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RECEIVED-FPSC
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COMMISSION
CLERK

February 26, 2003

Ms. Blanca S. Bayo, Director
Commission Clerk and Administrative Services
Florida Public Service Commission
2540 Shumard Oak Boulevard
Betty Easley Conference Center, Room 110
Tallahassee, Florida 32399-0850

VIA HAND DELIVERY

Re: Docket No. 030084-EI; In re: Petition of Florida Power & Light Company for Determination of Need

Dear Ms. Bayo:

Enclosed herewith for filing on behalf of Florida Power & Light Company ("FPL") are the following documents:

1. An original and fifteen copies of FPL's Petition to Determine Need for Electrical Transmission Line (redacted); 01962-03

AUS
CAF
CMP
COM 5 1 transcript copies
CTR
ECR Haff
GCL 2
OPC
MMS
SEC 1
OTH

2. An envelope marked "Confidential" containing a copy of the confidential pages of the Petition to Determine Need for Electrical Transmission Line; 01963-03

3. An original and fifteen copies of the Prefiled Direct Testimony and Exhibit of William R. Schoneck, Jr. (redacted); 01964-03

4. An envelope marked "Confidential" containing a copy of the confidential pages of the Prefiled Direct Testimony of William R. Schoneck, Jr.; 01965-03

5. An original and fifteen copies of the Prefiled Direct Testimony of Vicente Ordax, Jr.; 01966-03

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L.V.P.
FPSC-BUREAU OF RECORDS

6. An original and fifteen copies of the Prefiled Direct Testimony of C. Martin Mennes (redacted); 01967-03

7. An envelope marked "Confidential" containing a copy of the confidential pages of the Prefiled Direct Testimony of C. Martin Mennes; and 01968-03

8. An original and fifteen copies of FPL's Notice of Intent to Request Specified Confidential Classification. 01969-03

Please acknowledge receipt of these documents by stamping the extra copy of this letter "filed" and returning the same to me. Thank you for your assistance with this filing.

Sincerely,

Kenneth A. Hoffman, Esq.

KAH/rl
Enclosures
F:\USERS\ROXANNE\FPL\Bayofeb26.ltr

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

Petition for Determination of Need for Collier-Orange River 230kV Transmission Line in Collier, Hendry, and Lee Counties, by Florida Power & Light Company	)	Docket No. 030084-EI
	)	Filed: February 26, 2003

FLORIDA POWER & LIGHT COMPANY'S PETITION TO DETERMINE NEED FOR ELECTRICAL TRANSMISSION LINE

Petitioner Florida Power & Light Company ("FPL"), by and through its undersigned counsel, hereby petitions the Florida Public Service Commission ("Commission") to determine, pursuant to Section 403.537, Florida Statutes (2002), and Rules 25-22.075 and 25-22.076, Florida Administrative Code, that there is a need for the proposed electrical transmission line described herein. In support of its Petition, FPL states:

1. The name and address of the affected agency are:

   Florida Public Service Commission
   2540 Shumard Oak Boulevard
   Tallahassee, Florida 32399-0850

2. FPL is an investor-owned electric utility that provides electric service to customers in its service area. FPL's full name and business address are:

   Florida Power & Light Company
   9250 West Flagler Street
   Miami, Florida 33174

DOCUMENT NUMBER-DATE
01962 FEB 26 8
FPSC-COMMISSION CLERK

3. All pleadings, motions, notices, staff recommendations, orders or other documents filed or served in this proceeding should be served upon the following individuals on behalf of FPL:

Mr. William G. Walker, III
Vice President, Regulatory Affairs
Florida Power & Light Company
215 S. Monroe Street
Suite 800
Tallahassee, FL 32301
850/521-3910 (Telephone)
850/521-3939 (Telecopier)

Kenneth A. Hoffman, Esq.
Marsha E. Rule, Esq.
Rutledge, Ecenia, Purnell & Hoffman, P.A.
P. O. Box 551
Tallahassee, Florida 32302
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- - and - -

R. Wade Litchfield, Esq.
Florida Power & Light Company
Senior Attorney
700 Universe Boulevard
Juno Beach, Florida 33408-0420
(561) 691-7101 (Telephone)
(561) 691-7135 (Telecopier)

4. FPL proposes to construct and operate a 230kV electrical transmission line as described in Exhibit A attached hereto. The proposed transmission line would originate at FPL's Orange River Substation in Lee County and would terminate at FPL's Collier Substation in Collier County, located on a right-of-way ("ROW") that is geographically diverse from the existing common transmission line ROW between these two substations (the "Collier-Orange River #3 Project"). The line has a planned in-service date of December, 2005.

5. The Collier-Orange River #3 Project is subject to the Transmission Line Siting Act ("TLSA"), Sections 403.52-403.5365, Florida Statutes (2002).

6. Pursuant to the TLSA and Section 403.537, Florida Statutes (2002), and Rules 25-22.075 and 25-22.076, Florida Administrative Code, the Commission has jurisdiction to determine

the need for the Collier-Orange River #3 Project, applying the standards set forth in Section 403.537(1)(b), Florida Statutes (2002).

7. The information required to be supplied for the need determination pursuant to Rule 25-22.076, Florida Administrative Code, appears in Exhibit A hereto and is incorporated herein by reference. Fifteen (15) copies of this Petition with Exhibit A are filed herewith.

8. FPL is charged with serving both its existing customers and new customers that locate in its service territory as well as any wholesale transmission customers. Currently, FPL forecasts continued strong customer and load growth in the territory affected by the proposed Collier-Orange River #3 Project for the foreseeable future.

9. The data and analyses contained in Exhibit A demonstrate the need for the Collier-Orange River #3 Project in the proposed time frame as the most cost-effective alternative available, taking into account the demand for electricity, the need for electric system reliability and integrity, the need for abundant, low-cost electrical energy to assure the economic well-being of the citizens of this state, the starting and ending points of the line, and other relevant matters pursuant to Section 403.537(1)(b), Florida Statutes (2002).

10. As demonstrated in more detail in Exhibit A and the prefiled direct testimony submitted contemporaneously with this Petition, the Collier-Orange River #3 Project is needed in December 2005 to: (a) avoid violations of numerous single contingency transmission criteria related to the potential outage of existing transmission facilities that are situated on a common ROW between the Orange River Substation and Collier Substation; and (b) provide another electrical feed via a separate ROW into the Collier/Naples area, thereby reducing the impact of a loss of the existing transmission facilities on the common ROW. The injection of an additional 230kV line on a

separate ROW between the Orange River Substation and Collier Substation by December 2005 is necessary to serve the increasing load and customer base in the area south of Ft. Myers and to provide a diverse path of power supply to this heavily populated area, thereby enhancing reliability and service restoration efforts.

11. In order to enable FPL and the Commission to comply with the notice requirements of Section 403.537(1)(a), Florida Statutes (2002) and Rule 25-22.075, Florida Administrative Code, FPL previously filed a Notice of Intent to File Petition for Transmission Line Need Determination on January 27, 2003. The Commission has set the final hearing in this docket for April 8-9, 2003. FPL has published notice of that hearing in the appropriate newspapers in accordance with the statutory requirements and the requirements of Rule 25-22.076(4), Florida Administrative Code.

WHEREFORE, FPL respectfully requests that the Commission:

A. Hold a hearing on this Petition in accordance with Section 403.537, Florida Statutes, Chapter 120, Florida Statutes (2002), and applicable rules of the Commission;

B. Determine that there is a need for the Collier-Orange River #3 Project, with the starting point at FPL's existing Collier Substation in Collier County, and the ending point at FPL's existing Orange River Substation in Lee County, located on a right-of-way that is geographically diverse from the existing common transmission line right-of-way between these two substations, subject to the final corridor determination under the Transmission Line Siting Act; and

C. Enter a final order determining such need for the Collier-Orange River #3 Project.

Respectfully submitted,

KENNETH A. HOFFMAN, ESQ.
Rutledge, Ecenia, Purnell & Hoffman, P.A.
P. O. Box 551
Tallahassee, Florida 32302
Telephone: 850-681-6788
Telecopier: 850-681-6515

- - and - -

R. WADE LITCHFIELD, ESQ.
Florida Power & Light Company
Senior Attorney
700 Universe Boulevard
Juno Beach, Florida 33408-0420
(561) 691-7101 (Telephone)
(561) 691-7135 (Telecopier)

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing was furnished by Hand Delivery to the following this 26th day of February, 2003:

Larry Harris, Esq.
Division of Legal Services
Florida Public Service Commission
2540 Shumard Oak Boulevard
Room 370
Tallahassee, Florida 32399-0850

KENNETH A. HOFFMAN, ESQ.

FPL\needpetition

EXHIBIT "A"

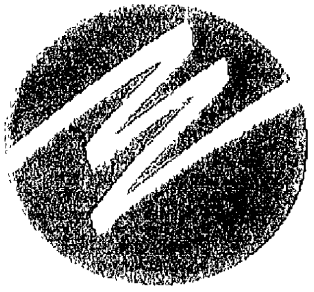
(REDACTED)

FLORIDA POWER & LIGHT COMPANY'S PETITION TO DETERMINE NEED FOR:

THE COLLIER-ORANGE RIVER #3 PROJECT

DOCKET NO. 030084-EI

FEBRUARY 26, 2003



FPL

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Executive Summary:

The need for the Collier-Orange River #3 Project (sometimes referred to hereinafter as the "Project") is based on several considerations:

- The need to serve the increasing load and customer base in the area south of Fort Myers, including the Naples load center, in a reliable manner consistent with North American Electric Reliability Council ("NERC") Transmission System Standards.
- The need for another electrical feed via a separate Right-of-Way ("ROW") path into the Naples load center, thereby reducing the impact of a loss of the existing transmission facilities on a common ROW.
- The ability to efficiently maintain transmission facilities and mitigate the risks of an impact on reliability.
- The opportunity, subject to final ROW siting under the Transmission Line Siting Act ("TLSA"), to efficiently and effectively integrate and serve new distribution substations that will be needed to serve projected load growth south of Fort Myers in Lee and Collier Counties.
- The ability to provide efficient future long range transmission expansion by acquiring additional ROW while practicable routes remain available.

The area south of Fort Myers is bounded on the north by the Fort Myers Plant and the Orange River Substation, on the west by the Gulf of Mexico and on the east by the county lines of Collier and Lee as shown in Attachment 1a and further outlined in Attachment 1b (the "Project Service Area"), which includes Lee County Electric Coop's (LCEC) load in this area. The Project Service Area has become a major load center, with

FPL serving approximately 357,700 customers (an approximate population of 594,900) as of January 2003. The load in this area is projected to continue to grow at an average rate of approximately 11,300 customers[1] or 68 MW per year. The load served by the existing transmission facilities has grown to a point where additional transmission capacity is needed to maintain reliable electric service. Without the Project, a single contingency affecting any one of six 230kV transmission line sections within the common ROW could cause a loss of service to approximately 104,200 customers or approximately 173,200 people in the Project Service Area. In addition, without the Project, overloads ranging from 102% to as high as 124% of the thermal MVA facility rating, under eleven separate single contingencies, would require the interruption of service of 7,200 to 41,100 customers (approximately 12,000 to 68,300 people) depending on the specific outage. Without the Project, FPL would not be in compliance with NERC Transmission System Standards and the level of reliability in the Project Service Area would be considerably reduced.

[redacted]

[1] Population growth is expected to be 18.800 per year.

[redacted] Additionally, the placement of the new transmission line within a new and separate ROW would significantly enhance the restoration of service to customers. [redacted] Therefore, the additional transmission capacity needed should be constructed over a separate ROW in order to maintain reliable electric service to an area that can be currently described as an electrical peninsula.

The Project best fulfills the needs and considerations listed above. Additional benefits achieved by placing the new transmission line in a separate ROW include:

- The opportunity to integrate new substations east of the existing ROW;
- Increased operational flexibility and reliability in scheduling and performing maintenance on the transmission facilities serving this area; and
- The ability to meet the future transmission needs in this rapidly developing area by obtaining additional ROW while practicable routes remain available.

Current projections indicate that substantial new load growth in the Project Service Area will occur in Collier and Lee Counties to the east of the common ROW. These areas are already earmarked for development. A new route sited to the east of the existing ROW would provide an opportunity to more effectively integrate the new substations required to serve this growing area.

Transmission facilities need to be taken out of service for maintenance without materially affecting reliability. Maintenance of one transmission line may require that other transmission lines in a common ROW also be taken out of service to facilitate maintenance. The establishment of a separate ROW will reduce the reliability risk associated with having multiple transmission facilities unavailable during maintenance. This will lower the possibility of customer outages during maintenance.

As previously discussed, this is a rapidly growing area and FPL expects to need an additional transmission circuit sometime within the next 10 to 15 years. Establishing a new ROW now could accommodate this additional line when the need materializes. Although FPL is not seeking a determination of need for a second future transmission circuit, the future need highlights an additional benefit of securing a geographically separate ROW while practicable, alternative routes remain available. Locating the additional future transmission line in the separate ROW would better distribute transmission capacity and thus further strengthen the reliability of FPL's service. This is in the long-term interest of FPL's customers.

In summary, the Project satisfies the need for a reliable supply of power for FPL's existing and new customers in the Project Service Area.

I. Description of FPL Electrical Facilities

Maps of FPL's transmission network indicating the location of generating plants, substations, and transmission lines are shown in Attachments 1a and 1b. There is no major generating source of power in southwest Florida to the south of the Orange River Substation. [redacted] The specific part of the electrical system in the Project Service Area can best be described as an electrical peninsula, as shown in Attachment 1b. This situation is of particular concern given the rate of load growth in the Project Service Area. A list of historic and forecasted FPL peak demand and energy is provided in the Florida Power & Light Company Ten Year Power Plant Site Plan 2002-2011, Schedules 7.1 and 7.2, submitted on April 1, 2002 to the Florida Public Service Commission (the "Commission"), incorporated herein as Attachment 2. Attachment 3 shows the summer and winter historic peak loads and projected peak loads for the Project Service Area. As reflected in Attachment 3, FPL's 2003 winter peak load forecast for FPL's West Region is 4,759MW. In fact, on January 24, 2003, FPL's peak load in the West Region was 4,781MW.[2] The corresponding actual winter peak load for

[2] On that same date, LCEC had an additional load of 834MW in the West Region served from FPL's Transmission System.

the Project Service Area, including both FPL and LCEC load, was 2,156MW.[3] This winter peak load has grown at an average rate of 5% per year for the last 11 years.

To address these increasing demands for electricity, FPL has increased the transmission capability in the Project Service Area over the last several years by adding 360MVars of capacitors, approximately 50 miles of 230kV and 138kV transmission lines, and approximately 537MVA of capacity upgrades on existing 230kV and 138kV transmission lines. Future growth now requires an additional electrical feed into the Project Service Area. The Project best meets the needs of the Project Service Area, as described more fully below.

II. The Collier-Orange River #3 Project

The Project consists of a new transmission line extending from FPL's Collier to Orange River Substations. The new line will be constructed with a single pole design on a new ROW, and will have a design and operating voltage of 230kV. Attachment 4 is a map showing the existing electrical facilities in the Project Service Area (black), a conceptual connection for the Project (blue), and other planned facilities indicated (red). The locations on the map of facilities not yet in service are approximate. In particular, the line depicting the Project is intended to indicate conceptually the electrical connection from an engineering and electrical planning perspective, without regard to specific environmental and other considerations that will affect the actual siting of the Project.

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[3] LCEC's contribution to the total was 229MW.

The actual route for the Project will be based on the results of the Project's certification process under the TLSA. Similarly, the future substation sites shown on Attachment 4 are approximate. The proposed in-service date for the Project is December 2005.

Project cost estimates are presented as a range to reflect cost variances that could result from different potential routes and conditions of certification that will be determined in the TLSA process. These estimated costs include land acquisition, environmental permitting and mitigation, ROW preparation, line construction of single pole concrete structures, and a minimum transmission line capacity of 759MVA. The total Project cost is estimated between $23M and $41M in 2003 dollars, subject to final ROW routing and conditions of certification. The corresponding range of present value revenue requirements ("PVRR") is $32M to $57M in 2003 dollars. A summary of the Project's major components and their estimated costs follows.

Collier Substation: Add line terminal	$0.4M
Orange River Substation: Expand site, add line terminal	$1.1M
Estimated Transmission Line Costs	$27.8M to $39.7M
(Potential Cost Savings)	($0.0 to $6.2M)[4]
Estimated Total Project Cost	$23.1M to $41.2M

[4] A portion of the estimated "Transmission Line Costs" may be offset by the use of an existing line segment (Transmission service from the Collier substation to the Orangetree substation, Project in-service date of 11/2003) depending on final route selection for the Project. The potential cost savings range from $0 (no use of line segment) to $6.2M (full

III. Transmission Planning Criteria and Process

Planning for the FPL transmission system employs practices and criteria that are consistent with the NERC Planning Standards contained within the NERC Transmission Systems Standards under System Adequacy and Security, included as Attachment 5a. The NERC Transmission System Standards specify transmission system operating scenarios that should be evaluated, and the levels of system performance that should be attained. FPL's transmission planning process is designed to ensure compliance with the NERC Transmission System Standards, and involves three major steps: (1) the preparation of system models, (2) the assessment of the transmission system, and (3) the development and evaluation of alternatives. A more detailed discussion of these steps is provided in Attachment 5b.

IV. Discussion of Needs and Benefits

The need for the Project is based on the following considerations:

- The need to serve the increasing load and customer base in the Project Service Area in a reliable manner consistent with NERC Transmission System Standards.
- The need for another electrical feed via a separate ROW path into the Naples load center, thereby reducing the impact of a loss of the existing transmission facilities on a common ROW.
- The ability to efficiently maintain transmission facilities and minimize the adverse effect on reliability.

---

use of line segment).

- The opportunity, subject to final ROW routing siting under the TLSA, to efficiently and effectively integrate and serve new distribution substations that will be needed to serve projected load growth in the Project Service Area.
- The ability to provide efficient future long range transmission expansion by acquiring additional ROW before Lee and Collier Counties are further developed and while practicable routes remain available.

The Project Service Area has become a major load center. As of January 2003, FPL was serving approximately 357,700 customers representing a population of approximately 594,900 people. Load in this area is projected to continue to grow at an average annual rate of approximately 11,300 new customers representing a population increase of approximately 18,800 people per year.[5] Presently, the forecasted load for the Project Service Area winter peak of 2005/2006 is 2,352MW. The forecasted 2006 summer peak load for the Project Service Area is 1,980MW (includes FPL and LCEC load). The load served by the existing transmission facilities in the Project Service Area has grown to a point where additional transmission facilities are needed to maintain reliable electric service. The injection of a new 230kV line in a separate ROW fulfills this need in the most effective manner, taking into account the considerations listed above. A discussion of the need and the relevant considerations follows.

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[5]An increase of 11,300 customers per year imposes an annual incremental 68MW of load on the FPL electrical system in the Project Service Area.

A. The Need to Serve Load Growth in a Reliable Manner Consistent With NERC Transmission System Standards

The Project is needed to comply with NERC Transmission System Standards for single contingency events (See Attachment 5a, page 1, Category B) during both winter and summer peak conditions. The increase in load will cause the capacity of the existing transmission system out of the Orange River Substation into the Collier Substation to be exceeded under single contingency conditions which, if not mitigated, would not be in compliance with NERC Transmission System Standards. As shown below, implementation of the Project will mitigate the overloads and low voltages that otherwise could occur in the Project Service Area as a result of a single contingency event.

1. Transmission Planning Analysis - Results Without The Collier-Orange River #3 Project

Page A.1 of Appendix A provides a "load flow diagram key" to assist in interpreting the load flow maps contained in Appendices A and B. Page A.2 shows a load flow output diagram of the year 2005/2006 winter peak load condition without any new transmission facilities. The diagram represents what is called the base case scenario or normal condition (i.e., no contingencies) for the year 2005/2006 winter peak load. The diagram shows that all facilities are operating within normal equipment ratings (i.e., no overloads or low voltages).

Without any new transmission facilities in service by December 2005, the following contingencies will cause unacceptable low voltages in the Project Service Area (See

Attachment 8) that could cause a loss of service for up to approximately 104,200 customers (approximately 173,200 people) as shown in Table I, below:

Jetport-Orange River 230kV line section

Jetport-San Carlos 230kV line section

Orange River-Vanderbilt 230kV line section

Corkscrew-Orange River 230kV line section

Livingston-Orangetree 230kV line section

Corkscrew-Orangetree 230kV line section

In addition, Pages A.3 through A.13 show overloads ranging from 102% to a high of 124% (See Attachment 8) of the thermal MVA facility rating caused by any of the following contingencies:

Alico autotransformer 230/138kV	(Page A.3)
Alico-Metro 138kV line section	(Page A.4)
Colonial-Edison 138kV line section	(Page A.5)
Colonial-Ft. Myers 138kV line section	(Page A.6)
Ft. Myers-Ft. Myers TP 138kV line section	(Page A.7)
Buckingham-Ft. Myers 138kV line section	(Page A.8)
Ft. Myers TP-Winkler 138kV line section	(Page A.9)
Metro-Winkler 138kV line section	(Page A.10)
Collier-Livingston 230kV line section	(Page A.11)
Buckingham-Gladiolus 138kV line section	(Page A.12)
Alico-San Carlos 230kV line section	(Page A.13)

In order to mitigate the overloads shown in Pages A.3 through A.13, it would be necessary to interrupt the service of approximately 7,200 to 41,100 customers (approximately 12,000 to 68,300 people) depending on the specific outage. Table I below shows a summary of the total number of customers whose service could be interrupted for each of the contingencies listed above if no new transmission facilities are placed in service by December 2005.

TABLE I

Outage of Transmission Facility	Estimated Customers Affected in 2005
Jetport-Orange River 230kV line section	104,200
Jetport-San Carlos 230kV line section	104,200
Orange River-Vanderbilt 230kV line section	104,200
Corkscrew-Orange River 230kV line section	104,200
Livingston-Orangetree 230kV line section	104,200
Corkscrew-Orangetree 230kV line section	104,200
Alico autotransformer 230/138kV	7,200
Alico-Metro 138kV line section	12,600
Colonial-Edison 138kV line section	13,400
Colonial-Ft. Myers 138kV line section	22,300
Ft. Myers-Ft. Myers TP 138kV line section	33,000
Buckingham-Ft. Myers 138kV line section	37,500
Ft. Myers TP-Winkler 138kV line section	33,000
Metro-Winkler 138kV line section	24,800
Collier-Livingstion 230kV line section	20,600
Buckingham-Gladiolus 138kV line section	7,200
Alico-San Carlos 230kV line section	41,100

Page A.14 shows a load flow output diagram of the year 2006 summer peak load condition without any new transmission facilities in service. This diagram represents what is called the base case scenario or normal condition (i.e., no contingencies) for the year 2006 summer peak load condition with all facilities operating within normal equipment ratings (i.e., no overloads or low voltages).

As shown on Page A.15, if no new transmission facilities are placed in service by the summer of 2006, the loss of the Jetport-Orange River 230kV line section (single contingency event) will cause overloads ranging from 102% to 103% of the thermal MVA facility rating which is greater than the applicable rating of 100% for some of the transmission facilities as well as low voltages in the Project Service Area. In order to mitigate the overloads shown in Page A.15, it would be necessary to interrupt the service of 2,200 customers.

2. Transmission Planning Analysis - Results With The Collier-Orange River #3 Project

The Project provides voltage support and relieves all single contingency thermal overloads shown in Pages A.3 through A.13 and A.15, as well as the six 230kV contingencies previously discussed, that would cause severe low voltage problems in the Project Service Area.

Page A.16 shows a load flow output diagram of the 2005 winter peak condition with the Project in service. Page A.17 shows a load flow output diagram of the 2006 summer peak condition with the Project in service. The construction of the Project provides a

separate 230kV path relative to the existing 138kV and 230kV transmission network in the Project Service Area. The Project unloads the existing parallel transmission network by providing another ROW path for power to flow from the Orange River Substation to the Naples load center.

Pages A.18 through A.35 show that with the Project in service, any one of the six 230kV contingencies that would cause severe low voltage or the loss of any of the facilities evaluated in Pages A.3 through A.13 and A.15 do not result in the overload or low voltage conditions of any transmission facilities.

3. Common ROW Exposure/Diversity of Transmission Facilities

When evaluating the performance of the transmission system, FPL evaluates common mode outages such as the loss of the transmission facilities on a common ROW and the effect of such outage on major load centers. This type of evaluation is consistent with NERC Transmission System Standards for Category D events (See Attachment 5a, page 4). Accordingly, it is necessary to take into consideration the exposure to the potential outage of the transmission facilities located on the common ROW serving this area.

[redacted]

As depicted in Attachment 4, the existing transmission facilities on the common ROW serve as the main feed of power for the Naples load center.

The loss of a common ROW is infrequent; however, it does occur in Florida from time to time. For example, in August 1998, a plane crash took out of service both 500kV circuits located on a common ROW north of FPL's Duval Substation located in Duval County. In November 1998, another plane crash took out both 115kV circuits on a common ROW out of FPL's Volusia Substation located in Volusia County. In February 2001, a fire occurred in Indian River County south of FPL's Poinsett Substation located in southeast Orange County took out both 500kV circuits that reside on a common ROW. Recently, on February 9, 2003, a Cessna single engine airplane clipped a transmission line in a common ROW containing five 230kV transmission lines east of FPL's Andytown Substation located in Broward County. Even though this event only damaged one of the transmission lines in this ROW, and the consequences were not severe, it is illustrative of the type of events that do occur from time to time and which can cause severe consequences.

In addition to airplane crashes and fires, events that can cause loss of common ROW include tornadoes, hurricanes or other natural disasters, and, in the post-September 11th world, sabotage and terrorism. While such threats exist for the entire FPL transmission system, the risks for the Project Service Area are particularly acute because of the potentially serious consequences in the event of such a loss. [redacted]

[redacted]

[redacted] Moreover, because the Project would continue to be in service because the Project is on a separate ROW, service unavailability could be rotated among some of the customers in the Project Service Area.

Thus, constructing the Project on a new ROW greatly reduces the number of customers that would lose power for an extended period of time in the event of a sustained outage of the transmission facilities on the common ROW south of Orange River and substantially enhances the restoration of service to customers.

B. Other Benefits

1. Maintenance Flexibility

From time to time, transmission facilities need to be taken out of service for maintenance without materially affecting reliability. Placement of the Project on a new ROW would lessen the likelihood of multiple transmission facilities being unavailable during maintenance periods, and thus mitigating the risks of an impact on reliability.

2. Facilitate Future Transmission Expansion

Current projections indicate that the majority of the new load growth is expected to occur to the east of the existing transmission facilities in the common ROW through Collier and Lee Counties. In order to serve this new load, it will be necessary to site new distribution substations to the east of the existing transmission lines, in areas already earmarked for development. In fact, several of these substations have been planned and others are under

consideration (See Attachment 4). The siting of these new substations in the future is expected to require that transmission facilities be rerouted and/or constructed to the east of the existing common ROW in order to serve these substations from the transmission system.

3. Future Load Growth

The composite load for the Project Service Area has grown at an average growth rate of 5% per year for the last 11 years. Evidence of the rapid growth in this area can be seen in the new residential and commercial development east of Interstate 75, and the existing development west of Interstate 75 becoming more dense. It is expected that this area will continue to grow at an average rate of 3% per year for the next nine years (See Attachment 3). It is expected that this load will continue to grow beyond the year 2012 with a significant majority of this growth occurring east of Interstate 75.

FPL is interested in planning for the future and expects to need an additional transmission circuit to serve the Project Service Area sometime within the next 10 to 15 years. Establishing a new ROW now could accommodate this additional line when the need materializes. Although FPL is not seeking a determination of need for a second future transmission circuit, the future need highlights an additional benefit of securing a geographically separate ROW while practicable, alternative routes remain available. Locating the additional future transmission line in the separate ROW would better distribute transmission capacity and thus further strengthen the reliability of FPL's service. This is in the long-term interest of FPL's customers.

C. Summary of Collier-Orange River #3 Project Benefits

As discussed above, the construction of the Project provides the following benefits to the Project Service Area:

- Mitigates thermal overloads and low voltage conditions in accordance with NERC Transmission System Standards to provide reliable service to existing and new customers as the area's load continues to grow;
- Increases the reliability of the Project Service Area by providing an alternate transmission path for power to flow from the Orange River Substation via a separate ROW to the Naples load center;
- Provides for the ability to efficiently maintain transmission facilities and minimize the adverse effect on reliability;
- Provides the opportunity, subject to final ROW siting under the TLSA to efficiently and effectively integrate and serve new distribution substations that will be needed to serve projected load growth in the Project Service Area; and
- Provides for future long range transmission expansion by acquiring additional ROW while practicable routes remain available.

In summary, the Project ensures that FPL customers in the Project Service Area will continue to be served reliably and effectively.

V. Discussion of Alternatives

In order to continue to serve the load in the Project Service Area beyond December 2005 in a reliable and effective manner consistent with NERC planning standards, several

alternatives were investigated.[6] The factors used to evaluate the performance of the alternatives included reliability, cost, ROW diversity, feasibility, operational flexibility, and compatibility with long range plans. Those alternatives are discussed and assessed below. Further, Attachment 7 includes a matrix comparing each of the alternatives.

Alternative I – Placement of Collier-Orange River 230kV #3 on Existing Common ROW

Alternative I provides a 230kV parallel path to the existing 138kV and 230kV network south of the Fort Myers and Orange River Substation, using the remaining capability on the existing common ROW that contains most of the existing transmission lines into the Project Service Area. The estimated capital cost of this alternative is projected to be $17M in 2003 dollars. The corresponding PVRR is $25M in 2003 dollars. Alternative I unloads the existing parallel network and provides another electrical circuit to the Naples load center. This alternative provides adequate voltage support and relieves single contingency thermal overloads.

Page B.1 of Appendix B shows a load flow output diagram of the 2005 winter peak condition with Alternative I in service under normal conditions. Page B.2 shows a load flow output diagram of the 2006 summer peak condition with Alternative I in service under normal conditions. Under normal conditions, with Alternative I in service, all

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[6] Consistent with Rule 25-22.076, several transmission alternatives were considered. In addition, FPL considered as another option the feasibility of cost-effectively avoiding additional transmission facilities by siting generation in the Project Service Area. As discussed in Alternative V, such an option was determined to be economically infeasible.

facilities are within applicable thermal ratings and acceptable voltages. Further, pages B.3 through B.20 show that with Alternative I in service, any one of the six 230kV contingencies identified in Section IV.A.1 and evaluated in Pages A.3 through A.13 and A.15 would not result in the overload or low voltage of any other transmission facilities.

However, Alternative I has several major drawbacks. First, it does not address the reliability risks associated with the common ROW issue discussed in Section IV.A.3.

[redacted]

Second, this alternative does not facilitate the expected future expansion of the transmission system to integrate and serve new distribution substations as the load increases in the Project Service Area. Finally, Alternative I does not provide the additional benefits discussed in Section IV.B above. For these reasons, Alternative I was rejected.

Alternative II - Orange River-Collier Area 500kV Transmission Line

Alternative II introduces a 500kV transmission injection into the Project Service Area, thus providing needed voltage support and relieving numerous single contingency thermal overloads. This project would require a new transmission ROW extending from

a point along the existing Andytown-Orange River 500kV transmission line to a new substation in the Collier area (approximately 25 to 30 miles). The new substation in the Collier area would require the installation of 500kV to 230kV transformation equipment, along with the looping of two of the existing Collier-Orange River 230kV transmission lines into the new substation.

The estimated capital cost of Alternative II is projected to be $99M in 2003 dollars. The corresponding PVRR is $138M in 2003 dollars.

The major drawbacks for this alternative are the high cost, the failure to facilitate expansion of the transmission system to integrate and serve future distribution substations, and questionable ability to meet the recommended in-service date of December 2005 due to increased permitting and construction schedules associated with a 500kV line. Therefore, this alternative was rejected.

Alternative III – Alico-Orange River 230kV Transmission Line

Alternative III introduces an additional 230kV transmission line from FPL's Orange River Substation into FPL's Alico Substation. This alternative does not fully comply with NERC Transmission System Standards. This alternative provides minimal voltage support for the Project Service Area and does not relieve single contingency outages in accordance with the NERC Transmission System Standards. Overloads and low voltages remain for two contingencies, as shown on Pages B.21 and B.22. Because this alternative

will not relieve all of the thermal overloads and low voltages due to a single contingency, customer interruptions may still be necessary until the out-of-service transmission facilities can be repaired. Also, the voltage support in the Project Service Area would not be adequate for the more severe 230kV contingencies. For these reasons, this alternative was rejected.

Alternative IV – Ft. Myers-Collier 138kV Transmission Line

Alternative IV introduces an additional 138kV transmission line from FPL's Fort Myers Plant into FPL's Collier Substation. This alternative does not comply with NERC Transmission System Standards. This alternative provides minimal voltage support and relieves only some minor single contingency thermal overloads. Alternative IV would not eliminate the more severe 230kV transmission overloads resulting from a single contingency and its effectiveness would be limited to only a few contingencies. Overloads and low voltages would remain for two contingencies, as shown on Pages B.23 and B.24. Because this alternative will not relieve all of the thermal overloads and low voltages resulting from a single contingency, customer interruptions may be necessary until the out-of-service transmission facilities can be repaired. Also, the voltage support in the Project Service Area would not be adequate for the more severe 230kV contingencies. Therefore, this alternative was rejected.

Alternative V - Siting Generation Near the Naples Load Center

One alternative to mitigate single contingency overloads and low voltages in the Project Service Area is to site new generation near the Naples load center. Siting of new

generation near the Naples load center (e.g., FPL's Collier Substation) would reduce the power flow into the area to maintain adequate voltage levels. However, siting new generation (2 combustion turbines) near the Naples load center was found to be uneconomic ($101M NPV) relative to the Project. Therefore, this alternative was rejected.

VI. Adverse Consequences Of Not Constructing the Collier-Orange River 230 kV Project

The purpose of and need for the Project is to comply with NERC Transmission System Standards and to reduce the potential for extended service unavailability in the Project Service Area. The Project will assure that a reliable and diverse supply of power is maintained for existing and future customers in the Project Service Area. If the Project is not built or if it is delayed, a less reliable alternative would have to be employed, thereby jeopardizing reliable service to existing and future customers in the Project Service Area.

VII: Conclusion

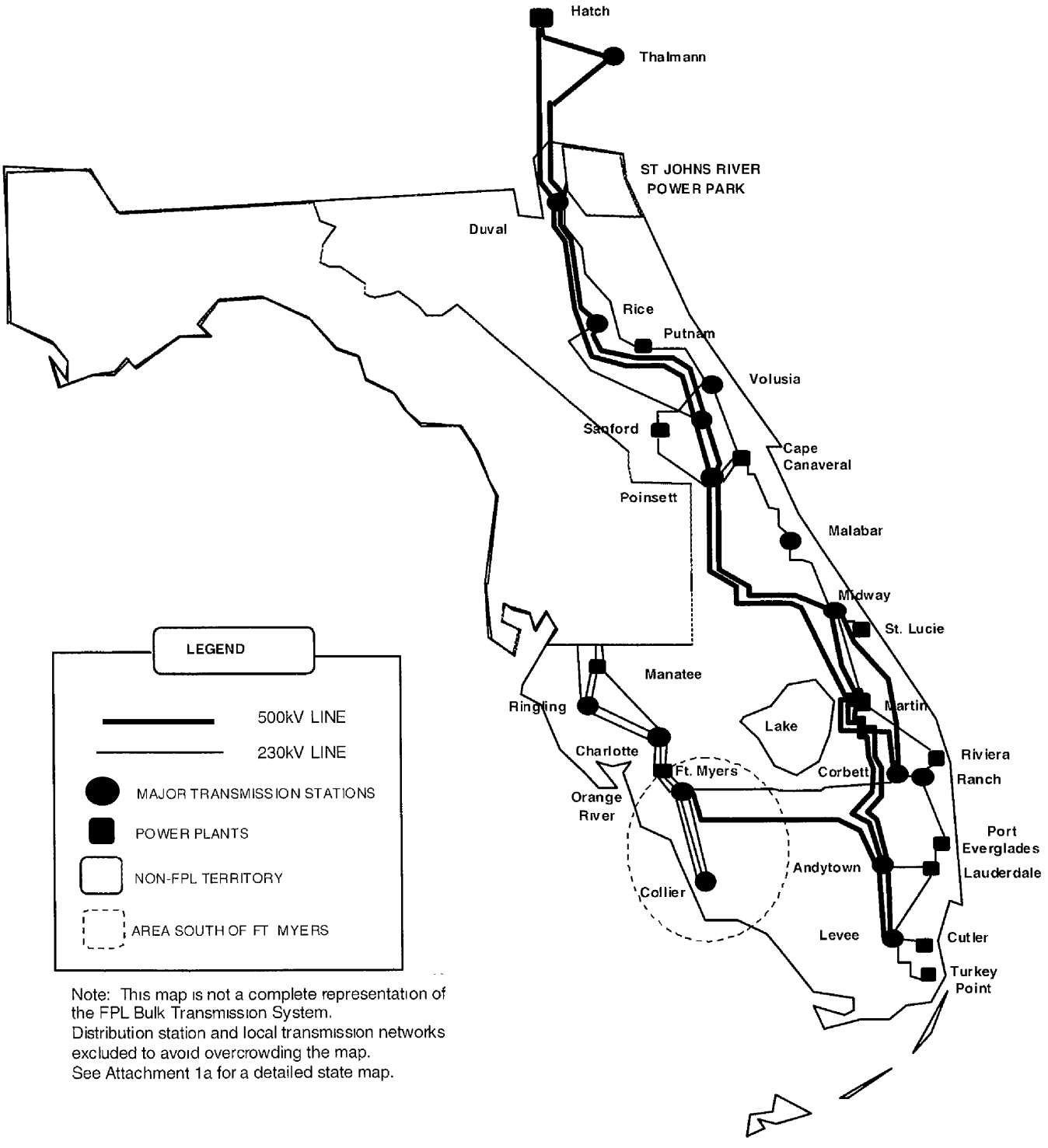
The Project is needed by December 2005 to maintain the reliability of power supply into the Project Service Area. The other alternatives to address this situation are either too costly, do not provide for the operation of the facilities within the rated thermal and voltage limits in the event of a single contingency consistent with NERC Transmission System Standards, do not provide the advantages and benefits of a separate electrical path into the area, or otherwise are not viable. The Commission, therefore, should grant FPL's Petition for a Determination of Need for the Collier-Orange River #3 Project.

VIII. ATTACHMENTS

ATTACHMENT 1a

ATTACHMENT 1b

FPL Substation and Transmission System Configuration



Note: This map is not a complete representation of the FPL Bulk Transmission System.
Distribution station and local transmission networks excluded to avoid overcrowding the map.
See Attachment 1a for a detailed state map.

ATTACHMENT 2

Schedule 7.1
Forecast of Capacity, Demand, and Scheduled Maintenance At Time Of Summer Peak

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Year	Total Installed 1/ Capacity MW	Firm Capacity Import MW	Firm Capacity Export MW	Firm QF MW	Total Capacity Available 2/ MW	Total Peak 3/ Demand MW	DSM 4/ MW	Firm Summer Peak Demand MW	Reserve Margin Before Maintenance 5/ MW	Reserve Margin Before Maintenance 5/ % of Peak	Scheduled Maintenance MW	Reserve Margin After Maintenance 6/ MW	Reserve Margin After Maintenance 6/ % of Peak
2002	17,860	2,403	0	877	21,140	19,131	1,414	17,717	3,423	19.3	0	3,423	19.3
2003	19,135	2,474	0	877	22,486	19,765	1,491	18,274	4,212	23.0	0	4,212	23.0
2004	19,135	2,474	0	877	22,486	20,226	1,570	18,656	3,830	20.5	0	3,830	20.5
2005	21,031	1,758	0	867	23,656	20,719	1,651	19,068	4,588	24.1	0	4,588	24.1
2006	21,031	1,757	0	734	23,522	21,186	1,729	19,457	4,065	20.9	0	4,065	20.9
2007	22,138	1,310	0	734	24,182	21,556	1,807	19,749	4,433	22.4	0	4,433	22.4
2008	22,138	1,310	0	734	24,182	21,870	1,886	19,984	4,198	21.0	0	4,198	21.0
2009	23,245	1,310	0	683	25,238	22,271	1,962	20,309	4,929	24.3	0	4,929	24.3
2010	24,352	382	0	639	25,373	22,687	1,987	20,700	4,673	22.6	0	4,673	22.6
2011	25,459	382	0	594	26,435	23,106	1,987	21,119	5,316	25.2	0	5,316	25.2

1/ Capacity additions and changes projected to be in-service by June 1st are considered to be available to meet Summer peak loads which are forecasted to occur during August of the year indicated. All values are Summer net MW

2/ Total Capacity Available=Col.(2) + Col.(3) - Col.(4) + Col.(5)

3/ These forecasted values reflect the Most Likely forecast without DSM.

4/ The MW shown represent cumulative load management capability plus incremental conservation from 1/99 - on. They are not included in total additional resources but reduce the peak load upon which Reserve Margin calculations are based.

5/ Margin (%) Before Maintenance = Col.(10) / Col.(9)

6/ Margin (%) After Maintenance =Col.(13) / Col.(9)

ATTACHMENT 2

Schedule 7.2
Forecast of Capacity , Demand, and Scheduled Maintenance At Time of Winter Peak

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Year	Total Installed 1/ Capability MW	Firm Capacity Import MW	Firm Capacity Export MW	Firm QF MW	Total Capacity Available 2/ MW	Total Peak 3/ Demand MW	DSM 4/ MW	Firm Winter Peak Demand MW	Reserve Margin Before Maintenance 5/ MW	Reserve Margin Before Maintenance 5/ % of Peak	Scheduled Maintenance MW	Reserve Margin After Maintenance 6/ MW	Reserve Margin After Maintenance 6/ % of Peak
2001/02	17,730	1,910	0	886	20,526	18,968	1,589	17,379	3,147	18.1	0	3,147	18.1
2002/03	20,007	2,634	0	877	23,518	19,551	1,643	17,908	5,610	31.3	0	5,610	31.3
2003/04	20,369	2,673	0	877	23,919	19,976	1,691	18,285	5,634	30.8	0	5,634	30.8
2004/05	20,369	2,623	0	867	23,859	20,418	1,738	18,680	5,179	27.7	0	5,179	27.7
2005/06	22,402	1,860	0	734	24,996	20,854	1,786	19,068	5,928	31.1	0	5,928	31.1
2006/07	22,402	1,860	0	734	24,996	21,204	1,831	19,373	5,623	29.0	0	5,623	29.0
2007/08	23,598	1,317	0	734	25,649	21,538	1,875	19,663	5,986	30.4	0	5,986	30.4
2008/09	23,598	1,317	0	734	25,649	21,966	1,918	20,048	5,601	27.9	0	5,601	27.9
2009/10	24,795	1,317	0	683	26,795	22,366	1,955	20,411	6,384	31.3	0	6,384	31.3
2010/11	25,992	389	0	595	26,976	22,785	1,955	20,830	6,146	29.5	0	6,146	29.5

1/ Capacity additions and changes projected to be in-service by January 1st are considered to be available to meet Winter peak loads which are forecast to occur during January of the "second" year indicated. All values are Winter net MW.

2/ Total Capacity Available = Col.(2) + Col.(3) - Col.(4) + Col.(5).

3/ These forecasted values reflect the Most Likely forecast without DSM.

4/ The MW shown represent cumulative load management capability plus incremental conservation. They are not included in total additional resources but reduce the peak load upon which Reserve Margin calculations are based.

5/ Margin (%) Before Maintenance = Col.(10) / Col.(9)

6/ Margin (%) After Maintenance = Col (13) / Col.(9)

ATTACHMENT 3

FPL West Region and South of Ft. Myers Loads

Historical and Forecasted Peak Loads (MW)

Year	West Region FPL		Area south of Ft. Myers (FPL + LCEC)	
	Winter	Summer	Winter	Summer
1991	2592	2310	1169	1081
1992	2953	2445	1332	1144
1993	2973	2566	1341	1201
1994	2943	2658	1327	1244
1995	3893	2976	1756	1393
1996	4752	2807	2143	1314
1997	3924	3168	1770	1483
1998	3133	3373	1413	1578
1999	3964	3388	1788	1586
2000	3892	3443	1755	1611
2001	3773	3499	1702	1637
2002	4020	3485	1813	1631
2003	4759	3803	2146	1780
2004	4906	3947	2213	1847
2005	5060	4084	2282	1911
2006	5216	4229	2352	1979
2007	5368	4372	2421	2046
2008	5522	4511	2490	2111
2009	5667	4647	2556	2175
2010	5813	4790	2622	2242
2011	5959	4932	2688	2308
2012	6108	5075	2755	2375

	Area south of Ft. Myers	
	Winter	Summer
Historical Growth (11 years)	5.01%	4.62%
Forcasted Growth (Through 2012)	3.15%	3.72%

ATTACHMENT 4

COLLIER-ORANGE RIVER #3 PROJECT

The Transmission Planning Criteria

The NERC Transmission System Standards are divided into categories A, B, C and D. FPL utilizes these Standards for its planning criteria. Category A addresses normal system conditions with all facilities in service. Category B addresses system conditions following the loss of a single facility. Category C addresses system conditions following the loss of two or more facilities. Finally, Category D addresses system conditions following an extreme event where multiple facilities are removed from service.

The need for transmission system upgrades is most frequently based on potential overload conditions associated with the Category B contingencies (single contingency) listed in Table 1 of this Attachment 5a. Generally, Category C and D multiple contingency analysis is used to identify potential situations of cascading interruptions and/or instability.

The planned transmission system with its expected loads and transfers must be stable and within applicable ratings for all Category A, B, and C contingency scenarios.

The effect of Category D contingencies on system stability are also evaluated. The design of new transmission connections should take into account and minimize, to the extent practical, the adverse consequences of Category D contingencies. Lower probability Category D contingencies, when they occur in combination with forecasted demand levels and firm interchange transactions, must not result in uncontrolled, cascading interruptions. While

controlled interruption of load and/or opening of transmission circuits may be needed, the system should be within its emergency limits and capable of rapid restoration after operation of automatic controls.

Attachment 5a

Table I. NERC Transmission Systems Standards — Normal and Contingency Conditions

Category	Contingencies		System Limits or Impacts				
	Initiating Event(s) and Contingency Element(s)	Elements Out of Service	Thermal Limits	Voltage Limits	System Stable	Loss of Demand or Curtailed Firm Transfers	Cascading [c] Outages
A - No Contingencies	All Facilities in Service	None	Applicable Rating [a] (A/R)	Applicable Rating [a] (A/R)	Yes	No	No
B - Event resulting in the loss of a single element.	Single Line Ground (SLG) or 3-Phase (3Ø) Fault, with Normal Clearing: 1 Generator 2. Transmission Circuit 3. Transformer Loss of an Element without a Fault.	 Single Single Single Single	 A/R A/R A/R A/R	 A/R A/R A/R A/R	 Yes Yes Yes Yes	 No [b] No [b] No [b] No [b]	 No No No No
	Single Pole Block, Normal Clearing [f]: 4. Single Pole (dc) Line	Single	A/R	A/R	Yes	No [b]	No
C - Event(s) resulting in the loss of two or more (multiple) elements.	SLG Fault, with Normal Clearing [f]: 1. Bus Section 2. Breaker (failure or internal fault)	 Multiple Multiple	 A/R A/R	 A/R A/R	 Yes Yes	 Planned/Controlled [d] Planned/Controlled [d]	 No No
	SLG or 3Ø Fault, with Normal Clearing [f], Manual System Adjustments, followed by another SLG or 3Ø Fault, with Normal Clearing [f]: 3. Category B (B1, B2, B3, or B4) contingency, manual system adjustments, followed by another Category B (B1, B2, B3, or B4) contingency	Multiple	A/R	A/R	Yes	Planned/Controlled [d]	No
	Bipolar Block, with Normal Clearing [f]: 4. Bipolar (dc) Line Fault (non 3Ø), with Normal Clearing [f]: 5 Any two circuits of a multiple circuit towerline [g]	 Multiple Multiple	 A/R A/R	 A/R A/R	 Yes Yes	 Planned/Controlled [d] Planned/Controlled [d]	 No No
	SLG Fault, with Delayed Clearing [f] (stuck breaker or protection system failure): 6. Generator 8. Transformer 7. Transmission Circuit 9. Bus Section	 Multiple Multiple	 A/R A/R	 A/R A/R	 Yes Yes	 Planned/Controlled [d] Planned/Controlled [d]	 No No

D [e] B Extreme event resulting in two or more (multiple) elements removed or cascading out of service	3Ø Fault, with Delayed Clearing [f] (stuck breaker or protection system failure): 1. Generator 2. Transmission Circuit 3. Transformer 4. Bus Section --- 3Ø Fault, with Normal Clearing [f]: 5. Breaker (failure or internal fault) --- Other: 6. Loss of towerline with three or more circuits 7. All transmission lines on a common right-of way 8. Loss of a substation (one voltage level plus transformers) 9. Loss of a switching station (one voltage level plus transformers) 10. Loss of a all generating units at a station 11 Loss of a large load or major load center 12 Failure of a fully redundant special protection system (or remedial action scheme) to operate when required 13. Operation, partial operation, or misoperation of a fully redundant special protection system (or remedial action scheme) for an event or condition for which it was not intended to operate 14. Impact of severe power swings or oscillations from disturbances in another Regional Council.	Evaluate for risks and consequences. ▪ May involve substantial loss of customer demand and generation in a widespread area or areas. ▪ Portions or all of the interconnected systems may or may not achieve a new, stable operating point. ▪ Evaluation of these events may require joint studies with neighboring systems. ▪ Document measures or procedures to mitigate the extent and effects of such events. ▪ Mitigation or elimination of the risks and consequences of these events shall be at the discretion of the entities responsible for the reliability of the interconnected transmission systems.

a) Applicable rating (A/R) refers to the applicable normal and emergency facility thermal rating or system voltage limit as determined and consistently applied by the system or facility owner. Applicable ratings may include emergency ratings applicable for short durations as required to permit operating steps necessary to maintain system control. All ratings must be established consistent with applicable NERC Planning Standards addressing facility ratings.

b) Planned or controlled interruption of electric supply to radial customers or some local network customers, connected to or supplied by the faulted element or by the affected area, may occur in certain areas without impacting the overall security of the interconnected transmission systems. To prepare for the next contingency, system adjustments are permitted, including curtailments of contracted firm (non-recallable reserved) electric power transfers.

c) Cascading is the uncontrolled successive loss of system elements triggered by an incident at any location. Cascading results in widespread service interruption which cannot be restrained from sequentially spreading beyond an area predetermined by appropriate studies.

d) Depending on system design and expected system impacts, the controlled interruption of electric supply to customers (load shedding), the planned removal from service of certain generators, and/or the curtailment of contracted firm (non-recallable reserved) electric power transfers may be necessary to maintain the overall security of the interconnected transmission systems.

e) A number of extreme contingencies that are listed under Category D and judged to be critical by the transmission planning entity(ies) will be selected for evaluation. It is not expected that all possible facility outages under each listed contingency of Category D will be evaluated.

f) Normal clearing is when the protection system operates as designed and the fault is cleared in the time normally expected with proper functioning of the installed protection systems. Delayed clearing of a fault is due to failure of any protection system component such as a relay, circuit breaker, or current transformer (CT), and not because of an intentional design delay.

g) System assessments may exclude these events where multiple circuit towers are used over short distances (e.g., station entrance, river crossings) in accordance with Regional exemption criteria.

ATTACHMENT 5b

The Transmission Planning Process

Step 1: Preparation of System Models

To prepare system models[1], regional load profiles must be developed for the current year and for representative years of the ten-year planning horizon. These profiles incorporate the most recent substation load information available. Thus, the distribution planning groups in each region are asked to provide Transmission Planning with historical and projected substation loads and future distribution substation data.

Once the load profiles have been developed, they are used as input into the load flow, fault analysis and stability programs, which simulate and study the behavior of the transmission system. Other major inputs into these programs are the generation dispatch and the base transmission system representation including expected line and equipment performance data. Firm long-term transmission service obligations are incorporated into the programs. The base transmission system representation incorporates existing and planned facilities. In addition, appropriate operating criteria involving voltage limits, generator reactive limits and transformer taps are observed. All major utilities to which FPL is interconnected are also represented.

[1] The models used for this analysis are the Florida Reliability Coordinating Council's year 2002 summer and winter load flow databank cases modeling expected system conditions in year 2005 and 2006. These models are run on Power Technologies Incorporated (PTI) load flow programs which are commonly used and accepted in the electric industry.

Step 2: Transmission System Assessment

Using the system models developed in Step 1, outage contingencies are simulated using load flow and stability programs. These outage contingencies consist of two types as discussed in Attachment 5a: (1) single events with a higher probability of occurrence such as the loss of one transmission line section or autotransformer and (2) multiple events such as the loss of all transmission lines in a common transmission ROW. Generally, the latter event has a lower probability of occurrence but can result in consequences that are more severe. Credible single and multiple contingencies are analyzed. For each of these contingencies, the response of the power system is analyzed and violations of the planning criteria are evaluated.

Step 3: Development and Evaluation of Alternatives

This step addresses potential criteria violations. First, switching techniques and other operational procedures are tested to determine if such actions resolve the problems. If satisfactory operational procedures cannot be implemented, several alternatives for transmission system reinforcements are developed. Cost estimates for the viable alternatives are then determined. Subsequently these alternatives are evaluated (See Attachment 7). During this step, the potential for alternative ROW's, to the extent practicable, are assessed. After evaluating the transmission system project alternatives, the project that best meets the requirements and other considerations is selected.

ATTACHMENT 6

ATTACHMENT 6

Decision-Making Analysis

Alternatives are evaluated taking into consideration pertinent factors or categories such as reliability (i.e., electrical performance), cost, construction difficulties, compatibility with long range plans, right-of-way diversity, operational flexibility, and construction feasibility. Each of these important categories is used to compare the alternatives to each other by assigning specific weights to each category for each alternative. The sum of the products for each category will determine which alternative is recommended based on all the pertinent factors.

In this case, the Project met FPL's needs in the most effective manner and, therefore, is the alternative that FPL is pursuing. The following Decision Making Worksheet provides the key elements of the decision-making analysis.

Decision Making Worksheet

DECISION STATEMENT		rovide adequate and reliable service in an economical manner for the Collier area served by the Collier and Orange River 30kV substations.											
OBJECTIVES		LTERNATIVES: All in service dates are based on the High Band Load forecast											
		I/S YEAR		Project	I/S YEAR		Alternative #I	I/S YEAR		Alternative #II	I/S YEAR		Alternative #V
		2005		Construct a 230kV Transmission line on a new R/W corridor from Collier to Orange River substations. (Collier-Orange River #3). Construct corresponding line terminal and associated equipment at Orange River and Collier substation.	2005		Construct approximately 37 miles of 230kV Transmission line on existing R/W corridor from Collier to Orange River substations. (Collier Orange River #3). Construct corresponding line terminal and associated equipment at Orange River and Collier substation.	2005		Build a new 500kV station. Construct approximately 42 miles of 500kV Transmission line on new 21 mile R/W corridor to loop the Andytown-Orange River 500kV line into the new station. Install a new 500/230kV, 1500MVA autotransformer at the new station Loop the existing Collier-Orange River 230kV lines #1 & #2 into the new station by constructing 19.5 miles of double circuit and 12 miles of single circuit.	2008		Build new generation near the Naples load center. Total of 2 CTs: one CT (160MW) in 2005 and the second CT (160MW) in
REQUIREMENTS		Yes	No	Information	Yes	No	Information	Yes	No	Information	Yes	No	Information
Alternative must provide for reliable service to area customers		X			X			X			X		
Alternative Plan is feasible to construct		X			X			X			X		
DESIRES	VL	Score	VL*S	Information	Score	VL*S	Information	Score	VL*S	Information	Score	VL*S	Information
Minimize Price (Present value of revenue requirements)	10.0	7.4	74	$31,977,867 to $56,958,419 PVRR	10	100	$24,823,106 PVRR	1	10	$137,553,022 PVRR	3.9	39	$101,000,000 PVRR
Maximize reliability of service to customers	8.2	9	83	Single contingency causes loss of load. New line mitigates single contingency problems.	9	83	Single contingency causes loss of oad. New line mitigates single contingency problems.	10	92	Single contingency causes loss of load. New line mitigates single contingency problems.	9	83	Single contingency causes loss of oad. Mitigates single ontingency problems.
Right-of-way diversity	7.8	7	53	Reduces restoration time for loss of the right-of-way south of Orange River.	1	8	Increases the restoration time for the loss of the right-of-way south of Orange River.	10	76	Reduces restoration time for loss of the right-of-way south of Orange River.	4	30	Does not impact restoration time for the loss of the right-of-way South of Orange River
Maximize compatibility with Long range plans.		10	61	May allow for efficient future load growth by providing service to future distribution stations.	5	31	Does not allow for efficient integration to serve future distribution substations.	6	37	Improves load serving capability and allows for minimal integration to serve future distribution substations in South Collier County.	5	31	Allows for future load growth but oes not provide efficient service o serve future distribution stations.
Provides operational flexibility	6.3	8	42	Provides maximum operational flexibility.	6	32	Provides less operational flexibility for maintenance.	9	48	Provides maximum operational flexibility.	10	53	Provides maximum operational exibility by providing a source rom Collier.
Minimize construction difficulties	4.9	5	20	Requires minimum line clearances. Transmission route may pass near protected, commercial, and residential areas. EMF mitigation.	10	49	tequires minimum line clearances	2	10	Requires minimum line clearances. Transmission route may pass near protected, commercial, and residential areas. EMF mitigation.	1	5	Requires some line clearances for the integration of the new generation. Siting generation in the Collier area problematic.
TOTAL VALUE SCORE		338		PREFERRED ALTERNATIVE **	302			272			241		

Decision Making Worksheet

DECISION STATEMENT		Provide adequate and reliable service in an economical manner for the Collier area served by the Collier and Orange River 230kV substations.								
OBJECTIVES		ALTERNATIVES: All in service dates are based on the High Band Load forecast								
		I/S YEAR		Alternative # III	I/S YEAR		Alternative #IV	I/S YEAR		
		2005		Construct approximately 19.4 miles of 230kV Transmission line on existing R/W corridor from Alico to Orange River substations. Install a new 230/138kV, 224MVA autotransformer at Alico. Construct corresponding line terminal and associated equipment at Oran	2005		Construct approximately 46 miles of 138kV Transmission line on a new R/W corridor from Ft. Myers to Collier substations. Construct corresponding line terminal and associated equipment at Ft. Myers and Collier substation.			
REQUIRMENTS		Yes	No	Information	Yes	No	Information	Yes	No	Information
Alternative must provide for reliable service to area customers			X	Does not meet NERC planning criteria.		X	Does not meet NERC planning criteria.			
Alternative Plan is feasible to construct		X			X					
DESIRES	VL	Score	VL'S	Information	Score	VL'S	Information	Score	VL'S	Information
Minimize Price (Present value of revenue requirements)	10.0									
Maximize reliability of service to customers	9.2									
Right-of-way diversity	7.8									
Maximize compatibility with Long range plans.	6.1									
Provides operational flexibility	5.3									
Minimize construction difficulties	4.9									
TOTAL VALUE SCORE										

ATTACHMENT 8

Load Flow Project Summary Table
(From Load Flow Diagrams in Appendix A)

ATTACHMENT 8

Load Flow Project Summary Table
(From Load Flow Diagrams in Appendix A)

ATTACHMENT 8

Load Flow Project Summary Table
(From Load Flow Diagrams in Appendix A)

EXHIBIT "A"

(REDACTED)

Appendices A & B

FLORIDA POWER & LIGHT COMPANY'S PETITION TO DETERMINE NEED FOR:

THE COLLIER-ORANGE RIVER #3 PROJECT

DOCKET NO. 030084-EI

FEBRUARY 26, 2003

FPL

APPENDIX A

Load Flow Diagrams – With and Without Project

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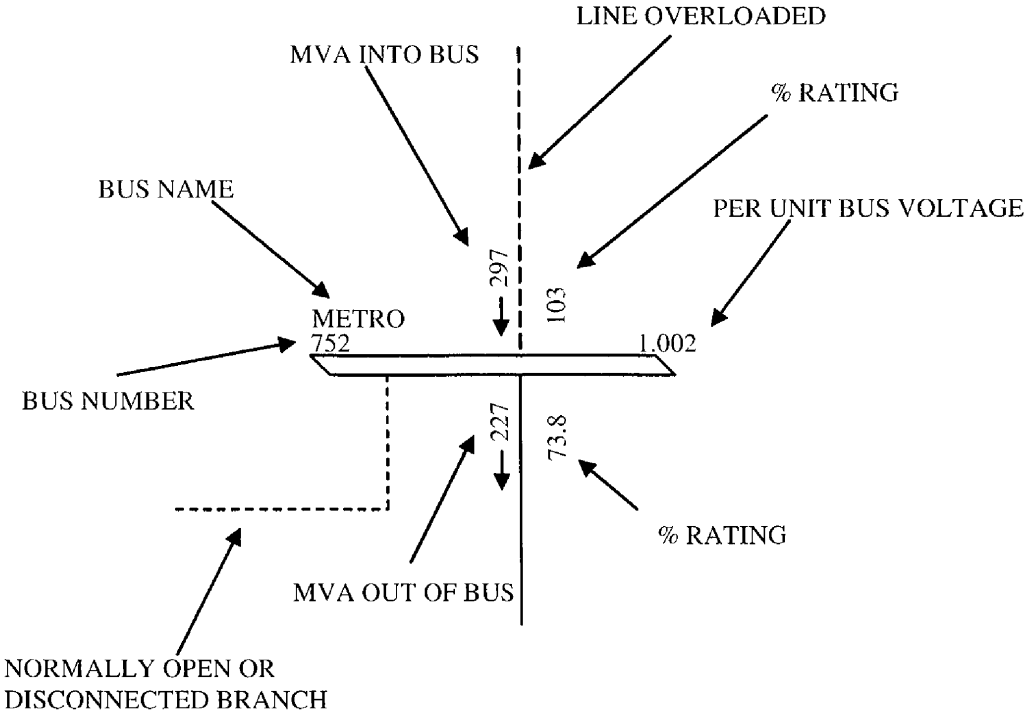
Loadflow Diagram Key



PAGES A.2 - A.35 REDACTED

APPENDIX B

Load Flow Diagrams – Alternatives

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PAGES B.1 – B.24 REDACTED