more detailed data in the enclosed Need Study and Appendices than is required by Commission rule; (b) filed its direct testimony along with its amended petitions; (c) worked out with the intervenors free access to the primary analytical tools used in conducting the economic analysis of the Supplemental RFP; (d) agreed to a Confidentiality Agreement and process to allow intervenor access to most confidential data; and (e) agreed to expedited discovery. FPL will continue to work with the Commission and the parties to facilitate the Commission's prompt consideration of these proceedings.

Any delay in these proceedings would place at risk the in-service dates of Martin Unit 8 and Manatee Unit 3. In the event of delay, FPL would not achieve its 20 percent reserve margin criteria (or even a 15 percent reserve margin) in the summer of 2005. Without purchases of capacity to replace these facilities, an option which may not be available for the full capacity of these units, the reliability of FPL's system could be significantly adversely impacted to the detriment of FPL's customers. In the event of a delay, if FPL were to attempt to purchase capacity and energy to replace these units, FPL likely would pay higher costs than the costs it would incur if these units had met their in-service dates. Thus, delay also would adversely impact the costs paid by FPL's customers.

Because a delay would cause adverse impacts upon FPL's customers, FPL respectfully requests that these proceedings be processed according to the previously agreed schedule and that an Order on Procedure be issued. Such an order should place reasonable limits on discovery, encourage intervenors to coordinate discovery as they have previously agreed to do,

expedite discovery as previously agreed and set forth the agreed-to schedule, thereby facilitating the administration of these proceedings.

Respectfully submitted,

Charles A Guyton

R. Wade Litchfield
Charles A. Guyton

Attorneys for Florida Power
& Light Company

CAG/gc
Enclosures

cc: Counsel for Parties of Record

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BEFORE THE FLORIDA
PUBLIC SERVICE COMMISSION

DOCKET NOS. 020262-EI, 020263-EI
FLORIDA POWER & LIGHT COMPANY

JULY 16, 2002

IN RE: PETITION FOR DETERMINATION OF NEED FOR
PROPOSED ELECTRICAL POWER PLANT
IN MARTIN COUNTY
OF FLORIDA POWER & LIGHT COMPANY

IN RE: PETITION FOR DETERMINATION OF NEED FOR
PROPOSED ELECTRICAL POWER PLANT
IN MANATEE COUNTY
OF FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY & EXHIBITS OF:

WILLIAM L. YEAGER

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF WILLIAM L. YEAGER

DOCKET NOS. 020262-EI, 020263-EI

JULY 16, 2002

Q. Please state your name and business address.

A. My name is William L. Yeager. My business address is Florida Power & Light Company, Power Generation Division, 700 Universe Boulevard, Juno Beach, Florida, 33408-0420.

Q. By whom are you employed and what is your position?

A. I am employed by Florida Power & Light Company ("FPL" or the "Company") as General Manager of Florida Projects.

Q. Please describe your duties and responsibilities in that position.

A. I am responsible for the overall management and direction of licensing, engineering, procurement, construction and start-up activities associated with new supply-side generation projects for the Company. This includes the proposed Martin Unit 8 and Manatee Unit 3 combined cycle generation projects.

Q. Please describe your educational background and business experience.

A. I received a Bachelor of Mechanical Engineering from the Georgia Institute of

Technology in 1982. I am a registered professional Engineer in the State of Florida and a member of the American Society of Mechanical Engineers.

I began my career as a mechanical engineer with FPL in 1982. In 1987, I was lead engineer for the preliminary engineering phase of Lauderdale Units 4&5, two 400 MW combined cycle repowered units that came on line in 1992.

From 1988 to 1991, I was the Project Engineering Manager for FPL's Martin Units 3&4, two 400 MW combined cycle capacity additions. This project is noteworthy in the history of power generation because the four General Electric (GE) Model 7221 combustion turbines were the first to utilize the DLN2 dry low NO_x combustion system. The project overcame significant issues associated with this first of a kind installation – exceeding all performance and reliability targets and finishing under budget and on schedule.

Following completion of Martin Units 3&4, I spent the next four years in various management capacities at the FPL Martin Plant site, increasing my operational knowledge of combined cycle and conventional oil/gas-fired power plants. I then spent two years as Operations Manager for ESI (now FPL Energy), an unregulated affiliate of FPL, and two years as FPL's Manager of Combustion Turbines. From 1999 through 2001, I was Plant General Manager of FPL's Manatee Plant.

Q. What is the purpose of your testimony in this proceeding?

A. I describe the site and unit characteristics for the combined cycle power plants proposed for FPL's Martin and Manatee plant sites, including the size, number and types of units, their heat rates and operating characteristics (i.e., equivalent availability factor, equivalent forced outage rate, capacity factor, and operating costs), the fuel types, the estimated cost of each installation, and the projected in-service dates. I discuss FPL's experience with building and operating combined cycle generating plants and demonstrate that the assumptions made for the Martin and Manatee projects are reasonable and achievable.

Q. Are you sponsoring an exhibit in this case?

A. Yes. It consists of the following documents:

Document WLY-1	Typical 4x1 CC Unit Process Diagram
Document WLY-2	FPL Operational Combined Cycle Plants & FPL Combined Cycle Construction Projects In Progress
Document WLY-3	Martin Plant Vicinity Map
Document WLY-4	Martin Unit 8 Project Boundary
Document WLY-5	Martin Unit 8 Typical Power Block Area
Document WLY-6	Martin Unit 8 Fact Sheet
Document WLY-7	Overall Water Balance for the Martin Site
Document WLY-8	Martin Unit 8 / Manatee Unit 3 Expected Construction Schedule

Document WLY-9	Martin Unit 8 / Manatee Unit 3 Construction Cost Components
Document WLY-10	Manatee Plant Vicinity Map
Document WLY-11	Manatee Unit 3 Project Boundary
Document WLY-12	Manatee Unit 3 Typical Power Block Area
Document WLY-13	Manatee Unit 3 Fact Sheet
Document WLY-14	Overall Water Balance for the Manatee Site

Q. Are you sponsoring any part of the Need Study for this proceeding?

A. Yes. I sponsor Appendix L, and co-sponsor Sections III and VIII of the Need Study.

I. Overview of Combined Cycle Technology

A. Description of Technology

Q. Would you please describe the combined cycle technology that will be used for the Martin and Manatee Projects?

A. Referring to Document WLY-1, a combined cycle unit is a hybrid of combustion turbines (CTs), heat recovery steam generators (HRSGs), and a steam-driven turbine generator (STG). Each of the combustion turbines compress outside air into a combustion area where fuel, typically natural gas or light oil, is burned. The hot gases from the burning fuel air mixture drive a

turbine, which, in turn, directly rotates a generator to produce electricity. The exhaust gas produced by each turbine, which is on the order of 1,100°F, is passed through a HRSG, before exiting the stack at approximately 200°F. The energy extracted by the HRSG produces steam, which is used to drive a STG. The utilization of waste heat from the combustion turbines provides an overall plant efficiency that is much better than that of the CTs or the conventional STG alone.

Each CT/HRSG combination is called a "train." The number of CT/HRSG trains used establishes the general size of the STG. In the case of the proposed Martin Unit 8 and Manatee Unit 3, four CT/HRSG trains will be connected to one STG; hence the terminology "four on one" (4x1) combined cycle plant.

B. Operating Advantages

Q. What level of operating efficiency is anticipated for the Martin and Manatee Projects?

A. Each of the proposed FPL combined cycle units is based on the use of GE "F" Class advanced combustion turbines. The primary difference between these GE 7FA CTs and conventional CTs is their efficiency. This difference results from higher firing temperatures made possible by advances in design. FPL has selected designs based on advanced CTs because they are more

economical than conventional CTs at the capacity factors at which they are expected to operate on the FPL system.

In general, combined cycle plants can be expected to achieve fuel conversion rates of less than 7,000 Btu/kWh, as opposed to values in the 10,000 Btu/kWh range for more conventional steam-electric generating units. This is a fuel efficiency improvement of about 30 percent. FPL anticipates that the new Martin and Manatee combined cycle units will achieve a full load base heat rate of 6,850 Btu/kWh (@ 75°F).

Q. Are there other operational advantages to combined cycle technology?

A. Yes. Another advantage of the multi-train combined cycle arrangement is that it allows for greater flexibility in matching unit output to system operating characteristics over time. As designed, the proposed Martin Unit 8 and Manatee Unit 3 each can function as either a base load or intermediate unit as required by the Company's system.

C. FPL's History of Building and Operating Combined Cycle Plants

Q. Does FPL have experience in building combined cycle plants?

A. Yes, FPL has extensive experience in building combined cycle plants. FPL's first combined cycle plant (Putnam Units 1&2) went into service in 1976. As shown in Document WLY-2, FPL has already placed 4,717 MW (net summer)

of combined cycle capacity in service and the repowering of Sanford Unit 4 is scheduled to be complete by June 2003.

Q. Please describe FPL's history of operating combined cycle plants.

A. As I just mentioned, FPL has 4,717 MW (net summer) of combined-cycle equipment presently in-service, including 14 GE 7FA CTs. Our expertise with this equipment and our commitment to total operational quality enabled us to achieve an operating run of 203 consecutive days—a world record for F technology GE equipment at that time.

In addition to its combined cycle operating experience, FPL has extensive experience operating simple-cycle CTs, which comprise the "front end" of the combined cycle technology. FPL has operated eight GE 7FA CTs in simple-cycle mode at its Fort Myers and Martin plant sites in Florida. FPL also has been operating 48 smaller simple-cycle units for approximately 30 years.

Q. Please characterize FPL's track record in building and operating combined cycle units.

A. FPL has consistently completed all combined cycle construction projects in time to supply the needs of the customer. This is commendable, given the complexities that are inherent in the design and construction of the repowering projects that I just mentioned.

In meeting our obligation to serve, we have also demonstrated our ability to construct reliable and efficient plants. For example, in 1994 we began commercial operation of two new combined cycle units at our Martin plant and, just two years later, were awarded *Power* magazine's Power Plant of the Year Award for world-class performance in O&M and availability. In addition, this plant has excellent environmental characteristics.

To ensure ongoing best-in-class performance in today's highly competitive electricity generating industry, FPL focuses on excellence in people, technology and business and operating processes.

FPL promotes a shift team concept in its power plants that emphasizes empowerment, engagement and accountability, with an understanding that each employee has the necessary knowledge, skill and motivation to perform any required task. This multifunctional, team-driven and well-trained workforce is the key to our ability to consistently meet and often exceed plant performance objectives.

With world-class operational skills upon which to draw, we maximize the value of our growing assets by utilizing the best practices that underlie FPL's industry-leading positions. Our fossil-fueled fleet reached an all-time high of 90% availability in 2000 and 2001, ranking well above the 2000 industry average of 84% and placing FPL among the nation's best performers.

Q. Please describe how FPL monitors the operational performance of its power plants.

A. Technology is also helping us optimize plant operations, gain process efficiencies and leverage the deployment of technical skills as demand for services increases. An example is our Fleet Performance and Diagnostics Center (FPDC) in Juno Beach, Florida. The FPDC gives us the capability to monitor every fossil-fueled plant in the FPL system. We can compare the performance of like components on similar generating units, determine how we can make improvements and prevent problems before they occur. Live video links can be established between the FPDC and plant control rooms to immediately discuss, prevent and solve problems. Last year, FPL was presented with an Industry Excellence Award from the Southeast Electric Exchange for the FPDC. The proposed Martin Unit 8 and Manatee Unit 3 combined cycle projects will be connected to the FPDC.

II. Martin Combined Cycle Project

A. Site Description

Q. Please describe the existing facilities at the Martin Plant site.

A. The Martin Plant has reliably supplied electric power to FPL's customers since 1980, when Unit 1 began operation. The Martin Plant site occupies

11,300 acres near Indiantown, Florida. A vicinity map of the Martin Plant site is presented on Document WLY-3.

The generating capacity of the Martin Plant has increased over the years through the addition of new units to meet increasing demand for electricity. Generating units at the Martin Plant site (and their current net peak summer capacity) presently include: Units 1 (814 MW) and 2 (799 MW), which are residual oil/natural gas-fired steam units; Units 3 and 4 (natural gas-fired combined cycle units, with a peak summer capability of 467 MW and 468 MW, respectively) and Units 8A and 8B (natural gas-fired/light oil, simple cycle combustion turbines, each with a peak summer capability of 159 MW). The Martin Plant site currently has a total summer net generating capability of approximately 2,846 MW. The site includes a 6,800-acre cooling pond that serves Units 1, 2, 3, and 4.

Q. Has the Martin Plant site previously been identified for unit expansion?

A. Yes. The Martin Plant site has long been identified as a possible site for additional generating capacity. When site certification for Units 3 and 4 was issued in 1991, the Governor and Cabinet, acting as the Siting Board, also recognized the Martin Plant site's suitability for further capacity expansions. The Martin Plant site has been identified as a preferred location for additional generating capacity in each of FPL's Ten Year Power Plant Site Plans for the past decade.

Q. Please discuss the proposed location of Martin Unit 8 relative to the existing units on-site.

A. The project boundary for the Martin Unit 8 project is shown on Document WLY-4. The portion of the Martin Plant site that will be occupied by temporary and permanent project facilities comprises approximately 44 acres within the defined project area of approximately 110 acres. The entire project area is within the existing certified portion of the site. Existing Units 1, 2, 3, and 4 will remain in operation and will not be impacted by the project.

The location of the new combined cycle Unit 8 at the existing Martin Plant site and the selection of the combined cycle technology will maximize the beneficial use of the site while minimizing environmental, land use, and cost impacts otherwise associated with development of a large power plant. The Project will utilize a number of existing facilities, while increasing the generating capacity of the site without increasing the overall size of the site.

B. Martin Unit 8 Project

Q. Please describe the proposed Martin Unit 8 project in more detail.

A. The project involves converting the existing Units 8A and 8B CTs from simple cycle to combined cycle and the construction of two new CTs designated 8C and 8D. The unit's general arrangement resulting from this marriage of new and existing CTs is shown on Document WLY-5.

Unit 8 will be a 4x1 combined cycle unit consisting of four 159-MW GE "F" Class advanced CTs, with dry low-NO_x combustors and four HRSGs, which will use the waste heat from the CTs to produce steam to be utilized in a new steam turbine generator. By utilizing the otherwise wasted heat from the CTs in four new HRSGs, the resulting combined cycle unit will be much more efficient than the existing Martin 8A & 8B simple cycle CTs.

Each CT unit will utilize inlet air evaporative cooling. Direct inlet fogging systems achieve adiabatic cooling using water to form fine droplets (fog). The result of the fogging is a cooler, more moisture-laden air stream. This allows additional power to be produced more efficiently. For the GE Frame 7FA CT, an 8°F average decrease in temperature would result in a 3.0 percent increase in power and an associated 1.2 percent decrease in heat rate. Thus, while power increases, the production of power is more efficient with lower emissions per MWh generated.

The inlet foggers would normally be utilized when the ambient air temperature is greater than 60°F. Since the average annual temperature for the Martin site is approximately 75°F, the output and heat rate benefits of fogger operation are included in the base rating of 984 MW (net summer) for Martin Unit 8.

Duct burners are also proposed for each HRSG. The duct burners can be fired

during peak demand periods to add an additional 96 MW of capacity to the unit at an incremental heat rate of 8,770 Btu/kWh.

An additional 27 MW of output can also be achieved by raising the fuel flow to the CT for "peak firing mode" operation. Peak firing reduces the heat rate of the entire unit and the expected incremental heat rate for peak firing is 5,600 Btu/kWh. However, peak firing will shorten the normal replacement period for some CT components, so it will normally be reserved for peak need periods and not routinely dispatched ahead of duct firing - even though the incremental heat rate for this mode of operation is less than the incremental heat rate for all forms of fossil power generation.

Martin Unit 8, with a summer generating capacity of approximately 1,107 MW (net) from the base operation, duct burning, and peak firing capabilities described above, will be among the most efficient electric generators in Florida. It will result in a summer net increase of approximately 789 MW in the Martin Plant site's capacity after accounting for the 318 MW already being provided by CT Units 8A and 8B. The expected operating characteristics of Martin Unit 8 are shown in Document WLY-6.

Q. Please describe the potential air emissions of the Martin Unit 8 project.

A. Protecting the environment while providing safe, reliable and adequate power to customers is of great importance to FPL. FPL's Martin Plant will continue

to comply with all applicable regulatory standards through construction and operation of Martin Unit 8.

The project will have lower overall impacts than were previously reviewed and found acceptable in the 1991 "ultimate site capacity" certification for the Martin Plant site. The use of clean fuels and combustion controls will minimize air emissions from Martin Unit 8 and ensure compliance with applicable emission-limiting standards. Using clean fuels minimizes emissions of sulfur dioxide, particulate matter and other fuel-bound contaminants. Combustion controls similarly minimize the formation of nitrogen oxides (NO_x) and the combustor design will similarly limit the formation of carbon monoxide and volatile organic compounds. When firing natural gas, NO_x emissions will be controlled using dry low-NO_x combustion technology and selective catalytic reduction (SCR), which will limit NO_x emissions to 2.5 parts per million volume dry (ppmvd) (@ 15% O_2 on natural gas). Water injection and SCR will be used to reduce NO_x emissions during CC operation when firing light oil. These design alternatives maximize control of air emissions while balancing economic, environmental, and energy impacts, consistent with regulatory requirements for emission rates reflecting use of the "best available control technology." Taken together, the design of Martin Unit 8 will incorporate features that will make it one of the most efficient and clean power plants in Florida.

C. Fuel Types

Q. What types of fuel will Martin Unit 8 be capable of using?

A. The project will be capable of using two fuel types: natural gas and light oil. The testimony of Mr. Gerard Yupp provides the details for the transportation alternatives to supply the proposed Martin Unit 8 with fuel.

D. Water Supply – Access and Availability

Q. What are the water requirements for the Martin Unit 8 project and how will they be met?

A. The overall water balance for the Martin site is shown on Document WLY-7. Primary water uses for Martin Unit 8 will be for condenser cooling, combustion turbine inlet foggers, steam cycle makeup and service water. Water also will be used on a limited basis for NO_x control when using light oil. Condenser cooling for the steam cycle portion of Unit 8 will be accomplished with water from the existing cooling pond. Service and process water for the project will come from the cooling pond. Make up water to the pond will continue to come from the St. Lucie Canal in accordance with the current South Florida Water Management District consumptive use allocation for the site.

E. Electric Transmission Interconnection Facilities

Q. How will the Martin Unit 8 project be interconnected to FPL's transmission network?

A. The electricity generated by Martin Unit 8 will interconnect with FPL's existing transmission network at the Martin site's existing system substation.

F. Proposed Construction Schedule

Q. What is the proposed construction schedule for the Martin Unit 8 project?

A. A summary of construction milestone dates is shown on Document WLY-8. FPL will begin construction upon receipt of the necessary federal and state certifications and permits. The expected construction duration for the Martin Unit 8 project is 24 months, based on our experience constructing Martin Units 3&4 and the rate of progress for our current construction projects at our Fort Myers and Sanford plants. Therefore, with a planned in-service date of June 2005 to help meet FPL's load requirements, FPL anticipates that construction must commence on or before June 1, 2003.

Q. What is the current status of the certifications and permits required to begin construction of Martin Unit 8?

A. As of July 10, 2002, the Martin 8 site certification application has been deemed sufficient by the Florida Department of Environmental Protection (FDEP). The state-mandated land use hearing for the project was held and the Administrative Law Judge has forwarded a favorable Recommended Order to the Governor and Cabinet for review and approval.

G. Estimated Construction Costs

Q. What does FPL estimate that the Martin Unit 8 will cost?

A. In the economic analysis, the expected installed cost for the Martin Unit 8 is $439 million (2005 dollars), exclusive of transmission integration. This cost includes $389 million for the power block, $7 million for the transmission interconnection, and $43 million in allowances for funds used during construction (AFUDC) to an in-service date of June 2005. The components of the total plant cost are shown in Document WLY-9.

Q. Are these estimated costs for Martin Unit 8 consistent with the estimated costs in the 2002 Supplemental Request for Proposals (Supplemental RFP)?

A. Yes, these plant costs are consistent with FPL's estimates in Table VI-1 of the Supplemental RFP.

III. Manatee Combined Cycle Expansion Project

A. Site Description

Q. Please describe the existing facilities at the Manatee Plant site.

A. As shown on Document WLY-10, the Manatee Plant is located in Manatee County, just east of Parrish, Florida. The plant was originally constructed in the mid-1970s, with the commercial in-service dates for Units 1 and 2 in October 1976 and December 1977, respectively.

The peak summer capacity (net) of the existing units are as follows:

- Unit 1 – 809 MW (peak summer capacity)
  - Steam electric generating unit firing residual oil
- Unit 2 – 810 MW (peak summer capacity)
  - Steam electric generating unit firing residual oil

Q. Is the Manatee site suitable for the Manatee Unit 3 project?

A. Yes. The location of the new combined cycle Unit 3 at the existing Manatee Plant site and the selection of the combined cycle technology will maximize the beneficial use of the site while minimizing environmental, land use, and cost impacts otherwise associated with development of a large power plant. The new CTs and associated HRSGs will be located in an area that has already been affected by existing uses at the plant. The project will utilize a

number of existing facilities, while increasing the generating capacity of the site without increasing the overall size of the site.

B. Manatee Unit 3 Project

Q. Please describe the Manatee Unit 3 project in more detail.

A. The project will be located west of the existing Units 1 and 2 on the existing 9,500-acre Manatee Plant site. Document WLY-11 presents the boundary of the project area, which comprises approximately 73 acres. The new CTs and associated HRSGs will be located in an area that has already been affected by existing uses at the plant.

The proposed Manatee Unit 3 will be a 4x1 combined cycle unit consisting of four 159-MW GE "F" Class advanced CTs, with dry low-NO_x combustors and four HRSGs, which will use the waste heat from the CTs to produce steam to be used in a new steam turbine generator. The proposed power block arrangement is shown on Document WLY-12.

Like Martin Unit 8, the inlets of each combustion turbine will be outfitted with an evaporative cooling (fogging) system. Based on the average annual temperature for the Manatee site, the output and heat rate benefits associated with fogger operation are included in the base rating of 984 MW (net summer) for Manatee Unit 3.

Duct burners are also proposed for each HRSG. The duct burners can be fired during peak demand periods to add an additional 96 MW of capacity to the base unit at an incremental heat rate of 8,770 Btu/kWh.

An additional 27 MW can also be achieved by raising the fuel flow to the CT for "peak firing mode" operation. Since peak firing reduces the heat rate of the entire unit, the expected incremental heat rate for peak firing is 5,600 Btu/kWh. However, peak firing will shorten the normal replacement period for some CT components, so it will normally be reserved for peak need periods and not routinely dispatched ahead of duct firing.

Manatee Unit 3 will have a total peak summer generating capacity of 1,107 MW (net) from the base operation, duct burning, and peak firing capabilities described above. The expected operating characteristics of Manatee Unit 3 are shown in Document WLY-13.

Q. Please describe the potential air emissions of the Manatee Unit 3 project.

A. FPL's Manatee Plant will continue to comply with all applicable regulatory standards through construction and operation of Manatee Unit 3.

The use of natural gas and combustion controls will minimize air emissions and ensure compliance with applicable emission-limitation standards. Using natural gas minimizes emissions of sulfur dioxide, particulate matter and other

fuel-bound contaminants. Combustion controls similarly minimize the formation of NO_x and the combustor design will similarly limit the formation of carbon monoxide and volatile organic compounds. NO_x emissions will be controlled using dry low-NO_x combustion technology and SCR, which will limit NO_x emissions to 2.5 ppmvd (@ 15% O_2 on natural gas). The design of Manatee Unit 3 will incorporate features that will make it one of the most efficient and clean power plants in Florida.

C. Fuel Types

Q. What types of fuel will Manatee Unit 3 be capable of using?

A. The CTs and HRSG duct burners will be capable of using only natural gas. Please refer to the testimony of Mr. Gerard Yupp for discussion of the transportation alternatives to supply the proposed Martin Unit 8 with fuel.

D. Water Supply – Access and Availability

Q. What are the water requirements for the Manatee Unit 8 project and how will they be met?

A. The water supply for the Manatee project will be similar to that of the Martin project, in that water will be obtained from an existing 4,000-acre cooling pond. With make up water provided from the Little Manatee River, this cooling pond will continue to be the source of cooling, service and process

water for the Manatee Plant after the addition of Unit 3. Total site consumptive use will continue to be in accordance with the current Southwest Florida Water Management District water use agreement. The overall water balance for the Manatee Plant, including Unit 3, is shown in Document WLY-14.

E. Electric Transmission Interconnection Facilities

Q. How will the Manatee Unit 3 project be interconnected to FPL's transmission network?

A. The project will connect to the existing on-site system substation via a new tie line. The existing on-site system substation will be expanded to accommodate the new interconnection to FPL's electric transmission system.

F. Proposed Construction Schedule

Q. What is the proposed construction schedule for the Manatee Unit 3 project?

A. Manatee Unit 3 will be a sister to Martin Unit 8, so the expected construction duration will also be 24 months. With a planned in-service date of June 2005 to help meet FPL's load requirements, FPL anticipates that the Manatee Unit 3 construction must commence on or before June 1, 2003. A summary of the construction milestone dates is shown on document WLY-8.

Q. What is the current status of the certifications and permits required to begin construction of Manatee Unit 3?

A. As of July 10, 2002, the Manatee Unit 3 site certification application has been deemed sufficient by the FDEP. Zoning and site plan approval requests have been filed with Manatee County in support of the state-mandated land use hearing. The Manatee County Planning Commission has recommended approval of the Rezoning, General Development Plan and Preliminary Site Plan.

G. Estimated Construction Costs

Q. What does FPL estimate that Manatee Unit 3 will cost?

A. In the economic analysis, the expected installed cost for the proposed Manatee Unit 3 is $551 million, exclusive of transmission integration. This cost includes $482 million for the power block, $10 million for the transmission interconnection, and $59 million in allowances for funds used during construction (AFUDC) to an in-service date of June 2005. The components of the total plant cost are shown in Document WLY-9.

Q. Are these estimated costs for the Manatee Unit 3 project consistent with the estimated costs in the 2002 Supplemental RFP?

A. Yes, these plant costs are consistent with FPL's estimates in Table VI-2 of the Supplemental RFP.

IV. Consequences of Delay

Q. What consequences would be likely if the need determination for either project were delayed?

A. In order to achieve our reliability criteria for summer 2005, FPL has set an in-service date of June 2005 for both projects. Each project has a projected 24 month construction schedule, which dictates that construction begin on or before June 1, 2003. Consistent with this schedule for commencing construction, FPL needs to receive a site certification for each project by the end of May 2003, with the air permit to be issued concurrently or shortly after site certification. This remains a realistic timetable for the site certification, but with less than one month between the expected date upon which all approvals would be received, and the actual date that construction must begin to support a June 2005 in-service date, it is imperative that the FDEP receive all agency reports (including the Commission's Need Determination) report in a timely matter. Based on FPL's experience with the FDEP site certification process, FPL asks the Commission to vote to issue affirmative Need Determinations by no later than November 19, 2002.

If the licensing of the project is delayed beyond June 1, 2003, FPL may not be able to meet its system reliability criteria in 2005. Also, the introduction of new low cost energy would be delayed to the detriment of FPL's customers.

V. Conclusion

Q. What level of confidence does FPL have in the cost projections and construction schedules for the plants discussed herein?

A. In establishing the construction schedule and capital cost estimates for these plants, FPL has drawn upon its design and construction experience in Florida. We are confident that our current design philosophy and construction processes will allow us to complete these power blocks and associated transmission interconnections on schedule and in accordance with the expected construction costs, which our analyses have shown to be the best alternatives for our customers.

Q. Please summarize your testimony.

A. FPL's Martin Unit 8 and Manatee Unit 3 projects will use highly efficient low-emission combined cycle technology, with which FPL has a great deal of experience building and operating. FPL is confident of the accuracy of our construction cost estimates and projected unit capabilities.

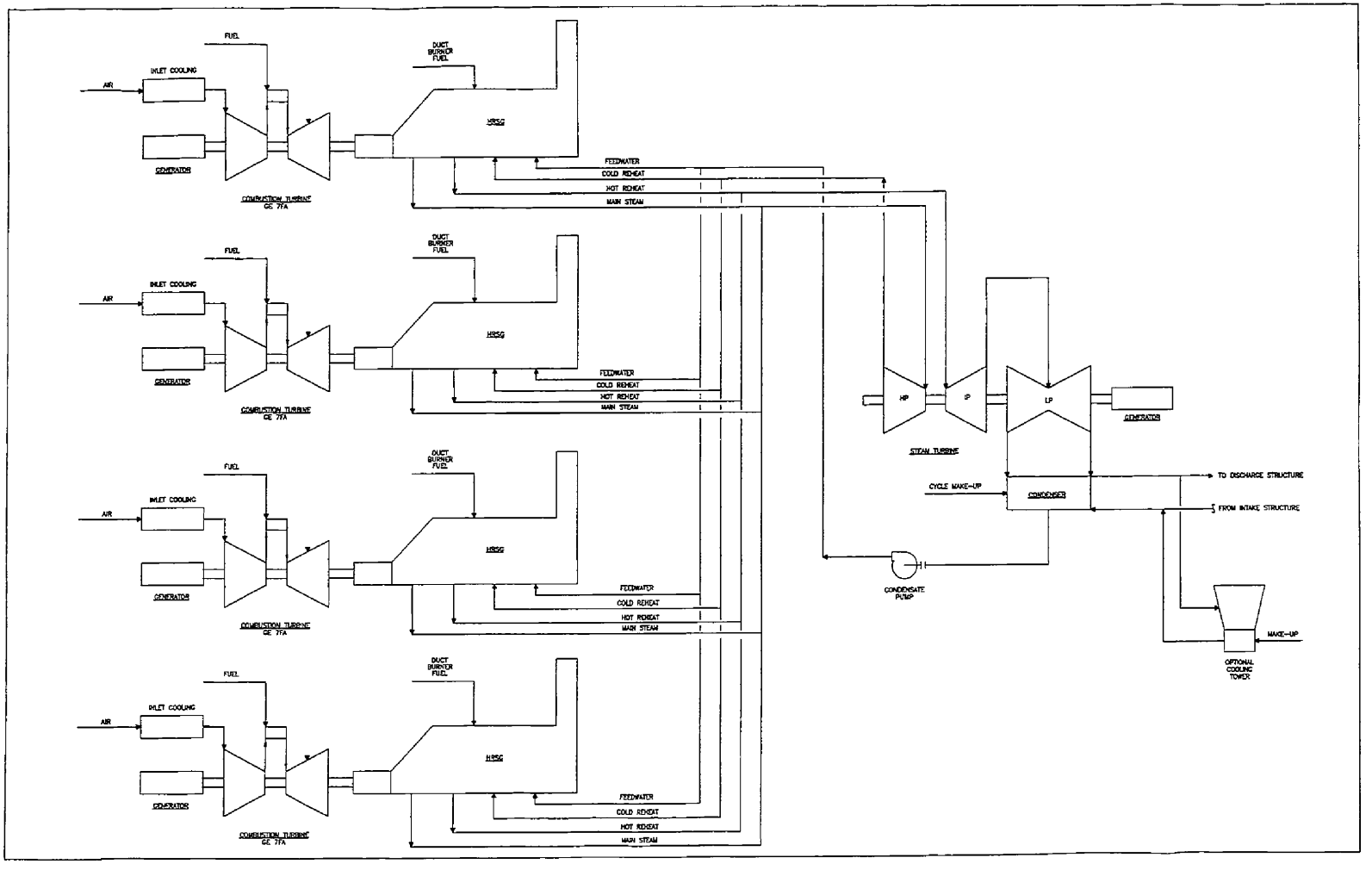
The Martin and Manatee sites are ideal locations for these projects because of the existing electric generating plant, gas transmission and electric transmission infrastructure, and minimal expected incremental environmental impacts compared to "greenfield" sites. There are no water supply, fuel

supply, transmission or other constraints that will interfere with FPL's ability to successfully construct and operate either facility.

Q. Does this conclude your testimony?

A. Yes.

TYPICAL 4X1 CC UNIT PROCESS DIAGRAM



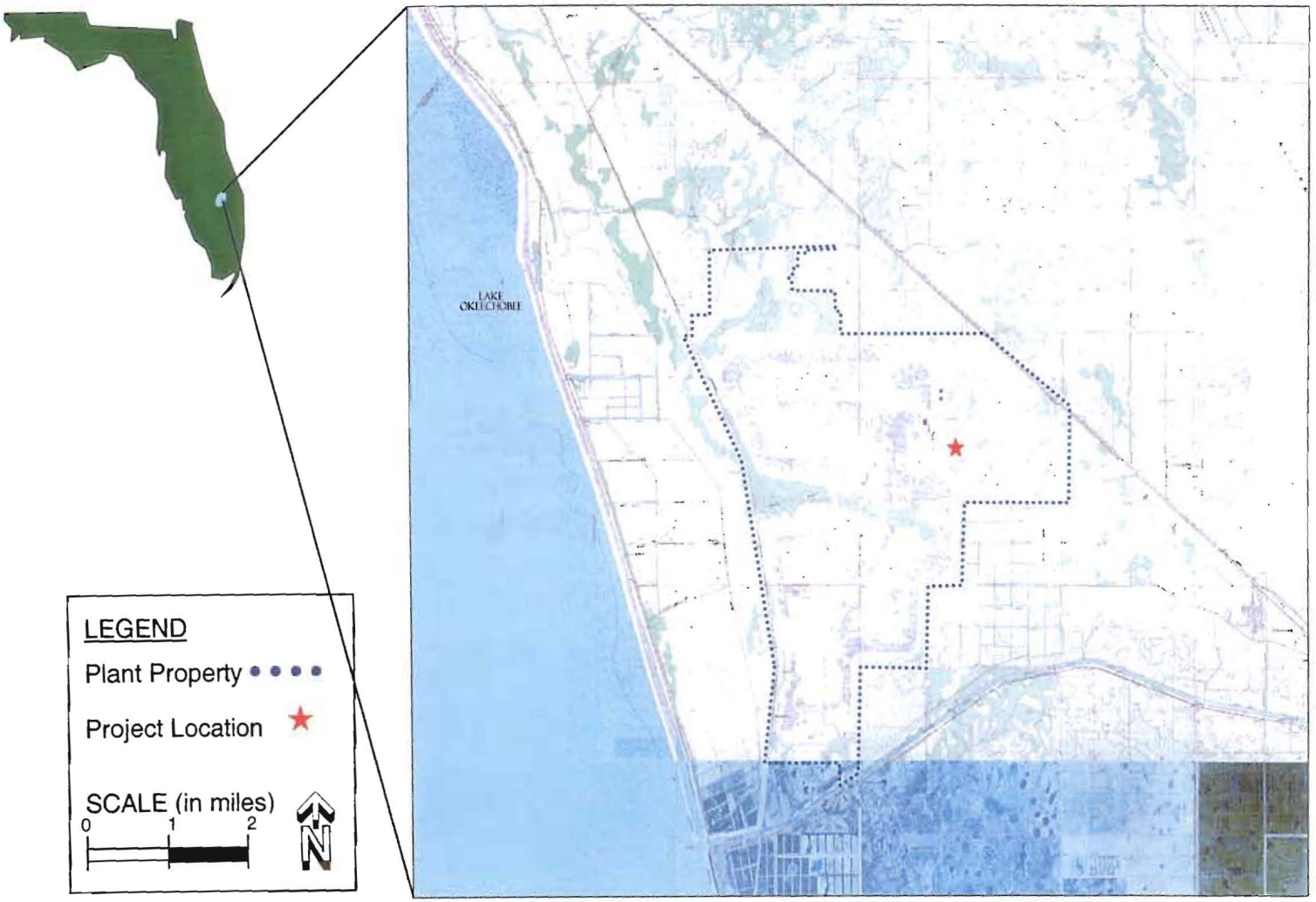
FPL OPERATIONAL COMBINED CYCLE POWER PLANTS

Facility	Location	In-Service Year	Technology	Summer Capacity (MW)	Primary Fuel
Fort Myers Unit 2	FL	2002	6x2 combined cycle	1,473	Natural gas
Sanford Unit 5	FL	2002	4x1 combined cycle	957	Natural gas
Martin Unit 3	FL	1994	2x1 combined cycle	467	Natural gas
Martin Unit 4	FL	1994	2x1 combined cycle	468	Natural gas
Lauderdale Unit 4	FL	1993	2x1 combined cycle	425	Natural gas
Lauderdale Unit 5	FL	1993	2x1 combined cycle	429	Natural gas
Putnam Unit 1	FL	1976	2x1 combined cycle	249	Natural gas
Putnam Unit 2	FL	1976	2x1 combined cycle	249	Natural gas
Total Combined Cycle Capacity - Summer (net) →				4,717	

FPL COMBINED CYCLE CONSTRUCTION PROJECTS IN PROGRESS

Project	Technology	Summer Capacity (MW)	Primary Fuel
Sanford Unit 4 Repowering	4x1 combined cycle	957	Natural gas

MARTIN PLANT VICINITY MAP



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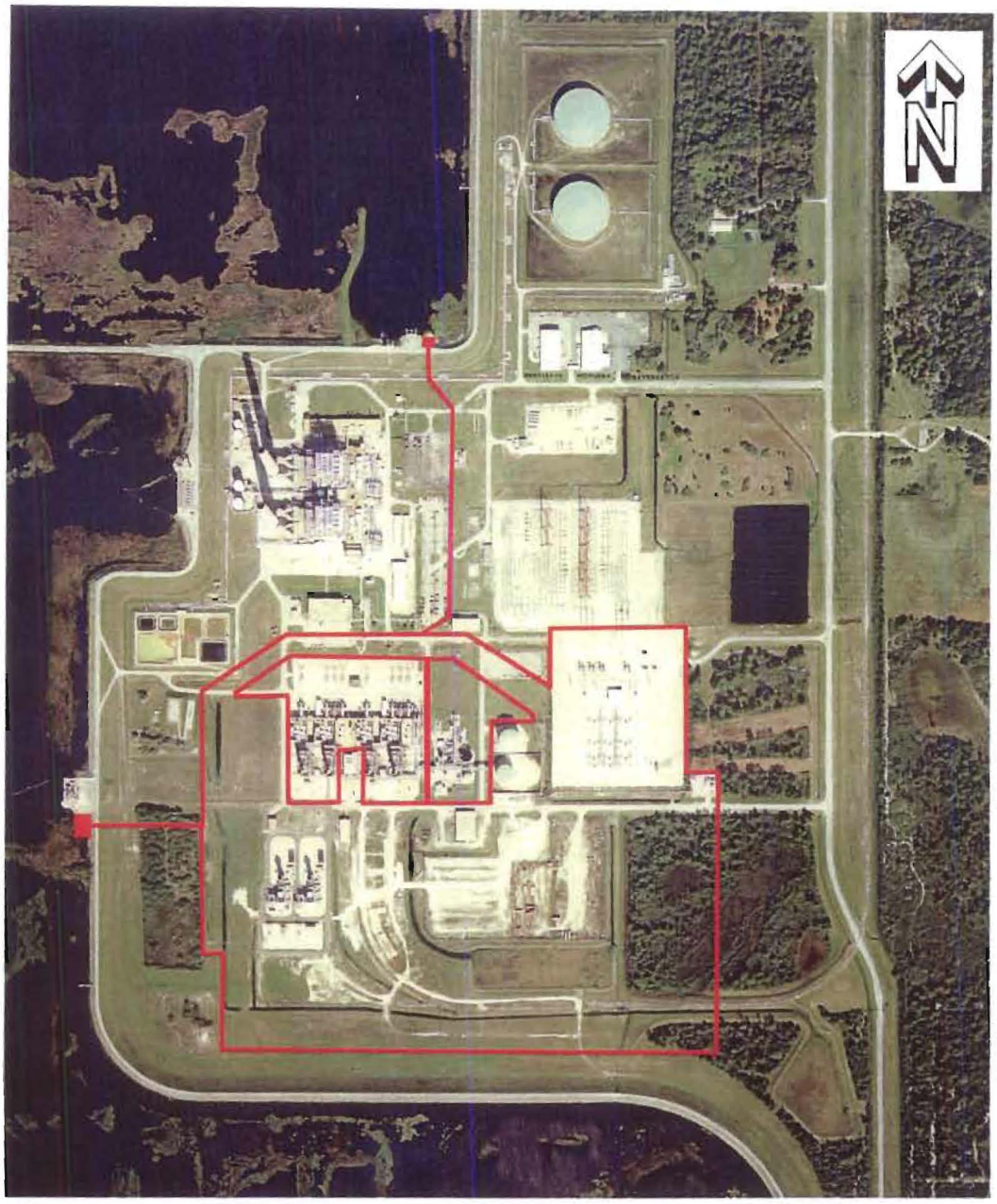
MARTIN UNIT 8 PROJECT BOUNDARY



FPL

Martin Unit 8

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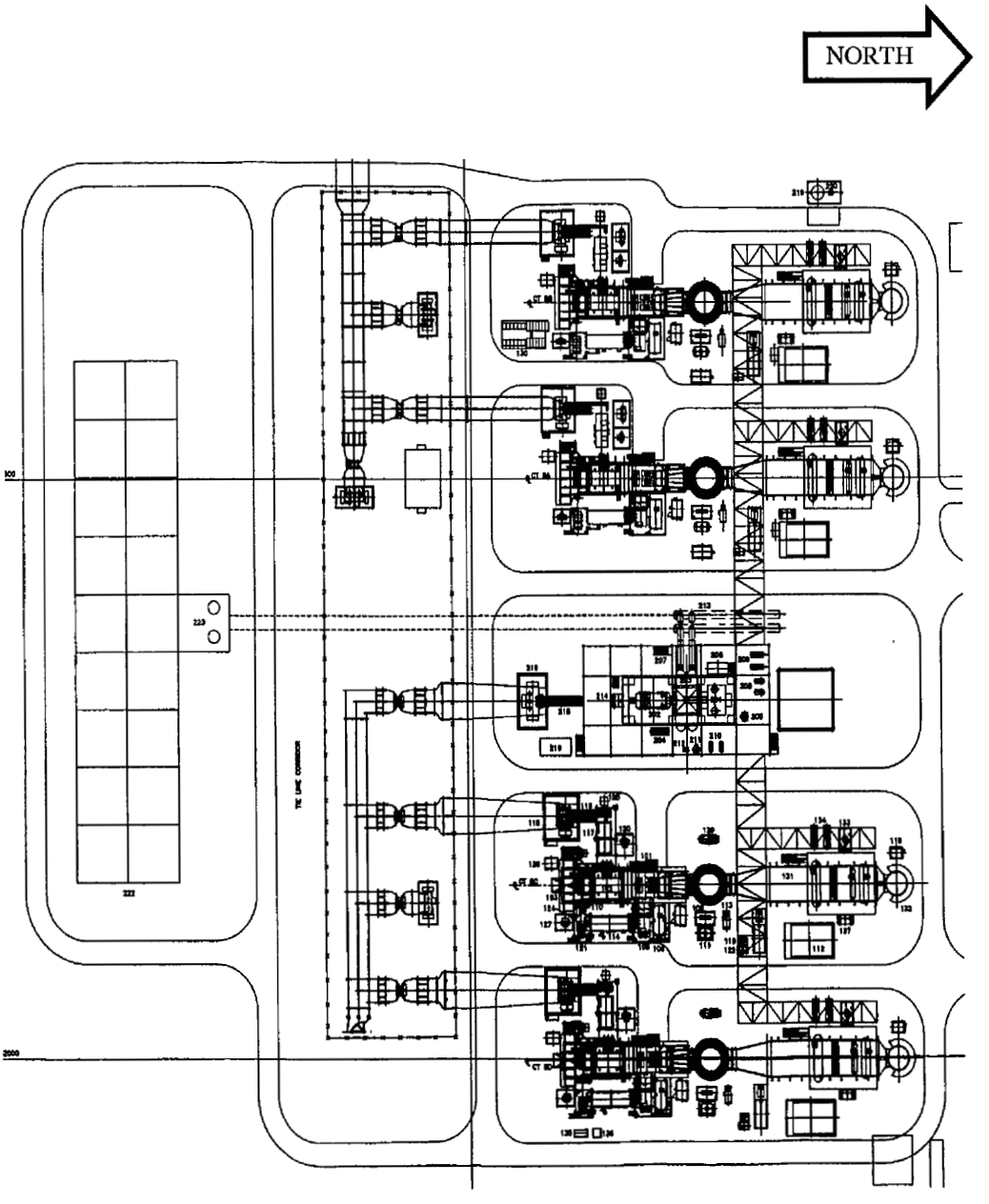
MARTIN UNIT 8 TYPICAL POWER BLOCK AREA



FPL

Martin Unit 8

MARTIN UNIT 8 FACT SHEET

Generation Technology - "Four on One" (4x1) Combined Cycle Configuration:

- Four (4) → GE 7FA Combustion Turbines w/ Inlet Foggers (Two currently on-site operating in simple-cycle mode)
- Four (4) → Heat Recovery Steam Generators with Duct Burners and Selective Catalytic Reduction System for NO_x Control
- One (1) → Single-Reheat Steam Turbine

Expected Plant Peak Capacity:

Summer (95°F / 50% RH)	1,107 MW
Winter (35°F / 60% RH)	1,197 MW

Projected Unit Performance Data:

Average Forced Outage Rate (EFOR)	1%
Average Scheduled Maintenance Outages	1 wk/yr (2% POF)
Average Equivalent Availability Factor (EAF)	97%
Base Average Net Operating Heat Rate @ 75°F / 60% RH	6,850 Btu/kWh (HHV)
Annual Fixed O&M – incremental (2001 dollars)	$1.87/kW-yr
Variable O&M – excluding fuel (2001 dollars)	$0.037/MWh

Fuel Type and Base Load Typical Usage @ 75°F:

Primary Fuel	Natural Gas
Natural Gas Consumption	6,580,000 scf/hr
Alternate Fuel	Low Sulfur Light Oil
Light Oil Consumption	60,000 gal/hr

Expected Base Load Air Emissions Per Train @ 75°F:	**Natural Gas**	**Light Oil**
NO_x (@ 15% O_2)	2.5 ppmvd	12 ppmvd
CO	9 ppmvd	20 ppmvd
PM_{10}	10.9 lb/hr	36.2 lb/hr
SO_2	9.4 lb/hr	94.9 lb/hr

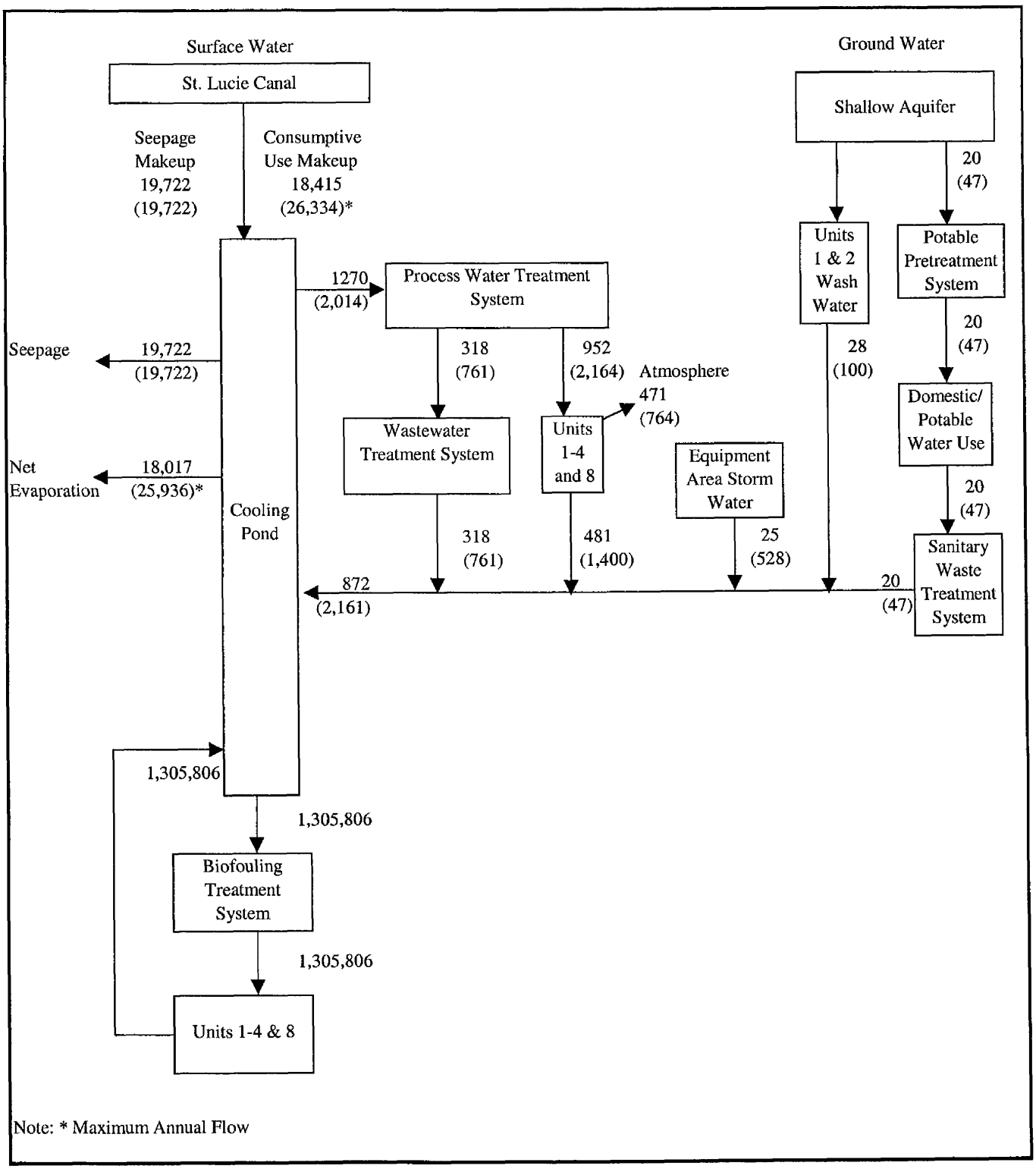
Water Balance:

- Total site consumptive use will continue to be within current SFWMD annual allocation
- Process wastewater recycled to cooling pond

Linear Facilities:

- Two (2) FGT gas laterals currently supply Martin site; possibility of contracting with another transporter
- No light oil pipeline – light oil delivered to site by truck

OVERALL WATER BALANCE FOR THE MARTIN SITE



All Flows in gpm; Maximum Instantaneous Flows in Parentheses
Source: Black & Veatch, 2001; FPL, 2001; Foster Wheeler Environmental Corporation

FPL
Martin Unit 8

MARTIN UNIT 8 / MANATEE UNIT 3

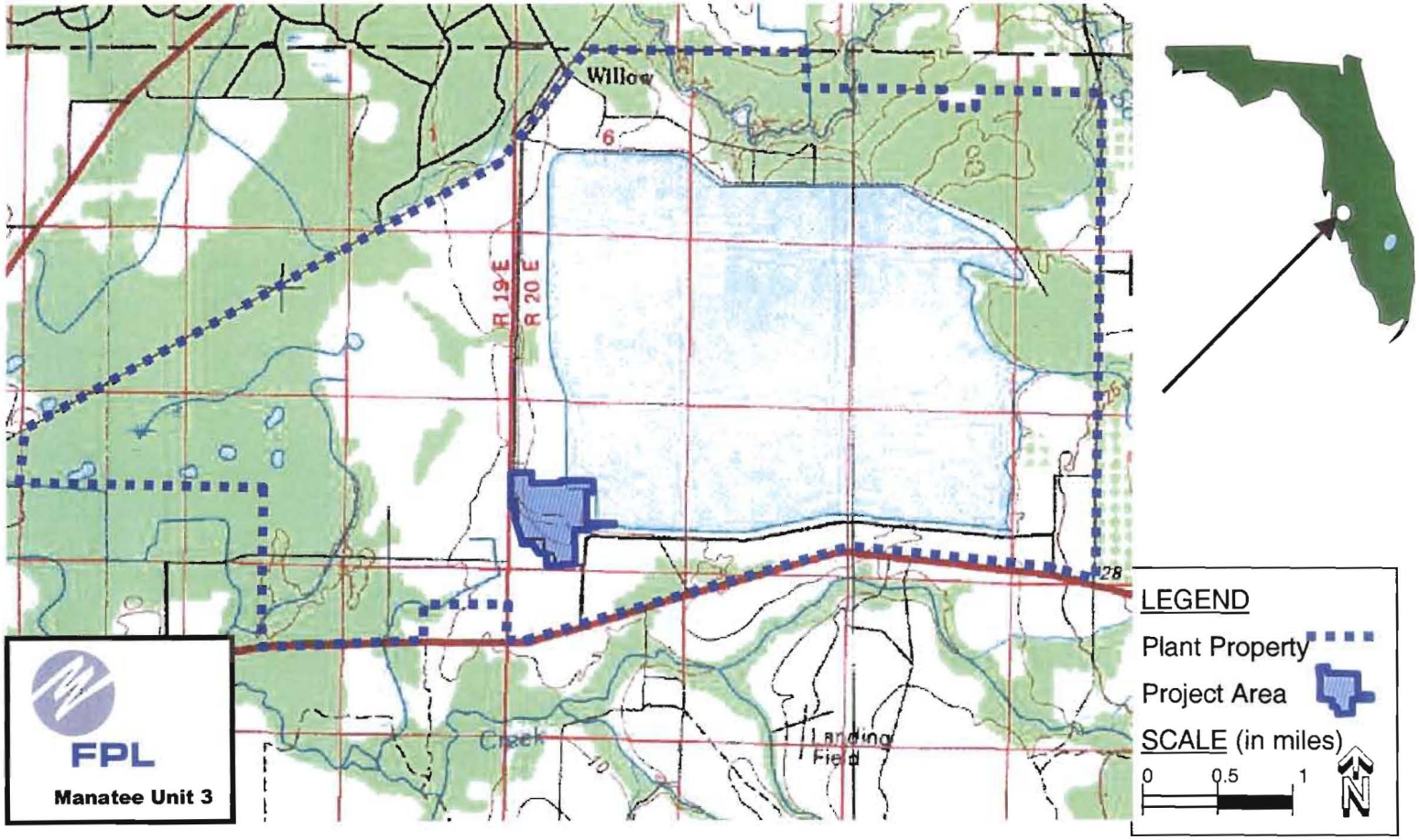
EXPECTED CONSTRUCTION SCHEDULE

	Begin	End
Initiate sequence of HRSG orders (LNTP)	Nov 02	Dec 02
Initiate sequence of combustion turbine orders (LNTP)	Nov 02	Dec 02
Issue LNTP for steam turbines		Nov 02
Receive approvals necessary to begin construction		May 03
Site Prep & Foundations	Jun 03	Jan 04
Balance of Plant	Aug 03	Dec 04
Erect HRSGs	Feb 04	
Erect CTs	Apr 04	
Erect steam turbines	Apr 04	
Start-Up	Jan 05	May 05
Commercial operation		Jun 05

PLANT CONSTRUCTION COST COMPONENTS
(2005 $ MILLION)

	MARTIN	MANATEE
Power Block	$389	$482
Transmission Interconnect	$7	$10
AFUDC (Excluding Transmission Integration)	$43	$59
Total Plant Cost (Excluding Transmission Integration)	$439	$551

MANATEE PLANT VICINITY MAP



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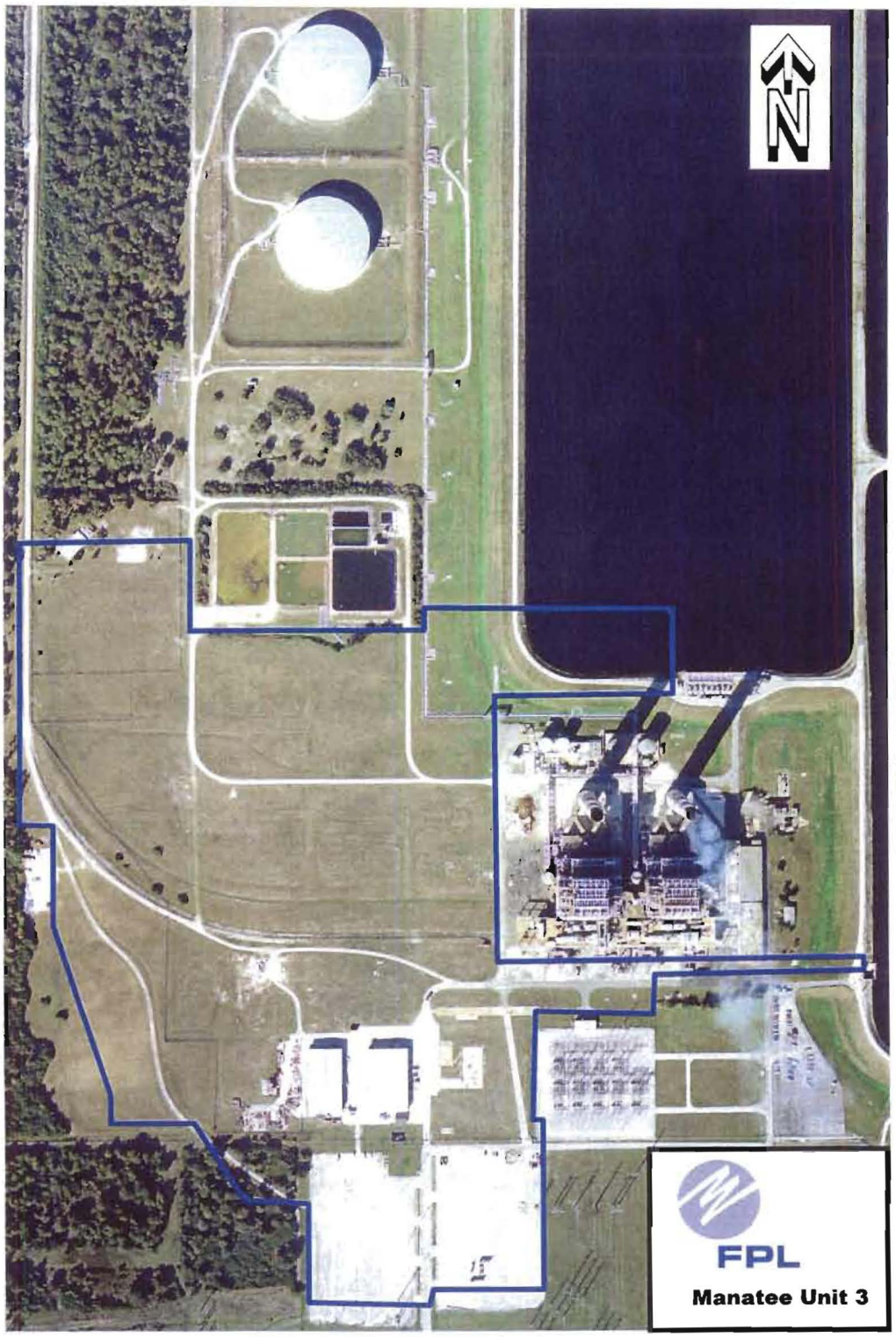
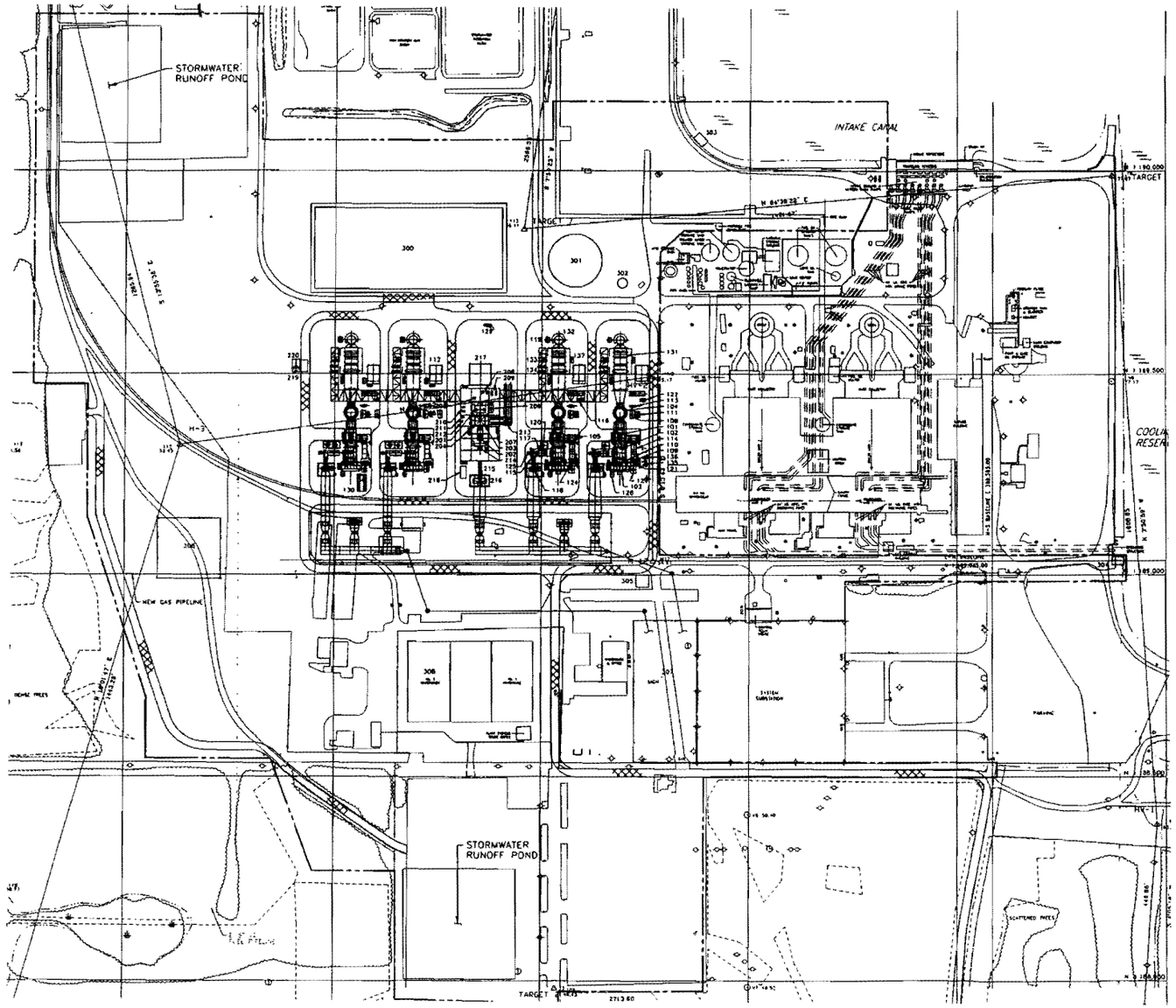
MANATEE UNIT 3 PROJECT BOUNDARY



Boundary of Manatee Expansion Project Area

MANATEE UNIT 3 TYPICAL POWER BLOCK AREA



FPL

Manatee Unit 3

MANATEE UNIT 3 FACT SHEET

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Annual Fixed O&M – incremental (2001 dollars)	$2.71/kW-yr
Variable O&M – excluding fuel (2001 dollars)	$0.037/MWh

Fuel Type and Base Load Typical Usage @ 75°F:

Fuel	Natural Gas
Natural Gas Consumption	6,580,000 scf/hr

Expected Base Load Air Emissions Per Train @ 75°F:

NO_x (@ 15% O_2)	2.5 ppmvd
CO	9 ppmvd
PM_{10}	10.9 lb/hr
SO_2	9.4 lb/hr

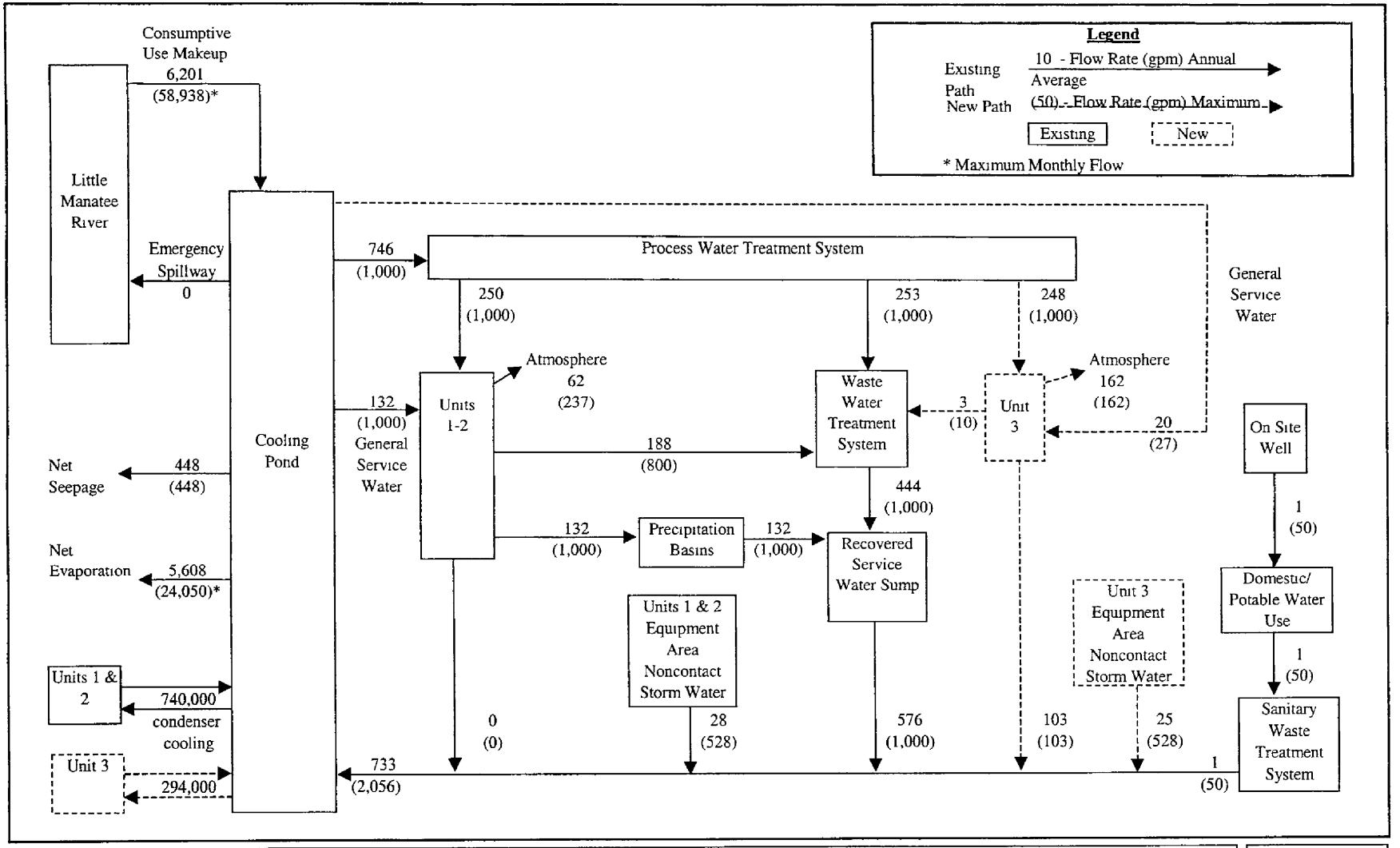
Water Balance:

- Total site consumptive use will be within amounts currently allocated by SWFWMD
- Process wastewater recycled to cooling pond

Linear Facilities:

- FPL has an agreement with Gulfstream Natural Gas Pipeline System (Gulfstream) to supply natural gas for the existing Manatee Plant Units 1 and 2, and a new lateral from the Gulfstream mainline into the Manatee site is planned for that purpose. Natural gas for Manatee Unit 3 may be supplied by this new lateral or from another gas supplier.

OVERALL WATER BALANCE FOR THE MANATEE SITE



FPL Manatee Plant Water Management Plan

Source: Foster Wheeler, 2002.

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Document No. WLY-14
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