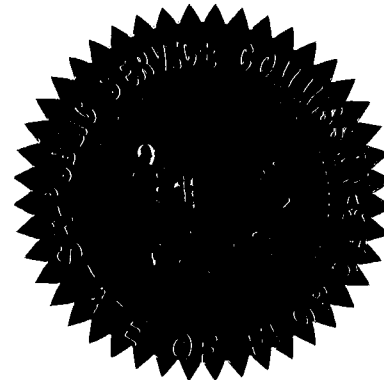


BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 070193-EI

In the Matter of:

PETITION FOR DETERMINATION OF NEED FOR
WILLOW OAK-DAVIS 230 kV TRANSMISSION
LINE IN POLK AND HILLSBOROUGH COUNTIES,
BY TAMPA ELECTRIC COMPANY.



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PROCEEDINGS: HEARING

BEFORE: CHAIRMAN LISA POLAK EDGAR
COMMISSIONER MATTHEW M. CARTER, II
COMMISSIONER KATRINA J. MCMURRIAN
COMMISSIONER NANCY ARGENZIANO
COMMISSIONER NATHAN A. SKOP

DATE: Thursday, June 11, 2007

TIME: Commenced at 9:30 a.m.
Concluded at 9:42 a.m.

PLACE: Betty Easley Conference Center
Room 148
4075 Esplanade Way
Tallahassee, Florida

REPORTED BY: JANE FAUROT, RPR
Official FPSC Reporter
(850) 413-6732

1 APPEARANCES:

2 LEE L. WILLIS, ESQUIRE and JAMES D. BEASLEY, ESQUIRE,
3 Ausley Law Firm, Post Office Box 391, Tallahassee, Florida
4 32302, appearing on behalf of Tampa Electric Company.

5 MARTHA BROWN, ESQUIRE, FPSC General Counsel's Office,
6 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850,
7 appearing on behalf of the Commission Staff.

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I N D E X

WITNESSES

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NAME:

PAGE NO.

PAUL M. DAVIS

Prefiled Direct Testimony Inserted

8

EXHIBITS

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NUMBER:		ID.	ADMTD.
1	Comprehensive Exhibit List	7	7
2	Composite Stip-2	7	7
3	TECO-1	7	7

P R O C E E D I N G S

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CHAIRMAN EDGAR: Good morning. I call this hearing to order.

And we will begin by asking our staff to read the notice.

MS. BROWN: By notice issued April 19th, 2007, this time and place is set for a hearing in Docket Number 070193-EI, petition for determination of need for Willow Oak-Davis 230 kV transmission line in Polk and Hillsborough Counties by Tampa Electric Company. The purpose of the hearing is set out in the notice.

CHAIRMAN EDGAR: Thank you, Ms. Brown.

And we'll take appearances.

MR. WILLIS: I'm Lee L. Willis appearing together with James D. Beasley of the firm of Ausley and McMullen, Post Office Box 391, Tallahassee, Florida 32302, appearing on behalf of Tampa Electric Company.

CHAIRMAN EDGAR: Thank you. And Staff.

MS. BROWN: Martha Carter Brown on behalf of the Commission.

CHAIRMAN EDGAR: Thank you.

Ms. Brown, I understand we have one preliminary matter that we need to address?

MS. BROWN: We do, Commissioner. There is a typographical error in the prehearing order, found on Page 5 of

1 the prehearing order. The word "TECO's" should replace "FPL's"
2 in the last sentence on that page. And that's all the
3 preliminary matters that I'm aware of.

4 CHAIRMAN EDGAR: Okay. As Ms. Brown has said, we do
5 need to correct a typo. At the bottom of Page 5 of the
6 prehearing order, the last full sentence which would then read,
7 "The Transmission Line Siting Board will make the final
8 determination concerning the length and route of TECO's
9 transmission line." So noted for the record.

10 Before we move into getting the record further in
11 order, Mr. Willis, do you have any other matters that we should
12 address at this time?

13 MR. WILLIS: I do not. We can proceed to get the
14 record straight.

15 CHAIRMAN EDGAR: Okay. Thank you.

16 Ms. Brown.

17 MS. BROWN: All right. Commissioner, we ask that the
18 prefiled testimony of Paul M. Davis be inserted into the record
19 as though read. Cross-examination has been waived.

20 CHAIRMAN EDGAR: Okay. The prefiled testimony of
21 Witness Davis will be inserted into the record as though read.

22 MS. BROWN: And with respect to the exhibits, Madam
23 Chairman, we passed out a Comprehensive Stipulated Exhibit List
24 to all the Commissioners, along with the Composite Exhibit of
25 Staff, which reflects the discovery responses.

1 We ask that the list itself be marked as Exhibit 1,
2 and all the other exhibits on the list be numbered as indicated
3 and moved into the record.

4 CHAIRMAN EDGAR: Okay. The Comprehensive Exhibit
5 List will be marked as Exhibit 1. The so noted exhibits on
6 that list will be marked as identified on the list, and the
7 list and the exhibits will be moved into the record.

8 (Exhibits 1 through 3 marked for identification and
9 admitted into the record.)

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TAMPA ELECTRIC COMPANY

DOCKET NO. 070193-EI

FILED: APRIL 27, 2007

1 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**2 **PREPARED DIRECT TESTIMONY**3 **OF**4 **PAUL M. DAVIS**5
6 **Q.** Please state your name, address, occupation and employer.7
8 **A.** My name is Paul M. Davis. My business address is 702
9 North Franklin Street, Tampa, Florida 33602. I am the
10 Director of the Energy Control Center at Tampa Electric
11 Company ("Tampa Electric" or "company").12
13 **Q.** Please provide a brief outline of your educational
14 background and business experience.15
16 **A.** I received a Bachelor of Science degree in Electrical
17 Engineering in 1988 from the University of Houston. In
18 December 1989, I joined Tampa Electric as a distribution
19 system planner. I earned my professional engineers
20 license in the State of Florida in 1994 and I have worked
21 in the operations area since. In October 2002, I was
22 promoted to Director, Energy Control Center. My present
23 responsibilities include the areas of day to day
24 distribution outage restoration, transmission system
25 operations, system reliability tracking and reporting,

1 Energy Delivery emergency response and planning, energy
2 accounting and billing and Tampa Electric's long term
3 transmission and distribution infrastructure planning.

4
5 **Q.** Are you sponsoring an Exhibit to support and demonstrate
6 Tampa Electric's need for the Willow Oak - Davis 230 kV
7 Project?

8
9
10 **A.** Yes. Exhibit No. ___ (PMD-1) entitled "Tampa Electric
11 Company's Willow Oak to Davis 230 kV Transmission Line
12 Siting Act Determination of Need Documentation",
13 consisting of 10 attachments, was prepared under my
14 direction and supervision.

15
16 **Q.** Please describe the purpose and scope of your testimony.

17
18 **A.** The purpose of my testimony is to sponsor and support
19 Tampa Electric's Petition for a Determination of the Need
20 for the Willow Oak to Davis 230 kV Project ("Project").
21 My testimony presents the following information in
22 support of the Project:

23 1. A general description of the existing load and
24 electric characteristics of Tampa Electric's
25 electrical transmission grid;

- 1 2. A general description of the Project including the
2 design and operating voltage of the proposed
3 transmission line, the starting and ending points of
4 the line, the approximate cost of the Project and
5 the projected in-service date;
- 6 3. The specific conditions, contingencies and factors
7 which demonstrate the need for the Project including
8 a discussion of Tampa Electric's transmission
9 planning process and the reliability benefits of the
10 Project;
- 11 4. The major alternatives to the Project that were
12 evaluated and rejected by Tampa Electric in favor of
13 the Project; and
- 14 5. The adverse consequences to Tampa Electric's
15 electric system and customers if the Project is
16 delayed or denied.

17

18 **Q.** Provide a synopsis of your testimony.

19

20 **A.** First, I will provide an overview of Tampa Electric and
21 the existing load characteristics and composition of its
22 transmission network. Second, I will describe the
23 Project, as well as the need and benefits and the
24 estimated capital cost of the Project. Third, I will
25 explain Tampa Electric's transmission planning process.

1 Fourth, I will discuss the evaluation and analyses
2 conducted to demonstrate the need and benefits of the
3 Project. Fifth, I will discuss the alternatives
4 considered and explain why they were rejected in favor of
5 the Project. Finally, I will address the adverse
6 consequences to Tampa Electric's customers if the Project
7 is denied or not timely approved.

8
9 **OVERVIEW OF TAMPA ELECTRIC AND ITS TRANSMISSION NETWORK**

10 **Q.** Please provide a brief description of Tampa Electric.

11
12 **A.** Tampa Electric provides electric service to over 650,000
13 customers in four Florida counties within its 2,200
14 square mile service area. In general terms, the
15 company's service territory is located in west central
16 Florida and it provides retail electric service to
17 Hillsborough County and portions of Polk, Pasco and
18 Pinellas Counties as well as wholesale electric service
19 to several utilities within the state.

20
21 **Q.** Please provide a general description of the existing load
22 and electric characteristics of Tampa Electric's
23 electrical transmission grid.

24
25 **A.** Tampa Electric's existing load characteristics consists

1 of residential, commercial, industrial and governmental
2 retail customers as well as a small percentage of
3 wholesale load. A listing of historic and forecasted
4 Tampa Electric peak demand is provided in Attachment 2 of
5 Exhibit No. ___ (PMD-1). An overview of the company's
6 existing electrical transmission network indicating the
7 general location of generating plants, substations, and
8 transmission lines are shown in Attachment 1 of Exhibit
9 No. ___ (PMD-1).

10
11 **DESCRIPTION OF THE PROJECT**

12 **Q.** Describe the proposed Project.

13
14 **A.** As shown in Attachment 1 of Exhibit No. ___ (PMD-1), the
15 Project primarily consists of 30 miles of 230 kV
16 construction that will provide a geographically separate
17 path from Polk County to Hillsborough County to relieve
18 the existing transmission network. There is a need for a
19 230 kV transmission line connecting the Willow Oak,
20 Wheeler Road and Davis Substations, which is the Project
21 Area. Specifically, construction will be performed in
22 two phases: the Davis to Wheeler Road 230 kV line,
23 including the Wheeler Road 230/69 kV and Davis 230 kV
24 Substations, and the Willow Oak to Wheeler Road 230 kV
25 line.

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The Project will also provide electric service to planned Tampa Electric distribution substations located east and north of the existing common transmission right-of-ways ("ROW") in the next five to nine years. The proposed in-service date for the Project is March 2012.

Q. Please describe the two phases of construction in more detail.

A. The first phase, Davis to Wheeler Road will consist of the construction of the Davis 230 kV substation adjacent to the existing River Substation and a 12.3 mile 230 kV transmission line to a new 230/69 kV substation at the existing Wheeler Road 69 kV substation site. The second phase, Wheeler Road to Willow Oak, will consist of the construction of a 17.1 mile 230 kV transmission line from the new Wheeler Road Substation in Hillsborough County to the existing Willow Oak Substation in Polk County. When complete, the Project will consist of a 230 kV line connecting three 230 kV substations: Willow Oak, Wheeler Road and Davis. The transmission line will be constructed with a single steel pole design and will have a design and operating voltage of 230 kV.

1 Q. Please describe the location of the transmission line.

2

3 A. The electrical map included as Attachment 1 of Exhibit
4 No. ___ (PMD-1) shows the electrical facilities that
5 currently exist and a conceptual electrical connection
6 for the Project. The locations on the map of facilities
7 not yet in-service are approximate. In particular, the
8 line depicting the Project is intended to indicate
9 conceptually an electrical connection from the Willow Oak
10 to Wheeler Road Substations and the Wheeler Road
11 Substation to the proposed Davis Substation, strictly
12 from an engineering and planning perspective. The final
13 length and routing of the line will be determined in
14 certification proceedings in accordance with the
15 Transmission Line Siting Act ("TLSA").

16

17 Q. What is Tampa Electric's timetable for licensing, design
18 and construction of the Project?

19

20 A. Presently, Tampa Electric is evaluating corridors in
21 anticipation of submitting an application to the Florida
22 Department of Environmental Protection under the TLSA in
23 August 2007. A final decision by the Siting Board is
24 expected in April 2008. Detailed design of the Project
25 will begin as soon as a final corridor is approved.

1 Construction on the Davis to Wheeler Road phase is
2 expected to begin in June 2009 and is expected to be
3 completed by June 2010. Construction of the Willow Oak
4 to Wheeler Road phase is expected to begin in March 2011
5 and is expected to be complete in March 2012.

6
7 **Q.** What is the company's estimated capital cost of the
8 Project?

9
10 **A.** The final route has not been selected; therefore, final
11 costs will be subject to a number of factors including
12 the final length and route of the line as determined
13 under the TLSA. Specifically, the length and route of
14 the line, and other conditions that could be imposed
15 through the TLSA process, will affect land acquisition
16 costs, line construction costs, environmental permitting
17 and mitigation costs, ROW preparation costs, and other
18 compliance costs. Subject to these types of cost
19 variances that could arise through the TLSA process, the
20 current estimated capital cost of the Project is \$71.2
21 million in 2007 dollars. The corresponding present value
22 revenue requirement in 2010 dollars is \$99.5 million.

23
24 **TAMPA ELECTRIC'S PLANNING PROCESS**

25 **Q.** How does Tampa Electric determine the need for new

1 transmission lines?

2

3 **A.** Planning for the company's transmission system follows
4 practices and criteria that are consistent with the North
5 American Electric Reliability Council ("NERC"), the
6 Florida Reliability Coordinating Council ("FRCC") and
7 with other applicable standards. The NERC reliability
8 standards specify transmission system operating
9 conditions that should be evaluated, and the levels of
10 system performance that should be attained. The NERC
11 reliability standards are provided in Attachment 5 of
12 Exhibit No. ___ (PMD-1).

13

14 As detailed in Attachment 6 of Exhibit No. ___ (PMD-1),
15 Tampa Electric's transmission planning process considers
16 its annual forecasted future load growth effects on the
17 transmission system, the need to serve new load areas or
18 large new customers, future interconnections with
19 neighboring utilities, integration of new generation
20 facilities and firm contractual transmission service
21 obligations. The changes in system performance due to
22 these factors is simulated and analyzed for the present
23 and future to identify system limitations. Alternative
24 solutions to these limitations are then developed,
25 analyzed, and screened on the basis of their electrical

1 performance. The merits of viable technical alternatives
2 are compared with consideration of reliability, voltage,
3 capacity, economics, and constructability. Transmission
4 facility additions such as a new transmission line are
5 implemented as a result of this process when they provide
6 the best overall solution.

7
8 **Q.** What studies did Tampa Electric perform to determine the
9 need for the Project?

10
11 **A.** Transmission assessment studies conducted by the company
12 during 2006 identified regional transmission system
13 limitations in Polk County and northeast Hillsborough
14 County. These studies showed that by the 2012/2013
15 winter, the existing 230 kV and 69 kV transmission
16 networks will not have sufficient capability to provide
17 reliable service to existing and proposed substations.
18 Additionally, the studies revealed that some of the
19 projected load to be served by proposed future
20 distribution substations will be located further north
21 and east of the existing 230 kV transmission network.

22
23 **NEED FOR THE PROJECT**

24 **Q.** Explain the need for the Project.
25

1 **A.** The need for the Project is based on the following
2 considerations:

3 1. The need to provide additional transmission capability
4 to the existing north-south 230 kV network in
5 Hillsborough County and to the east-west 230 kV
6 network between Polk County and the load centers in
7 Hillsborough County in a reliable manner consistent
8 with NERC, FRCC and other applicable standards;

9 2. The need to provide additional capability to the
10 existing 69 kV sub-transmission network in the Brandon
11 area and northeastern Hillsborough County in a
12 reliable manner consistent with NERC, FRCC and other
13 applicable standards;

14 3. The need to serve the increasing load and customer
15 base in the Project Area;

16 4. The opportunity to efficiently and effectively loop
17 radial 230/69 kV substations and to serve new 69/13 kV
18 distribution substations east of I-75 and north of
19 State Road ("S.R.") 60 that are needed to serve the
20 projected load growth by providing new 230/69 kV
21 sources into the Project Area; and

22 5. The opportunity to establish another electrical source
23 from Polk County west to the Brandon and North Tampa
24 areas via a separate ROW path, thereby reducing the
25 impact of the loss of existing transmission facilities

1 on common ROWs.

2

3 The above considerations can be categorized as needs and
4 opportunities. The first three items listed above are
5 required to meet the NERC and FRCC planning criteria
6 while the last two items are opportunities to improve the
7 reliability of the bulk electric system for both Tampa
8 Electric and the Central Florida region of the state.

9

10 **Q.** Please explain the benefits of this Project.

11

12 **A.** The Project provides Tampa Electric with the best
13 alternative to improve reliability to the transmission
14 network in Hillsborough and Polk Counties. Specifically,
15 the Project will allow Tampa Electric to:

16 1. Improve area reliability by providing a
17 geographically, separate path to the existing
18 transmission network in Hillsborough and Polk
19 Counties;

20 2. Serve new customer load in the Project Area;

21 3. Reduce transmission losses by approximately four MW
22 which represents a present value savings of \$12.6M in
23 2010 dollars; and

24 4. Meet the Project Area's long term growth requirements
25 for at least the next ten years, based on the regional

1 customer and energy sales growth forecast as found in
2 Attachment 3 of Exhibit No. __ (PMD-1).

3
4 **Q.** Please describe the evaluation and analyses conducted to
5 demonstrate the need and benefits of the Project.

6
7 **A.** As referenced in Attachment 9 of Exhibit No. __ (PMD-1)
8 these analyses indicate that for nine different single
9 contingency events, a variety of overloads ranging from
10 101 percent to 160 percent of thermal MVA facility
11 ratings and low voltages as low as 0.89 per unit ("pu")
12 could be experienced within and near the Project Area.
13 The NERC reliability standards require that facility
14 ratings not exceed 100 percent of the applicable thermal
15 MVA facility rating and voltage levels remain within 0.95
16 pu and 1.07 pu for 230 kV stations. Without the Project,
17 mitigation of these overloads would require the
18 interruption of service to numerous customers, depending
19 on the specific outage, in order to continue to operate
20 the facilities in accordance with NERC reliability
21 standards

22
23 **Q.** Regarding Tampa Electric's concerns with the loss of the
24 existing 230 kV corridors, please explain the planning of
25 a separate path from Polk County to Hillsborough County.

1

2 **A.** As described earlier, Tampa Electric reviews its
3 transmission plans in the context of long term needs of
4 its service area. Various alternative solutions were
5 developed to solve the contingency overloads and low
6 voltages identified for the winter 2012/2013. When
7 weighing the alternatives, improvement for corridor
8 outages was included in the assessment. It was
9 determined that the Project would cost effectively solve
10 the bulk and sub-transmission overloads and low voltages,
11 and also solve the corridor outage issue. In addition,
12 it provides 230/69 kV sources to the new load being added
13 in the Project Area east of the north-south corridor and
14 north of the east-west corridor. The Project achieves
15 these benefits by extending the existing 230 kV network
16 from Polk County (Willow Oak) in 2012 on a geographically
17 separate ROW path to interconnect with the 230 kV network
18 in Hillsborough County (Wheeler Road and Davis). This is
19 in lieu of serving the Project Area from the existing 230
20 kV networks in Hillsborough and Polk Counties.

21

22 **Q.** Are there other reliability and strategic benefits
23 associated with the Project?

24

25 **A.** Yes, there are two additional benefits: looping 230 kV

1 substations and providing service to new distribution
2 substations in the Project Area. The Project will loop
3 the existing Willow Oak and Wheeler Road Substations in
4 2012. Until that time, the loss of the Willow Oak 230 kV
5 source will require the station to be backed up by the
6 underlying 69 kV transmission network which will be
7 stressed due to load growth expected by 2012.

8
9 As previously discussed, several distribution substations
10 are needed east and north of the existing 230 kV networks
11 in Polk and Hillsborough Counties. As shown in
12 Attachment 8 of Exhibit No. ___ (PMD-1) Tampa Electric is
13 planning for new distribution substations in the five to
14 nine year time frame in this Project Area.

15
16 In summary, the establishment of a new ROW from Willow
17 Oak to Wheeler Road to Davis provides an opportunity for
18 the more efficient and cost-effective integration of the
19 230/69 kV and 69/13 kV substations into Tampa Electric's
20 transmission system to meet expected load growth in the
21 Project Area.

22 23 **DISCUSSION OF ALTERNATIVES**

24 **Q.** Did Tampa Electric consider alternatives to the Project?
25

1 **A.** Yes. The company considered three alternatives to the
2 proposed Project to address the needs and opportunities
3 described earlier in my testimony.

4
5 Alternative 1 - This alternative includes an upgrade of
6 the north and south S.R. 60 transformers to 448 MVA and
7 purchasing a 448 MVA spare transformer. It includes re-
8 rating circuits 66019 and 66035 to 160 MVA, adding air
9 core reactors to each circuit and the addition of a 50.4
10 MVAR capacitor bank at Wheeler Road in 2010. It also
11 includes rebuilding 23 miles of 230 KV line (circuit
12 230021), constructing 11 miles of 230 kV line from Willow
13 Oak to Hampton, upgrading the Bell Creek 230/69 kV
14 transformer to 336 MVA and installing a new 230 kV ring
15 bus at Hampton Substation. The estimated capital cost of
16 Alternative 1 is \$80.5 million.

17
18 Alternative 1 was rejected for the following reasons:

19 1. The capital cost of Alternative 1 was higher than the
20 Project. The major reason for the higher cost is the
21 need to construct 11 miles of 230 kV line and the
22 rebuild of 23 miles of 230 kV line. Another reason
23 for the higher cost is the need to purchase a spare
24 autotransformer for the new 448 MVA S.R. 60
25 transformers. This new spare autotransformer would

1 only be used at S.R. 60 due to its physical
2 dimensions;

3 2. Alternative 1 does not provide a long term solution
4 for the voltage problems in the high load growth area
5 north of S.R. 60 and east of I-75. The addition of
6 the capacitor bank at Wheeler Road mitigates the
7 contingency voltage violations until 2014. Currently,
8 the only other solution identified would be the
9 addition of a new 230 kV source in the area; and
10 3. Alternative 1 does not mitigate the east-west or
11 north-south corridor outages.

12
13 Alternative 2 - This alternative includes the same series
14 of projects as Alternative 1 to address the sub-
15 transmission system issues. In addition to the upgrade
16 of the Bell Creek transformer to 336 MVA, Alternative 2
17 includes the following set of projects to address the
18 bulk electric system issues: construct a new nine mile
19 230 kV circuit from Willow Oak to FishHawk and rebuild 23
20 miles of 230 kV line from FishHawk to Bell Creek and
21 Gannon. The estimated capital cost of Alternative 2 is
22 \$74.5 million.

23

24 Alternative 2 was rejected for the following reasons:

25 1. The capital cost of Alternative 2 was higher than the

1 proposed Project. The drivers of the higher cost are
2 the construction of nine miles of 230 kV line and the
3 rebuild of 23 miles of 230 kV line. Another reason
4 for the higher cost was due to the purchase of a spare
5 autotransformer for the new 448 MVA S.R. 60
6 transformers. The new spare autotransformer could
7 only be used at S.R. 60 due to its physical
8 dimensions;

9 2. Alternative 2 does not provide a long term solution
10 for the voltage problems in the high load growth area
11 north of S.R. 60 and east of I-75. The addition of
12 the capacitor bank at Wheeler Road mitigates the
13 contingency voltage violations until 2014. Currently,
14 the only other alternative would be the addition of a
15 new 230 kV source in the area;

16 3. Alternative 2 does not provide looped transmission
17 service to the heavily loaded Hampton 230/69 kV
18 Substation. Without a Wheeler Road 230/69 Substation,
19 Hampton is the only 230 kV source in the densely
20 loaded Brandon area; and

21 4. Alternative 2 does not mitigate the east to west or
22 north to south corridor outages.

23
24 Alternative 3 - This alternative includes the same series
25 of projects as Alternative 1 to address the sub-

1 transmission system issues and it includes the following
2 set of projects to address the bulk issues: construct a
3 new nine mile 230 kV circuit from Willow Oak to FishHawk
4 and a 30 mile 230 kV circuit from Griffin to Dale Mabry
5 Substation. The estimated capital cost of Alternative 3
6 is \$89.5 million.

7
8 Alternative 3 was rejected for the following reasons:

- 9 1. The capital cost of this project was the highest of
10 all the alternatives. The major reason for the higher
11 cost is the construction of 39 miles of 230 kV line.
12 Another reason for the increased cost was due to the
13 purchase of a spare autotransformer for the new 448
14 MVA north S.R. 60 transformer. As previously
15 discussed, the new spare autotransformer could only be
16 used at S.R. 60 due to its physical dimensions;
- 17 2. Alternative 3 does not provide a long term solution
18 for the voltage problems in the high load growth area
19 north of S.R. 60 and east of I-75. The addition of
20 the capacitor bank at Wheeler Road mitigates the
21 contingency voltage violations until 2014. Currently,
22 the only other alternative is the addition of a new
23 230 kV source in the area; and
- 24 3. Alternative 3 does not provide looped transmission
25 service to the heavily loaded Hampton 230/69 kV

1 Substation as Alternative 1. Without a Wheeler Road
2 230/69 kV substation, Hampton is the only 230 kV
3 source in the densely loaded Brandon area.

4
5 **Q.** What are your conclusions regarding the evaluation of
6 alternatives to the proposed Project?

7
8 **A.** All three alternatives represent higher capital
9 investment than the proposed Project and no alternative
10 resolves both the long term issue of looping the 230/69
11 kV substations and the mitigation for the loss of either
12 the east-west or north-south 230 kV corridors.
13 Additionally, some of the alternatives are marginal in
14 resolving expected overload and low voltage conditions.
15 The selection of the Willow Oak to Davis 230 kV project
16 resolves all of these issues at a lower capital
17 investment and represents a long term solution of
18 providing needed improvements to the 230 kV transmission
19 and 69 kV sub-transmission networks for both Tampa
20 Electric and the Central Florida region of the state.

21
22 **ADVERSE CONSEQUENCES OF DELAY OR DENIAL OF THE PROJECT**

23 **Q.** Would there be adverse consequences to Tampa Electric's
24 customers in the Project Area if the Project is not
25 timely approved?

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A. Yes. If the Project is not timely approved and no other alternative is built, inadequate transmission capability would result, therefore jeopardizing reliable service to existing and future customers in the Project Area. The inability to serve additional load could lead to rolling outages to prevent system degradation.

Q. Should the Commission approve the need for the Project?

A. Yes. The Commission should determine that there is a need for the Willow Oak to Davis 230 kV Line consisting of needed 230 kV and 69 kV improvements to best serve the Project Area.

Q. Does this conclude your testimony?

A. Yes.

1 MS. BROWN: Thank you, Madam Chairman.

2 I'm not aware that any members of the public wish to
3 provide testimony.

4 CHAIRMAN EDGAR: Thank you.

5 Is there anybody here that would like to address the
6 Commission on this matter at this time?

7 Seeing none.

8 MS. BROWN: All right, Madam Chairman.

9 We suggest that since the parties are proposing
10 stipulated positions on all the issues, no post-hearing filings
11 would be necessary, and the Commission, if it desires, could
12 make a bench decision in the case. We can move to staff's
13 recommendation on the proposed stipulations, if you would like.

14 CHAIRMAN EDGAR: Okay.

15 Commissioners, as you are aware, we have four issues
16 before us, they are all stipulated; and as you can see, there
17 is nobody from the public here to address us today.

18 As indicated in the Prehearing Order on Page 6, staff
19 is recommending a bench decision. And, again, there was notice
20 of that in the prehearing order.

21 Commissioners, are you ready to proceed? Okay.

22 Ms. Brown, we will move through the issues, and put
23 us in the posture, please, for a bench decision at this time.

24 MS. BROWN: Staff recommends that the proposed
25 stipulations on Pages 4 and 5 of the prehearing order be

1 approved by the Commission, and we're available to answer any
2 questions that anyone might have.

3 CHAIRMAN EDGAR: Commissioners, any questions for our
4 staff, or for Mr. Willis, or the company that he is
5 representing on any of the issues, or generally at this time?

6 No questions.

7 Commissioners, is there a motion to adopt the
8 stipulated issues that are before us?

9 Commissioner Carter.

10 COMMISSIONER CARTER: Madam Chair, I so move staff's
11 recommendations on the issues in this case.

12 COMMISSIONER SKOP: Second.

13 CHAIRMAN EDGAR: Okay. Issues 1 through 4, there is
14 a motion to adopt the stipulated issues as they are presented
15 before us.

16 Ms. Brown, anything else we need to do before we call
17 the vote?

18 MS. BROWN: No, Madam Chairman, nothing else to do at
19 this time.

20 CHAIRMAN EDGAR: Okay. Seeing no further questions,
21 Commissioners, we have a motion and a second. All in favor say
22 aye.

23 (Unanimous affirmative vote.)

24 CHAIRMAN EDGAR: Opposed?

25 Show the motion adopted.

1 Ms. Brown.

2 MS. BROWN: Madam Chairman, there are no further
3 matters that I'm aware of. And since no post-hearing filings
4 are necessary, I just want to inform everyone that the final
5 order in the case will be issued no later than June 25th, 2007.

6 CHAIRMAN EDGAR: Mr. Willis, any comments?

7 MR. WILLIS: I just wanted to express the
8 appreciation of the Company for the thorough and expeditious
9 way that the staff reviewed the evidence that we filed here,
10 and for the Commission's review of it. We appreciate how this
11 has been handled, and we have nothing further.

12 CHAIRMAN EDGAR: Thank you.

13 As you are aware, and as we are all aware, the
14 statute calls for a pretty tight turnaround and review on these
15 types of matters, these determinations that come before us, so
16 thank you to the Company and to the staff to working so that we
17 could be in this position to meet the statutory deadline and
18 all be comfortable with the issues.

19 If there are no further comments, we are adjourned.

20 MS. BROWN: Thank you, Madam Chairman.

21 MR. WILLIS: Thank you.

22 (The hearing concluded at 9:42 a.m.)
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STATE OF FLORIDA)

:

CERTIFICATE OF REPORTER

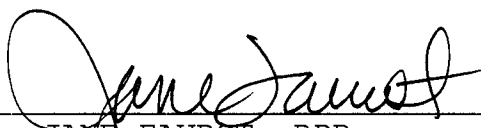
COUNTY OF LEON)

I, JANE FAUROT, RPR, Chief, Hearing Reporter Services Section, FPSC Division of Commission Clerk, do hereby certify that the foregoing proceeding was heard at the time and place herein stated.

IT IS FURTHER CERTIFIED that I stenographically reported the said proceedings; that the same has been transcribed under my direct supervision; and that this transcript constitutes a true transcription of my notes of said proceedings.

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorney or counsel connected with the action, nor am I financially interested in the action.

DATED THIS 12th day of June, 2007.



JANE FAUROT, RPR
Official FPSC Hearings Reporter
(850) 413-6732

Comprehensive Exhibit List			
Hearing I.D. #	Witness	I.D. # As Filed	Exhibit Description
<i>Staff</i>			
1		Comprehensive Exhibit List	Comprehensive Exhibit List
2		Composite Stip-2	TECO's responses to Staff's First Set of Interrogatories (Nos. 1-8)
			Newspaper Notice and Affidavit of Publication by The Tampa Tribune, Winter Haven News Chief, The Centro Mi Diario, and. The Lakeland Ledger.
<i>Testimony Exhibit List</i>			
<i>TECO</i>			
3	Paul M. Davis	TECO-1	Exhibit "A" The Willow Oak to Davis 230 kV Project

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET NO. 070193-EI **EXHIBIT** 1
COMPANY FPSC Staff
WITNESS Comprehensive Exhibit List
DATE 06/11/07

EXHIBIT NO. _____

DOCKET NO: 070193-EI

PARTY: TAMPA ELECTRIC COMPANY

DESCRIPTION: STAFF'S COMPOSITE EXHIBIT - 2

DOCUMENTS:

- 1) TECO's responses to Staff's First Set of Interrogatories (Nos. 1-8) [Bates Nos. 1-14]
- 2) Newspaper Notice and Affidavit of Publication by The Tampa Tribune, Winter Haven News Chief, The Centro Mi Diario, and. The Lakeland Ledger. [Bates Nos. 15-26]

PROFFERED BY: STAFF

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET NO. 070193-EI **EXHIBIT** 2
COMPANY FPSC Staff
WITNESS Composite Stip-2
DATE 06/11/07

1

**Staff's
1st ROGs**

BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for determination of)	DOCKET NO. 070193-EI
need for Willow Oak-Davis 230 kV)	FILED: MAY 22, 2007
transmission line in Polk and)	
Hillsborough Counties, by Tampa)	
<u>Electric Company.</u>)	

TAMPA ELECTRIC COMPANY'S
ANSWERS TO FIRST SET OF INTERROGATORIES (NOS. 1 – 8)
OF THE
FLORIDA PUBLIC SERVICE COMMISSION STAFF

Tampa Electric files this its Answers to Interrogatories (Nos. 1 - 8) propounded and served on May 7, 2007, by the Florida Public Service Commission.

**TAMPA ELECTRIC COMPANY
DOCKET NO. 070193-EI
INDEX TO STAFF'S FIRST SET OF INTERROGATORIES (NOS. 1 – 8)**

<u>Number</u>	<u>Witness</u>	<u>Subject</u>	<u>Bates Stamped Page</u>
1	Allen/ Young	Are the costs of the land used for the right-of-way (ROW) included in the Estimated Total Project Cost of \$71.2 million in 2007 dollars? If yes, how much is included? If no, what are the projected costs of the proposed ROW and how will TECO seek compensation?	1
2	Ramon/ Steele	Has TECO obtained the ROW for the Willow Oak-Davis 230 kV transmission line?	2
3	Ramon/ Steele	If FPL has not obtained the ROW, does TECO anticipate any problems in obtaining the ROW?	3
4	Allen/ Young	Are there any demand side management programs (i.e. load control, interruptible customers, etc) that can delay or replace the need for this line? Explain.	4
5	Allen/ Young	Page 13 of the Direct Testimony of TECO witness Davis contains a statement that the proposed Willow Oak-Davis 230 kV transmission line will reduce transmission losses by approximately 4 MW. Please explain how this figure was derived.	5
6.	Allen/ Young	Page 15 of the Direct Testimony of TECO witness Davis contains a discussion on the Load Flow analysis for 2012/2013 winter peak load. Did TECO conduct any analysis for the system for 2012 Summer Peak? If so, what were the results of the analysis; if not, why not?	6
7.	Ramon	Was the cost of the Willow Oak-Davis 230 kV transmission line included in any rate case stipulations? If so, provide the stipulations?	7
8.	Allen/ Young	Pages 17 - 20 of the Direct Testimony of TECO witness Davis contain the estimated capital cost of Alternative I (\$80.5M), Alternative II (\$74.5M) and Alternative III (\$89.5M). What are the costs included in each of these alternatives for: <ul style="list-style-type: none"> a. the new 230kV line built in the existing corridor; b. providing transmission service to new substations to serve future growth 	8

Paul M. Davis, Director of the Energy Control Center
Tampa Electric Company
702 N. Franklin Street
Tampa, Florida 33602

**TAMPA ELECTRIC COMPANY
DOCKET NO. 070193-EI
STAFF'S FIRST SET OF
INTERROGATORIES
INTERROGATORY NO. 1
PAGE 1 OF 1
FILED: MAY 22, 2007**

1. Are the costs of the land used for the right-of-way (ROW) included in the Estimated Total Project Cost of \$71.2 million in 2007 dollars? If yes, how much is included? If no, what are the projected costs of the proposed ROW and how will TECO seek compensation?
 - A. The corridor certification has not been completed by the Siting Board at this time. The estimated total project didn't include the acquisition of new right-of-way ("ROW"). The total Project cost may change once the Siting Board has approved the final route.

TAMPA ELECTRIC COMPANY
DOCKET NO. 070193-EI
STAFF'S FIRST SET OF
INTERROGATORIES
INTERROGATORY NO. 2
PAGE 1 OF 1
FILED: MAY 22, 2007

2. Has TECO obtained the ROW for the Willow Oak-Davis 230 kV transmission line?
 - A. No. Acquisition of any new ROWs would normally occur after corridor certification by the Siting Board.

3. If FPL has not obtained the ROW, does TECO anticipate any problems in obtaining the ROW?
 - A. ROW acquisition in urban areas can be a challenge. Tampa Electric Company's ROW acquisition process will address any challenges for the Willow Oak to Davis Project in the following manner:
 1. Acquisition issues will be considered during the route selection and corridor boundary delineation phases of the Project.
 2. Once a route is selected within the corridor boundary, real estate professionals will negotiate with landowners in an effort to obtain the necessary rights.
 3. If negotiations are unsuccessful, Tampa Electric can exercise its legislated right to acquire ROW through the power of eminent domain.

**TAMPA ELECTRIC COMPANY
DOCKET NO. 070193-EI
STAFF'S FIRST SET OF
INTERROGATORIES
INTERROGATORY NO. 4
PAGE 1 OF 1
FILED: MAY 22, 2007**

- 4.** Are there any demand side management programs (i.e. load control, interruptible customers, etc) that can delay or replace the need for this line? Explain.
- A.** No. Demand side management programs will not address the needs of the Project: (1) serving future distribution substations in the Project Area; and (2) transferring power off of the existing 230 and 69 kV networks which will be overloaded in the 2010 through 2012 time frame.

**TAMPA ELECTRIC COMPANY
DOCKET NO. 070193-EI
STAFF'S FIRST SET OF
INTERROGATORIES
INTERROGATORY NO. 5
PAGE 1 OF 1
FILED: MAY 22, 2007**

5. Page 13 of the Direct Testimony of TECO witness Davis contains a statement that the proposed Willow Oak-Davis 230 kV transmission line will reduce transmission losses by approximately 4 MW. Please explain how this figure was derived.
 - A. The 4 MW reduction in Tampa Electric's transmission losses is determined by taking the difference in the load flow cases between Tampa Electric's total transmission losses with and without the Willow Oak to Davis Project.

**TAMPA ELECTRIC COMPANY
DOCKET NO. 070193-EI
STAFF'S FIRST SET OF
INTERROGATORIES
INTERROGATORY NO. 6
PAGE 1 OF 1
FILED: MAY 22, 2007**

6. Page 15 of the Direct Testimony of TECO witness Davis contains a discussion on the Load Flow analysis for 2012/2013 winter peak load. Did TECO conduct any analysis for the system for 2012 Summer Peak? If so, what were the results of the analysis; if not, why not?
 - A. Tampa Electric did conduct an analysis of the transmission system representing the expected summer peak for 2012. The results of the analysis did not indicate any transmission problems that could not be resolved by the Willow Oak to Davis Project.

TAMPA ELECTRIC COMPANY
DOCKET NO. 070193-EI
STAFF'S FIRST SET OF
INTERROGATORIES
INTERROGATORY NO. 7
PAGE 1 OF 1
FILED: MAY 22, 2007

7. Was the cost of the Willow Oak-Davis 230 kV transmission line included in any rate case stipulations? If so, provide the stipulations?

A. No.

8. Pages 17 - 20 of the Direct Testimony of TECO witness Davis contain the estimated capital cost of Alternative I (\$80.5M), Alternative II (\$74.5M) and Alternative III (\$89.5M). What are the costs included in each of these alternatives for:
- a. the new 230kV line built in the existing corridor;
 - b. providing transmission service to new substations to serve future growth
- A.
- a. The transmission line cost for each alternative is listed below:
 - 1. Alternative 1 – 34 miles of transmission line construction and rebuild - \$64.6 million
 - 2. Alternative 2 - 32 miles of transmission line construction and rebuild - \$60.8 million
 - 3. Alternative 3 - 39 miles of transmission line construction and rebuild - \$74.1 million
 - b. No specific costs were included in the evaluation of the Project or the alternatives for serving new substations.

A F F I D A V I T

STATE OF FLORIDA)
)
COUNTY OF HILLSBOROUGH)

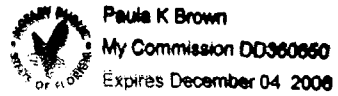
Before me the undersigned authority personally appeared Gregory M. Ramon who deposed and said that he is Director Regulatory Policy and Compliance, Tampa Electric Company, and that the individuals listed in Tampa Electric Company's response to Staff's First Set of Interrogatories, (Nos. 1-8) prepared or assisted with the responses to these interrogatories to the best of his information and belief.

Dated at Tampa, Florida this 21 day of May, 2007.

Gregory J. Ramon

Sworn to and subscribed before me this 21st day of May, 2007.

Paula K. Brown



My Commission expires _____

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition of Tampa Electric Company)
For Determination of Need for Willow Oak-)
Davis 230 kV Transmission Line)
_____)

DOCKET NO. 070193-EI

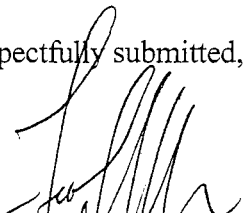
DATED: May 22, 2007

**TAMPA ELECTRIC COMPANY'S NOTICE OF SERVICE OF
ANSWERS TO FIRST SET OF INTERROGATORIES (NOS. 1-8)
OF THE FLORIDA PUBLIC SERVICE COMMISSION STAFF**

Tampa Electric Company has this date furnished by hand delivery to Ms. Martha Carter Brown, Office of General Counsel, Florida Public Service Commission, 2540 Shumard Oak Boulevard, Tallahassee, FL 32399-0850, its Answers to the First Set of Interrogatories (Nos.1-8) of the Florida Public Service Commission Staff, propounded and served by U. S. Mail on May 7, 2007.

DATED this 22nd day of May 2007.

Respectfully submitted,



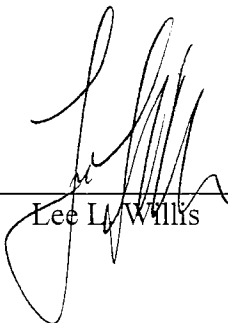
LEE L. WILLIS
JAMES D. BEASLEY
Ausley & McMullen
Post Office Box 391
Tallahassee, Florida 32302
(850) 224-9115

ATTORNEYS FOR TAMPA ELECTRIC COMPANY

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing Notice of Service of Answers to Staff's First Set of Interrogatories, filed on behalf of Tampa Electric Company, has been furnished by U. S. Mail or hand delivery (*) on this 22nd day of May 2007 to the following:

Ms. Martha Carter Brown*
Office of General Counsel
Florida Public Service Commission
Room 370N – Gerald L. Gunter Building
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

By:  _____
Lee L. Willis

2

Newspaper Notice and Affidavit of Publication by The Tampa Tribune, Winter Haven News

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition of Tampa Electric Company)
For Determination of Need for Willow Oak-)
Davis 230 kV Transmission Line)
_____)

Docket No. 070193-EI

Dated: May 4, 2007

ORIGINAL

**TAMPA ELECTRIC COMPANY'S
NOTICE OF FILING NOTICES OF
FINAL HEARING PUBLISHED IN NEWSPAPERS
IN AREAS WHERE PROPOSED LINE COULD BE PLACED
AND AFFIDAVITS OF PUBLICATION**

Petitioner Tampa Electric Company ("Tampa Electric" or the "company"), by and through its undersigned counsel pursuant to Rule 25-22.075(4), Florida Administrative Code, hereby submits the Notices of Final Hearing published in the following newspapers of general circulation where Tampa Electric's proposed Willow Oak-Davis 230 kV transmission line could be placed:

1. The Tampa Tribune – published on April 21, 2007;
2. The Winter Haven News Chief - published on April 21, 2007;
3. The Centro Mi Diario - published on April 20, 2007; and
4. The Lakeland Ledger – published on April 21, 2007.

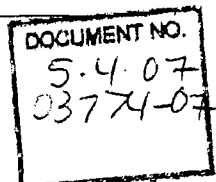
The above-referenced Notices of Final Hearing and the Affidavits of Publication of such Notices are filed herewith as Composite Exhibit "A" to this Notice of Filing.

Respectfully submitted this 4th day of May, 2007.

LEE L. WILLIS
JAMES D. BEASLEY
Ausley & McMullen
Post Office Box 391
Tallahassee, Florida 32302
(850) 425-5487

By:

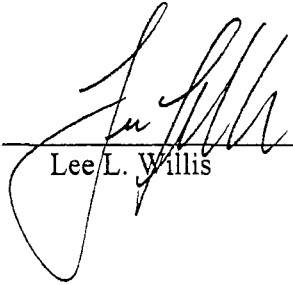
Lee L. Willis



CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing was furnished by Hand Delivery to
the following this 4th day of May, 2007:

Martha Carter-Brown, Esq.
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

By:  _____
Lee L. Willis

ORIGINAL

EXHIBIT 'A'

PROOF OF PUBLICATION

OF

NOTICE OF HEARING

THE TAMPA TRIBUNE
Published Daily
Tampa, Hillsborough County, Florida

State of Florida }
County of Hillsborough } ss.

Before the undersigned authority personally appeared Jennifer Elghali who on oath says that she is the Supervisor in the Billing Department of The Tampa Tribune, a daily newspaper published at Tampa in Hillsborough County, Florida; that the attached copy of advertisement being a


Legal Notice
Ad #2103488

In the matter of

Notice of Need Determination Hearing

Was published in said newspaper in the issue of **Tampa Tribune**
April 21, 2007

Affiant further says that the said The Tampa Tribune is a newspaper published at Tampa in said Hillsborough County, Florida, and that the said newspaper has heretofore been continuously published in said Hillsborough County, Florida, each day and has been entered as second class mail matter at the post office in Tampa, in said Hillsborough County, Florida for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she has neither paid nor promised any person, this advertisement for publication in the said newspaper.



Signature of Affiant

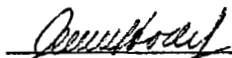
Sworn to and subscribed by me, this 23 day of April A.D. 2007

Personally Known or Produced Identification

Type of Identification Produced _____



Ana Maria Hodel
Commission # DD551367
Expires: MAY 11, 2010
WWW.AARONNOTARY.COM



Signature of Notary

**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION
NOTICE OF NEED DETERMINATION HEARING
DOCKET NO. 070193-EI**

**PETITION OF TAMPA ELECTRIC TO DETERMINE
THE NEED FOR A PROPOSED 230-kV ELECTRICAL TRANSMISSION LINE**

Notice is hereby given that the Florida Public Service Commission will hold a public hearing in the above docket at the following time and place:

June 11, 2007, Beginning at 9:30 a.m.

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

PURPOSE AND PROCEDURE

The purpose of this hearing will be for a determination of need pursuant to Section 403.537, Florida Statutes (2005), for the construction of a 230-kV electrical transmission line. Segments of this 230-kV electrical transmission line may be located in Polk and Hillsborough Counties. The proposed electrical transmission line will start at Tampa Electric's planned Willow Oak substation in Polk County, continuing to the Wheeler Road substation in Hillsborough County and will terminate at Tampa Electric's planned Davis substation in Hillsborough County. The proceeding will be governed by the provisions of Chapter 120, Florida Statutes, Section 403.537, Florida Statutes, and Rules 25-22.075 and 25-22.076, Florida Administrative Code. Anyone wishing to become a party to the need determination proceeding should file an appropriate petition pursuant to Rule 25-22.039, Florida Administrative Code, with the Director, Commission Clerk and Administrative Services Division, at the following address:

Director, Commission Clerk and Administrative Services Division
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850
Re: Docket No. 070193-EI

PREHEARING CONFERENCE

A prehearing conference will be conducted at the following time and place:

May 31, 2007, Beginning at 9:30 a.m.

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

The purpose of this prehearing conference will be to consider: (1) the simplification of the issues; (2) the identification of the positions of the parties on the issues; (3) the identification of witnesses and exhibits; (4) the establishment of an order of witnesses; (5) the possibility of obtaining stipulations concerning any matters at issue; and (6) the resolution of any remaining procedural matters that may aid in the disposition of the action.

APPLICATION

A copy of the Petition for Determination of Need and supporting exhibits will be available for public inspection beginning on or about April 27, 2007 at the Florida Public Service Commission Web site: www.floridapsc.com by selecting Dockets and then search by Docket No. 070193-EI. These documents may also be reviewed during normal business hours at the following location:

FLORIDA PUBLIC SERVICE COMMISSION
Easley Conference Center
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

JURISDICTION

Jurisdiction over Tampa Electric and this action is vested in the Commission pursuant to Chapter 386, Florida Statutes and Section 403.537, Florida Statutes.

By Direction of the Florida Public Service Commission
Ann Cole, Director
Commission Clerk and Administrative Service



tampaelectric.com

Hearing Exhibit - 000020

AFFIDAVIT OF PUBLICATION

News Chief

Published Daily

STATE OF FLORIDA
COUNTY OF POLK

Before the undersigned personally appeared **Colleen M. McGee** who on oath says that she is the **Classified Legal Assistant** of the News Chief, a newspaper published at Winter Haven, in Polk County, Florida; that the attached copy of advertisement, being a **Notice of Need Determination Hearing, Docket No. 070193-EI** in the matter of **Tampa Electric** published in said newspaper in the issues of **April 21st, 2007**.

Affiant further says that the News Chief is a newspaper published at Winter Haven, in said Polk County, Florida, and that said newspaper has heretofore been continuously published in said Polk County, Florida, daily, and has been entered as second class matter at the post office in Winter Haven, in said Polk County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission, or refund for the purpose of securing this advertisement for publication in said newspaper.

Signed Colleen M. McGee

Sworn to and subscribed before me this **27th** day of **April, A.D. 2007** by **Colleen M. McGee** who is personally known to me or who has produced (_____) as identification.

Linda B.
Notary Public

My Commission Expires:



BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION
NOTICE OF NEED DETERMINATION HEARING
DOCKET NO. 070193-EI

PETITION OF TAMPA ELECTRIC TO DETERMINE
THE NEED FOR A PROPOSED 230-kV ELECTRICAL TRANSMISSION LINE

Notice is hereby given that the Florida Public Service Commission will hold a public hearing in the above docket at the following time and place:

June 11, 2007, Beginning at 9:30 a.m.

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

PURPOSE AND PROCEDURE

The purpose of this hearing will be for a determination of need pursuant to Section 403.537, Florida Statutes (2005), for the construction of a 230-kV electrical transmission line. Segments of this 230-kV electrical transmission line may be located in Polk and Hillsborough Counties. The proposed electrical transmission line will start at Tampa Electric's planned Willow Oak substation in Polk County, continuing to the Wheeler Road substation in Hillsborough County and will terminate at Tampa Electric's planned Davis substation in Hillsborough County. The proceeding will be governed by the provisions of Chapter 120, Florida Statutes, Section 403.537, Florida Statutes, and Rules 25-22.075 and 25-22.076, Florida Administrative Code. Anyone wishing to become a party to the need determination proceeding should file an appropriate petition pursuant to Rule 25-22.039, Florida Administrative Code, with the Director, Commission Clerk and Administrative Services Division, at the following address:

Director, Commission Clerk and Administrative Services Division
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850
Re: Docket No. 070193-EI

PREHEARING CONFERENCE

A prehearing conference will be conducted at the following time and place:

May 31, 2007, Beginning at 9:30 a.m.

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

The purpose of this prehearing conference will be to consider: (1) the simplification of the issues; (2) the identification of the positions of the parties on the issues; (3) the identification of witnesses and exhibits; (4) the establishment of an order of witnesses; (5) the possibility of obtaining stipulations concerning any matters at issue; and (6) the resolution of any remaining procedural matters that may aid in the disposition of the action.

APPLICATION

A copy of the Petition for Determination of Need and supporting exhibits will be available for public inspection beginning on or about April 27, 2007 at the Florida Public Service Commission Web site: www.floridapsc.com by selecting Dockets and then search by Docket No. 070193-EI. These documents may also be reviewed during normal business hours at the following location:

FLORIDA PUBLIC SERVICE COMMISSION
Easley Conference Center
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

JURISDICTION

Jurisdiction over Tampa Electric and this action is vested in the Commission pursuant to Chapter 386, Florida Statutes and Section 403.537, Florida Statutes.

By Direction of the Florida Public Service Commission
Ann Cole, Director
Commission Clerk and Administrative Service



THE TAMPA TRIBUNE
Published Daily
Tampa, Hillsborough County, Florida

State of Florida }
County of Hillsborough } ss.

Before the undersigned authority personally appeared Jennifer Elghali who on oath says that she is the Supervisor in the Billing Department of The Tampa Tribune, a daily newspaper published at Tampa in Hillsborough County, Florida; that the attached copy of advertisement being a

Legal Notice
Ad #21035110

In the matter of

Florida Public Service Commission

Was published in said newspaper in the issue of **Centro Mi Diario**
April 20, 2007

Affiant further says that the said The Tampa Tribune is a newspaper published at Tampa in said Hillsborough County, Florida, and that the said newspaper has heretofore been continuously published in said Hillsborough County, Florida, each day and has been entered as second class mail matter at the post office in Tampa, in said Hillsborough County, Florida for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she has neither paid nor promised any person, this advertisement for publication in the said newspaper.



Signature of Affiant

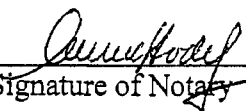
Sworn to and subscribed by me, this 23 day of April A.D. 2007

Personally Known or Produced Identification _____

Type of Identification Produced _____



Ana Maria Hodel
Commission # DD551387
Expires: MAY 11, 2010
www.AARONNOTARY.com



Signature of Notary

**ANTE LA COMISIÓN DE SERVICIO PÚBLICO DE LA FLORIDA
SE DA A LA AUDIENCIA PARA LA RESOLUCIÓN
NECESARIA DEL REGISTRO NO. 070193-EI**

**PETICIÓN DE TAMPA ELECTRIC PARA DETERMINAR LA NECESIDAD DE UNA
LÍNEA SUGERIDA DE TRANSMISIÓN ELÉCTRICA DE 230-KV**

Por este medio se da aviso que la Comisión de Servicio Público de la Florida tendrá una audiencia pública sobre la agenda arriba mencionada en el siguiente lugar y hora:

11 de junio, 2007, comenzando a las 9:30 a.m.

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

PROPÓSITO Y PROCEDIMIENTO

El propósito de esta audiencia será para una resolución necesaria de acuerdo a la Sección 403.537, de los Estatutos de la Florida (2005), para la construcción de una línea de transmisión eléctrica de 230-kV. Las secciones de esta línea de transmisión eléctrica de 230-kV podrían ser ubicadas en los Condados de Polk y Hillsborough. La línea sugerida de transmisión eléctrica comenzará en la subestación Willow Oak programada por Tampa Electric en el Condado de Polk, continuando para la subestación Wheeler Road programada en el condado de Hillsborough y terminará en la subestación Davis programada por Tampa Electric en el Condado de Hillsborough. El procedimiento será determinado por las estipulaciones del Capítulo 120 de los Estatutos de la Florida, en la Sección 403.537, de los Estatutos de la Florida y Reglas 25-22.075-25-22.076 del Código Administrativo de la Florida. Si alguien desea ser parte del procedimiento para la resolución necesaria debería archivar una petición apropiada de acuerdo a la Regla 25-22.039, del Código Administrativo de la Florida, con el Director, Secretario de la Comisión y la División de Servicios Administrativos en las siguientes direcciones:

Director, Commission Clerk and Administrative Services Division
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850
Re: Docket No. 070193-EI

CONFERENCIA PREVIA A LA AUDIENCIA

Una conferencia previa a la audiencia será dirigida en la siguiente dirección y hora:

31 de mayo, 2007, comenzando a las 9:30 a.m.

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

El propósito de esta conferencia de audiencia previa será para considerar: (1) la simplificación de los puntos en cuestión; (2) la identificación de las posiciones de las partes sobre estos puntos; (3) la identificación de los testigos y los documentos; (4) el establecimiento de un orden de testigos; (5) la posibilidad de obtener estipulaciones concernientes a cualquier punto en cuestión y (6) la resolución de cualquier procedimiento restante que pueda ayudar en la disposición de la acción.

APLICACIÓN

Una copia de la Petición de la resolución necesaria y el soporte de los documentos estará disponible para la inspección del público comenzando el o cerca del 27 de abril, 2007 en la página de Internet de la Comisión de Servicio Público de la Florida: www.floridapsc.com seleccionando Dockets y luego haciendo una búsqueda por el Docket No. 070193-EI. Estos documentos podrían también ser revisados durante horas de trabajo normales en la siguiente localidad:

FLORIDA PUBLIC SERVICE COMMISSION
Easley Conference Center
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

JURISDICCIÓN

La jurisdicción sobre Tampa Electric y esta acción está establecida en la Comisión de acuerdo al Capítulo 386 de los Estatutos de la Florida y la Sección 403.537 de los Estatutos de la Florida

Por la Dirección de la Comisión de Servicio Público de la Florida
Ann Cole, Directora
Secretaría de la Comisión y Servicios Administrativos



AFFIDAVIT OF PUBLICATION
THE LEDGER
Lakeland, Polk County, Florida

Case No's

STATE OF FLORIDA)
COUNTY OF POLK)

Before the undersigned authority personally appeared Paula Freeman, who on oath says that she is Inside Classified Sales Manager The Ledger, a daily newspaper published at Lakeland in Polk County, Florida; that the attached copy of advertisement, being A

Petition

in the matter of Determining the need for Electrical Transmission Line

Concerning Proposed 230-kv for Tampa Electric

was published in said newspaper in the issues of 4-21; 2007

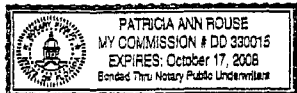
Affiant further says that said The Ledger is a newspaper published at Lakeland, in said Polk County, Florida, and that the said newspaper has heretofore been continuously published in said Polk County, Florida, daily, and has been entered as second class matter at the post office in Lakeland, in said Polk County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Signed *Paula Freeman*
Paula Freeman
Inside Classified Sales Manager
Who is personally known to me.

Sworn to and subscribed before me this 23rd
day of APRIL A.D. 2007

Patricia Ann Rouse
Notary Public

(Seal)



My Commission Expires.....

LK02279097

**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION
NOTICE OF NEED DETERMINATION HEARING
DOCKET NO. 070193-EI**

**PETITION OF TAMPA ELECTRIC TO DETERMINE
THE NEED FOR A PROPOSED 230-kV ELECTRICAL TRANSMISSION LINE**

Notice is hereby given that the Florida Public Service Commission will hold a public hearing in the above docket at the following time and place:

June 11, 2007, Beginning at 9:30 a.m.

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

PURPOSE AND PROCEDURE

The purpose of this hearing will be for a determination of need pursuant to Section 403.537, Florida Statutes (2005), for the construction of a 230-kV electrical transmission line. Segments of this 230-kV electrical transmission line may be located in Polk and Hillsborough Counties. The proposed electrical transmission line will start at Tampa Electric's planned Willow Oak substation in Polk County, continuing to the Wheeler Road substation in Hillsborough County and will terminate at Tampa Electric's planned Davis substation in Hillsborough County. The proceeding will be governed by the provisions of Chapter 120, Florida Statutes, Section 403.537, Florida Statutes, and Rules 25-22.075 and 25-22.076, Florida Administrative Code. Anyone wishing to become a party to the need determination proceeding should file an appropriate petition pursuant to Rule 25-22.039, Florida Administrative Code, with the Director, Commission Clerk and Administrative Services Division, at the following address:

Director, Commission Clerk and Administrative Services Division
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850
Re: Docket No. 070193-EI

PREHEARING CONFERENCE

A prehearing conference will be conducted at the following time and place:

May 31, 2007, Beginning at 9:30 a.m.

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

The purpose of this prehearing conference will be to consider: (1) the simplification of the issues; (2) the identification of the positions of the parties on the issues; (3) the identification of witnesses and exhibits; (4) the establishment of an order of witnesses; (5) the possibility of obtaining stipulations concerning any matters at issue; and (6) the resolution of any remaining procedural matters that may aid in the disposition of the action.

APPLICATION

A copy of the Petition for Determination of Need and supporting exhibits will be available for public inspection beginning on or about April 27, 2007 at the Florida Public Service Commission Web site: www.floridapsc.com by selecting Dockets and then search by Docket No. 070193-EI. These documents may also be reviewed during normal business hours at the following location:

FLORIDA PUBLIC SERVICE COMMISSION
Easley Conference Center
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

JURISDICTION

Jurisdiction over Tampa Electric and this action is vested in the Commission pursuant to Chapter 386, Florida Statutes and Section 403.537, Florida Statutes.

By Direction of the Florida Public Service Commission
Ann Cole, Director
Commission Clerk and Administrative Service



tampaelectric.com

TAMPA ELECTRIC COMPANY
DOCKET NO. 070193-EI
(PMD-1)

EXHIBIT TO THE TESTIMONY OF
PAUL M. DAVIS

WILLOW OAK TO DAVIS 230 KV TRANSMISSION LINE
SITING ACT DETERMINATION OF NEED DOCUMENTATION

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET NO. 070193-EI EXHIBIT 3
COMPANY TECO
WITNESS TECO-1 (PMD-1)
DATE 06/11/07

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Executive Summary

The Willow Oak to Davis 230 kV line Project (“Project”) consists of the construction of approximately 30 miles of 230 kV line in two phases or segments. The first phase, Davis to Wheeler Road consists of the construction of a new 230 kV substation adjacent to the existing River Substation in Hillsborough County and 12.3 miles of a single circuit 230 kV line to a new 230/69 kV substation at the existing Wheeler Road 69 kV substation site in Hillsborough County. The second phase consists of the construction of approximately 17.1 miles of 230 kV line from the existing Willow Oak Substation in Polk County to the new 230/69 kV Wheeler Road Substation in Hillsborough County. The Project improves system reliability, increases power transfer capability and meets the local load requirements by serving existing and future distribution substations east of I-75 and north of State Road (“S.R.”) 60 in Hillsborough County while minimizing costs to customers. The geographical area described above in which 230 and 69 kV improvements are required is the “Project Area”. Both phases which make up the Transmission Line Siting Act (“TLSA”) petition for the Project are linked and justified individually, and in combination. The need for the Project is based on the following considerations.

1. The need to provide additional transmission capability to the existing north-south 230 kV network in Hillsborough County and to the existing east-west 230 kV network between Polk County and the load centers in Hillsborough County in a reliable manner consistent with North American Electric Reliability Council

("NERC"), Florida Reliability Coordinating Council ("FRCC") and other applicable standards.

2. The need to provide additional capability to the existing 69 kV sub-transmission network in the Brandon area and northeastern Hillsborough and Polk Counties in a reliable manner consistent with NERC, FRCC and other applicable standards.
3. The need to serve the increasing load and customer base in the Project Area.
4. The opportunity to efficiently and effectively: (1) loop radial 230/69 kV substations and (2) serve new 69/13 kV distribution substations east of I-75 and north of S.R. 60 that are needed to serve the projected load growth by providing new 230/69 kV sources into the Project Area
5. The opportunity to establish another electrical source from Polk County west to the Brandon and north Tampa areas via a separate right-of-way ("ROW") path, thereby reducing the impact of any loss of the existing transmission facilities on common ROWs.

Over the past five years from 2002-2006 customer growth in Tampa Electric Company's ("Tampa Electric" or "company") service area has been increasing at a 2.6 percent Average Annual Growth Rate ("AAGR"). Similarly, for the same period, the customer AAGR in the Project Area was 3.2 percent, 0.6 percent higher than the entire service territory. For the same five-year period, the residential AAGR in the Project Area was 3.3 percent, which was 0.7 percent higher than the overall service territory AAGR of 2.6 percent. Tampa Electric is forecasting its overall service area customers to grow at an 2.2 percent AAGR over the next five years from 2007-2011 and the Project Area is

expected to continue the recent trend of higher than overall customer AAGR.

Transmission assessment studies conducted by Tampa Electric during 2006 have identified regional transmission system limitations in northeast Hillsborough and Polk Counties. These studies show that by the winter of 2012/2013, the existing 230 kV transmission and 69 kV sub-transmission networks will not have sufficient capacity to provide reliable service to existing and proposed substations in that area. Additionally, some of the projected load to be served by the proposed future distribution substations will be located further north and east of the existing 230 kV transmission network.

The Project consists of approximately 30 miles of a new 230 kV transmission line constructed in two segments that will provide a geographically separate path from Polk County to relieve the existing transmission network. The Project will also provide electric service to planned Tampa Electric distribution substations in the next five to nine years located east and north of the existing common transmission ROWs. The proposed in-service date for the Project is March 2012.

A study of transmission improvements needed for the Project Area evaluated various alternatives which resulted in the selection of the Project as the most cost-effective and efficient means to increase the capability of the existing 230 kV and 69 kV networks, provide electrical service to the new load areas and substations, and increase transfer capability from generation in the Polk County and Central Florida area.

I. Description of Tampa Electric Electrical Facilities

In order to provide an overview of Tampa Electric's existing electrical transmission system, a map of Tampa Electric's high voltage transmission network showing the general location of generating plants, major substations, and transmission lines is shown in Attachment 1. As shown on Attachment 1, the majority of the load in Hillsborough County (greater Tampa area) is served by five north-south 230 kV circuits, three of which are sited on one common ROW and the remaining two on another common ROW. The terminals of the north-south ROWs are the Big Bend, Gannon and River substations. Substantial load growth is projected around this corridor. As shown in Attachment 1, there are no direct 230 kV circuit ties to the load centers in Tampa, New Tampa, and Temple Terrace that do not rely on the north-south corridor along I-75. There are three east-west 230 kV circuits that transfer power from Polk County to Hillsborough County and serve load predominately south of S.R. 60. Two of the circuits are on a common ROW. The terminals of the east-west ROW are the Gannon, Big Bend and Pebbledale substations.

There are three 230 kV circuits that tie Polk Power Station and Central Florida interconnections to substations within Tampa Electric's service territory. Circuit 230401 picks up the Mines Substation and terminates at Big Bend Power Station. Circuits 230605 and 230606 terminate at Pebbledale Substation where two circuits, 230021 and 230625, then head west into Tampa Electric's service territory. Circuit 230021 picks up Bell Creek substation and terminates at Gannon Power Station. Circuit 230625 picks up FishHawk and Hampton substations and also terminates at Gannon Power Station.

Circuits 230021 and 230625 are on a common corridor for their entire 32 mile length and by 2013 load projections show that each overload as a result of the outage of the other one.

Underlying the 230 kV network is the 69 kV sub-transmission network throughout the Tampa Electric service territory. The 69 kV sub-transmission network serves a dual role in providing service to 69/13 kV distribution substations and network transfer capability to mitigate outages of 69 kV and 230 kV facilities. As mentioned before, the Project Area is a high growth area. There are multiple contingencies in this area that would result in overloading existing sub-transmission facilities and voltage violations. The siting of new facilities is challenging, reinforcing the need to use existing stations where possible to support load growth. The only 230/69 kV source in the Project Area is the Hampton Substation.

A listing of the history and forecast of Tampa Electric's peak demand is provided in Schedules 3.1 and 3.2 of Tampa Electric's Ten-Year Power Plant Site Plan for 2006-2015, which was submitted on April 1, 2006 to the Florida Public Service Commission and incorporated herein as Attachment 2.

II. The Willow Oak to Davis 230 kV Project

Further information and costs are provided in this section on the two construction phases or segments of the Project. The Davis to Wheeler Road segment consists of the construction of a new 230 kV substation named Davis adjacent to Tampa Electric's

existing River substation, a 230 kV transmission line from Davis to a new 230/69 kV substation at the existing Wheeler Road 69 kV substation, and a 230 kV tie between the River and Davis substations. The Willow Oak to Wheeler Road 230 kV segment consists of a single 230 kV transmission line from the existing Willow Oak substation in Polk County to the new Wheeler Road substation in Hillsborough County. In addition to providing a looped transmission circuit to both 230/69 kV substations, the proposed construction enhances reliability and power transfer capability by providing a new parallel 230 kV transmission line that increases the capability of the existing transmission network. The Project transmission line is estimated to be approximately 30 miles in length (subject to final certification under the TLISA) and will connect Tampa Electric's Willow Oak substation to Tampa Electric's Davis substation. Both segments will provide 230/69 kV sources to enable service to new 69/13 kV distribution substations in the Hillsborough County area and will provide additional capability to the existing 230 kV and 69 kV transmission networks. This Project will allow Tampa Electric to improve reliability to all customers within the Project Area consistent with NERC and FRCC planning standards. The proposed in-service date for the Project is March 2012.

Attachment 4 is a map showing the Project alternate routes along with the existing electrical facilities in the area. The line routes are conceptual and for illustrative purposes only.

A summary of the major Project components is outlined below. Construction costs include design, engineering, ROW preparation and land acquisition in nominal 2007

dollars.

Table 1: Estimated Project Costs

In Service			
Year	Segment Name	Description	Cost
June 2010	Davis to Wheeler Road 230 kV Circuit	Davis 230 kV switching substation, 230 kV tap from Davis to River, Wheeler Road 230/69 kV substation, 12.3 mile long single structure 230 kV line from Davis to Wheeler Road substations	\$30.9 Million
March 2012	Wheeler Road to Willow Oak 230 kV Circuit	17.1 mile single structure 230 kV line, from Wheeler Road to Willow Oak substations	\$40.3 Million
Total			\$71.2 Million

Estimated transmission line construction costs shown in this report are based on the circuit length shown. Estimated circuit lengths are based on a direct, plausible line routing between substations, but does not reflect all possible constraints. Changes in line length due to constraints imposed on line routing through the certification process of the TLSA will result in variations in construction costs.

III. Discussion of Need and Benefits

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

1. The need to provide additional transmission capability to the existing north-south 230 kV network in Hillsborough County and to the east-west 230 kV network between Polk County and the load centers in Hillsborough County in a reliable manner consistent with NERC, FRCC and other applicable standards;
2. The need to provide additional capability to the existing 69 kV sub-transmission network in the Brandon area and northeastern Hillsborough County in a reliable manner consistent with NERC, FRCC and other applicable standards;
3. The need to serve the increasing load and customer base in the Project Area;
4. The opportunity to efficiently and effectively: (1) loop radial 230/69 kV substations; and (2) serve new 69/13 kV distribution substations east of I-75 and north of S.R. 60 that are needed to serve the projected load growth by providing new 230/69 kV sources into the Project Area; and
5. The opportunity to establish another electrical source from Polk County west to the Brandon and North Tampa areas via a separate ROW path, thereby reducing the impact of a loss of the existing transmission facilities on common ROWs.

The above considerations can be categorized as needs and opportunities. Items 1-3 above are needs to meet the NERC and FRCC planning criteria. Items 4 and 5 are opportunities Tampa Electric has identified to improve the reliability of the Bulk Electric System for both Tampa Electric and the Central Florida region of the state.

These two sub-projects fulfill the requirements to serve the new load in the Project Areas as well as to increase the capability of the existing 230 kV and 69 kV networks.

The Project resolves several issues:

1. New load development has been identified to the east of the existing north-south 230 kV transmission corridors and north of the existing east-west corridor/ROW which will require new electrical service within the next five to nine years. Attachment 7 contains a brief description of Tampa Electric's Distribution Planning process and methodology. Attachment 8 is a table listing proposed future substations and transformer upgrades needed to serve the Project Area including proposed in-service dates and forecasted peak loadings;
2. The load served by the existing 230 kV and 69 kV transmission networks has grown to the point where an increase in the network's capability is required to maintain adequate and reliable electric service. This need is being driven by the load growth, electrical service requirements to the new load areas and substations, and by increased power transfer requirements from generation in the Polk County and Central Florida area;
3. Longer term, the Willow Oak or Hampton and Wheeler Road 230/69 kV substations will need to be looped (two 230 kV sources);
4. The selection of the Project has the additional benefit of improving reliability levels for the loss of an entire corridor. The loss of one of the existing 230 kV corridors results in unacceptable loading and voltage levels. The north-south corridor provides power from the Big Bend and Gannon power plants to the greater Tampa area load centers. The loss of this corridor results in power flowing through the 69 kV sub-transmission system at unacceptable levels. The east-west corridor provides power from the Polk Power plant and Central Florida interconnections to the greater Tampa

area. The loss of this corridor results in unacceptable voltage and loading levels for the 69 kV and 230 kV networks. The selection of the Project provides for a separate ROW path to protect for the loss of the critical north-south or the east-west common ROW; and

5. Finally, the Willow Oak to Davis 230 kV and 69 kV improvements will meet the Project Area's long term growth requirements for at least the next 10 years, based on the regional load forecast.

IV. Evaluation Based on NERC and FRCC Planning Standards

The determination of the above Project need and requirements were established through the evaluation of Tampa Electric's system based on NERC and FRCC Planning Standards. Planning for the Tampa Electric transmission system follows practices and criteria that are consistent with the NERC and FRCC and other applicable standards.

Tampa Electric's transmission planning process involves four major steps:

1. The preparation of system models;
2. The assessment of the transmission system;
3. The development and evaluation of alternatives; and
4. The selection of an alternative in consideration of reliability, voltage, capacity, economics and constructability.

A more detailed discussion of these steps is provided in Attachment 6.

The NERC Reliability Standards, which have been adopted by the FRCC, specify transmission contingency and system operating scenarios that should be evaluated, and the attendant levels of system performance that should be attained. The NERC Reliability Standards are provided in Attachment 5. The following describes the loadflow and contingency analysis used to evaluate the NERC and FRCC Reliability Standards.

V. Loadflow Results

As referenced in Attachment 9 these analyses indicate that for nine different single contingency events, a variety of overloads ranging from 101 percent to 160 percent of thermal MVA facility ratings and low voltages as low as 0.89 per unit (“pu”), could be experienced within and near the Project Area. The NERC reliability standards require that facility ratings not exceed 100 percent of the applicable thermal MVA facility rating and voltage levels remain within 0.95 pu and 1.07 pu for 230 kV stations. Without the Project, mitigation of these overloads would require the interruption of service to numerous customers, depending on the specific outage, in order to continue to operate the facilities in accordance with NERC reliability standards.

VI. Discussion of Project Alternatives

The company considered three alternatives to the proposed Project to address the needs and opportunities described earlier.

Alternative 1

Alternative 1 includes an upgrade of the north and south S.R. 60 transformers to 448 MVA and purchasing a 448 MVA spare transformer. It includes re-rating circuits 66019 and 66035 to 160 MVA, adding air core reactors to each circuit and the addition of a 50.4 MVAR capacitor bank at Wheeler Road in 2010. It also includes rebuilding 23 miles of 230 kV line FishHawk to Bell Creek and FishHawk to Gannon, constructing 11 miles of 230 kV line from Willow Oak to Hampton, upgrading the Bell Creek 230/69 kV transformer to 336 MVA and installing a new 230 kV ring bus at Hampton Substation. The estimated capital cost of Alternative 1 is \$ 80.5 million.

Alternative 1 was rejected for the following reasons:

1. The capital cost of this project was higher than the proposed project. The major reason for the higher cost is the construction of 11 miles of 230 kV line and the rebuild of 23 miles of 230 kV line. Another reason for the higher cost was due to the purchase of a spare autotransformer for the new 448 MVA S.R. 60 transformers. This new spare autotransformer would only be used at S.R. 60 due to its physical dimensions.
2. Alternative 1 does not provide a long term solution for the voltage problems in the high load growth area north of S.R. 60 and east of I-75. The addition of the capacitor bank at Wheeler Road mitigates the contingency voltage violations until 2014. The only other solution found at that point is the addition of a new 230 kV source in the area.
3. Alternative 1 does not mitigate the east to west or north to south corridor outages.

Alternative 2

Alternative 2 includes the same series of sub-projects as Alternative 1 to address the sub-transmission system issues. In addition to the upgrade of the Bell Creek transformer to 336 MVA, it includes the following set of sub-projects to address the bulk issues: construction of a new 9 mile long Willow Oak to FishHawk 230 kV circuit and rebuild 23 miles of 230 kV line from FishHawk to Bell Creek and FishHawk to Gannon. The estimated capital cost of Alternative 2 is \$74.5 million.

Alternative 2 was rejected for the following reasons:

1. The capital cost of Alternative 2 was higher than the proposed Project. The main reasons for the higher cost are the construction of nine miles of 230 kV line and the rebuild of 23 miles of 230 kV line. Another reason for the higher cost was due to the purchase of a spare autotransformer for the new 448 MVA S.R. 60 transformers. This new spare autotransformer would only be used at S.R. 60 due to its physical dimensions
2. Alternative 2 does not provide a long term solution for the voltage problems in the high load growth area north of S.R. 60 and east of I-75. The addition of the capacitor bank at Wheeler Road mitigates the contingency voltage violations until 2014. The only other solution found at that point is the addition of a new 230 kV source in the area.
3. Alternative 2 does not provide looped transmission service to the heavily loaded Hampton 230/69 kV Substation as Alternative 1. Without a Wheeler Road 230/69 Substation Hampton is the only 230 kV source in the densely loaded Brandon area.
4. Alternative 2 does not mitigate the east to west or north to south corridor outages.

Alternative 3

Alternative 3 includes the same series of sub-projects as Alternative 1 to address the sub-transmission system issues. It includes the following set of projects to address the bulk issues: construct a new nine mile long Willow Oak to FishHawk 230 kV circuit and a new 30 mile 230 kV circuit from Griffin to Dale Mabry Substation. The estimated capital cost of Alternative 3 is \$89.5 million.

Alternative 3 was rejected for the following reasons:

1. The capital cost of Alternative 3 was the highest of all the alternatives. The major reason for the higher cost is the construction of 39 miles of 230 kV line. Another reason for the higher cost was due to the purchase of a spare autotransformer for the new 448 MVA north S.R. 60 transformer. This new spare autotransformer would only be used at S.R. 60 due to its physical dimensions
2. Alternative 3 does not provide a long term solution for the voltage problems in the high load growth area north of S.R. 60 and east of I-75. The addition of the capacitor bank at Wheeler Road mitigates the contingency voltage violations until 2014. The only other solution found at that point is the addition of a new 230 kV source in the area.
3. Alternative 3 does not provide looped transmission service to the heavily loaded Hampton 230/69 kV substation as Alternative 1. Without a Wheeler Road 230/69 substation Hampton is the only 230 source in the densely loaded Brandon area.

Summary of Alternatives

All three alternatives represent a higher capital investment than the preferred Project and none of the alternatives resolve both the issue of looping the 230/69 kV substations

and the mitigation for the loss of either the east-west or north-south 230 kV corridors. Additionally, some of the alternatives are marginal in resolving expected overload and low voltage conditions. The selection of the Project resolves all of these issues at a lower capital investment and represents a long term solution of providing needed improvements to the 230 kV transmission and 69 kV sub-transmission networks.

VII. Adverse Consequences of Not Constructing Project

As stated earlier, the two phases or segments of the Project were justified individually and in combination to improve system reliability and were compatible with long range area requirements and in providing operating flexibility. In this section the adverse consequences are addressed for the total Project scope.

The adverse consequences of not constructing the Project are listed below:

1. Reliability will not be maintained for approximately 65,000 customers in the Project Area.
2. Contingency bulk power flows will continue to compromise the underlying 69 kV system forcing additional mitigation measures to be taken.
3. The overall cost to address short term contingency and long term growth rate will be higher.
4. Both Hampton and Willow Oak 230/69 kV substations serving Hillsborough and Polk counties north of S.R. 60 will be subject to loss of load for single line outages.

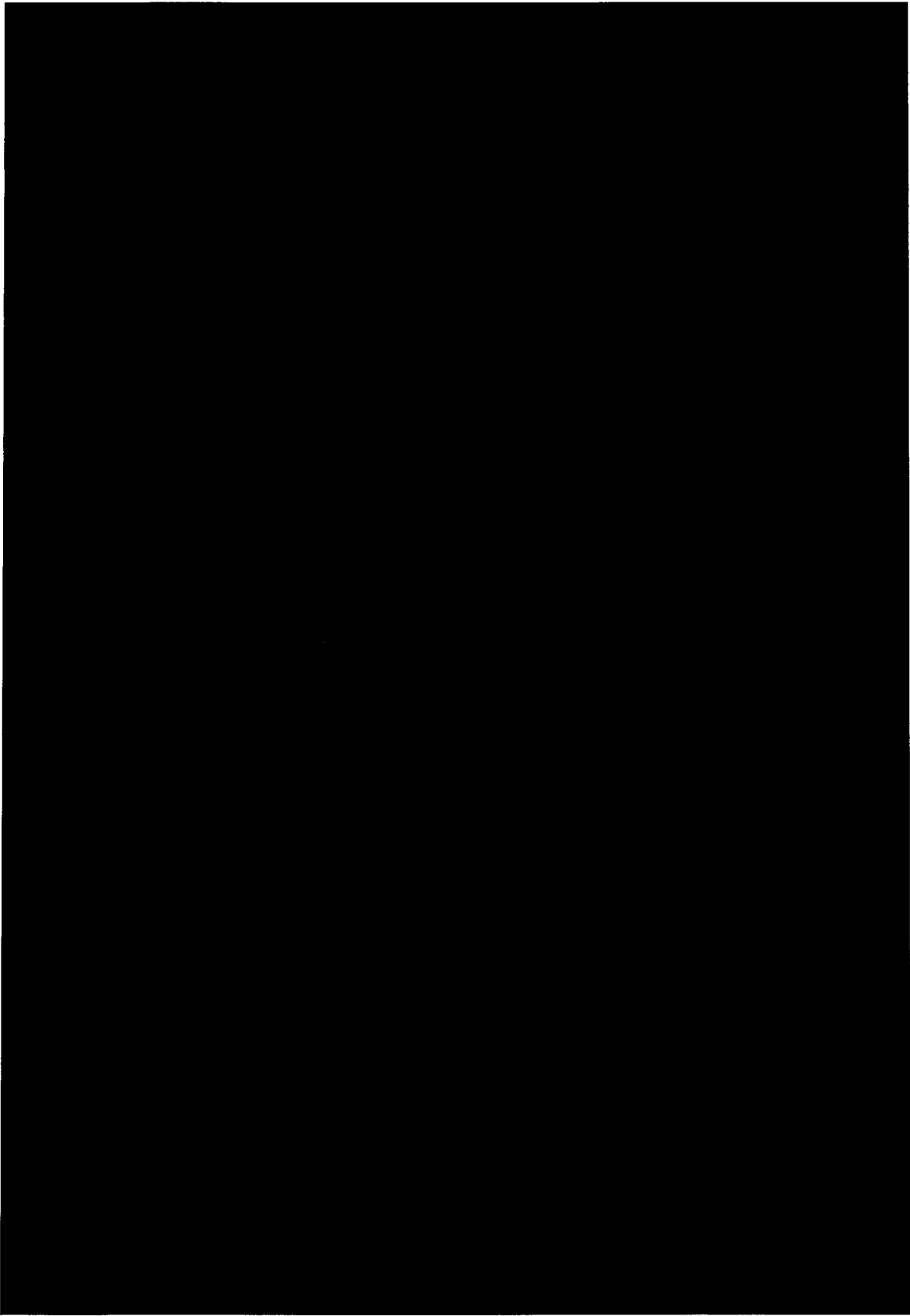
5. An east-west corridor outage will leave only one 230 kV circuit from Polk County to Tampa Electric's load center limiting import capability and Polk generation.
6. A north-south corridor outage will overload the sub-transmission system.
7. There will be increased system losses of 4 MW.

VIII. Conclusion

The Project corrects contingency overloads and voltage violations, provides a new 230 kV path from Polk County to Tampa Electric's load center independent of existing corridors, enhances Tampa Electric's import and export capability and is the most cost effective solution that compliments state wide transmission plans.

IX. Attachments

ATTACHMENT 1
TAMPA ELECTRIC COMPANY
ELECTRIC FACILITIES MAP
(GENERAL MAP)



ATTACHMENT 2
TAMPA ELECTRIC COMPANY
HISTORY AND FORECAST OF WINTER PEAK DEMAND

Schedule 3.2

History and Forecast of Winter Peak Demand
Base Case

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total *	Wholesale **	Retail *	Interruptible	Residential Load Management	Residential Conservation	Comm./Ind. Load Management	Comm./Ind. Conservation	Net Firm Demand
1996/97	3,632	109	3,523	228	164	353	21	38	2,719
1997/98	3,231	99	3,132	210	160	370	21	39	2,332
1998/99	3,985	131	3,854	152	266	388	18	40	2,990
1999/00	4,019	125	3,894	212	209	402	19	43	3,009
2000/01	4,405	136	4,269	191	196	410	21	44	3,407
2001/02	4,217	127	4,090	168	176	419	22	46	3,259
2002/03	4,484	129	4,355	195	210	428	21	46	3,455
2003/04	3,949	120	3,829	254	136	437	18	48	2,936
2004/05	4,308	129	4,179	194	189	444	16	49	3,287
2005/06	4,404	171	4,233	51	144	447	18	50	3,523
2006/07	5,057	191	4,866	160	143	452	16	50	4,046
2007/08	5,185	191	4,994	160	134	455	16	51	4,178
2008/09	5,303	178	5,124	160	131	458	17	51	4,308
2009/10	5,436	178	5,257	160	128	461	17	52	4,440
2010/11	5,565	178	5,387	160	126	463	18	52	4,568
2011/12	5,627	107	5,520	160	124	465	18	52	4,700
2012/13	5,752	91	5,660	160	123	467	19	52	4,839
2013/14	5,887	77	5,810	160	121	469	19	53	4,988
2014/15	6,043	77	5,967	161	120	470	20	53	5,143
2015/16	6,203	77	6,126	160	118	471	20	53	5,304

December 31, 2006 Status

* Includes cumulative conservation.

** Includes sales to Progress Energy Florida, Wauchula, Fort Meade, St. Cloud and Reedy Creek.

Note: Values shown may be affected due to rounding.

**ATTACHMENT 3
TAMPA ELECTRIC COMPANY
HISTORY AND FORECAST OF CUSTOMER AND
ENERGY SALES GROWTH**

CUSTOMERS GROWTH:

Over the past five years (2002-2006), the number of Customers in the East Region has grown by an average annual growth rate (AAGR) of 3.2 percent, 0.6 percent higher than Tampa Electric's entire service area (2.6 percent). Tampa Electric is forecasting service area customers to grow an AAGR of 2.2 percent over the next five years (2007-2011).

RESIDENTIAL CUSTOMERS:

Over the past five years (2002-2006), residential Customers in the East Region have grown by an average annual growth rate (AAGR) of 3.3 percent, 0.7 percent higher than Tampa Electric's entire service area (2.6 percent). Tampa Electric is forecasting service area residential Customers to grow an AAGR of 2.3 percent over the next five years (2007-2011).

SALES:

Over the past five years (2002-2006), energy sales in the East Region have grown by an average annual growth rate (AAGR) of 2.7 percent, 1.2 percent higher than Tampa Electric's entire service area (1.5 percent). Tampa Electric is

forecasting service area sales to grow an AAGR of 2.8 percent over the next five years (2007-2011).

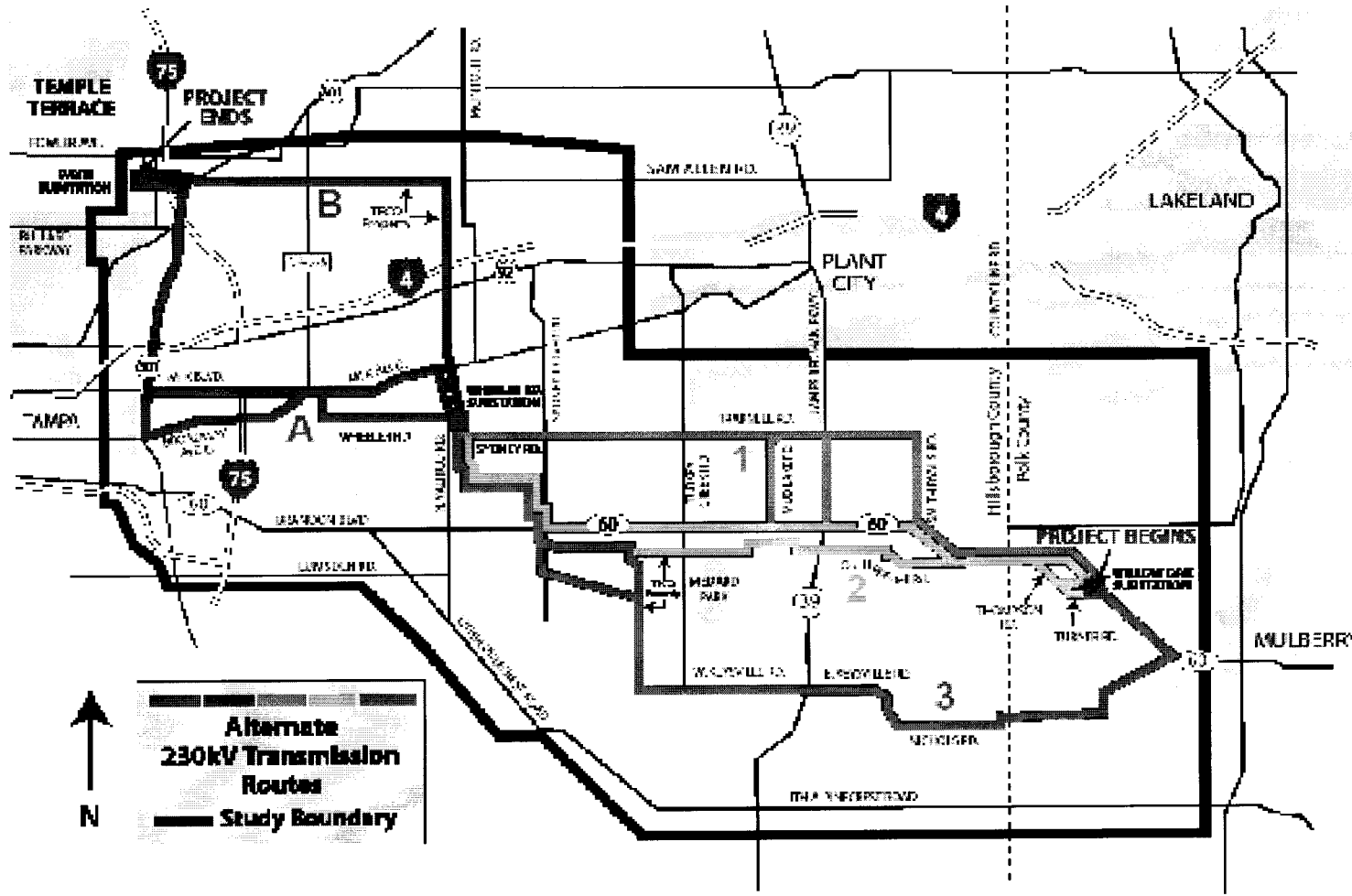
RESIDENTIAL SALES:

Over the past five years (2002-2006), residential energy sales in the East Region have grown by an average annual growth rate (AAGR) of 2.4 percent, 0.4 percent higher than Tampa Electric's entire service area (2.0 percent). Tampa Electric is forecasting service area sales to grow an AAGR of 3.2 percent over the next five years (2007-2011).

ATTACHMENT 4
**MAP OF STUDY AREA WITH EXISTING FACILITIES AND
PROPOSED PROJECTS**



Willow Oak-Wheeler-Davis Alternate Route Segments



DATE: 11/26/2014

ATTACHMENT 5

NERC TRANSMISSION PLANNING CRITERIA

The NERC Reliability Standards under Transmission Planning are divided into categories A, B, C and D and Tampa Electric Company uses these Standards as 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 primary 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 5. Generally, Category C and D multiple contingency analysis is used to identify potential situations of cascading interruptions or instability. The planned transmission system with its expected loads and transfers must be stable and within applicable ratings for all Category A, and B contingency scenarios. The effect of Category C and D contingencies on system stability is also evaluated. The design of new transmission connections should take into account and minimize, to the extent practical, the adverse consequences of Category C and D contingencies. Lower probability Category C and 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 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 6

TRANSMISSION PLANNING PROCESS

Step 1: Preparation of System Models

To prepare system models¹, 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, Distribution Planning is asked to provide Transmission Planning with 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 within the FRCC Regions are also represented.

¹ The models used for this analysis are the Florida Reliability Coordinating Council's year 2006 winter load flow databank cases modeling expected system conditions in the winter of 2012/13. These models are run on Power Tampa Electric Company 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 programs. These outage contingencies consist of two types as discussed in Attachment 5: (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. All single and credible 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 Tampa Electric Company 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 looking at reliability, voltage, capacity, economics, and constructability (See Attachment 10). After evaluating the transmission system project alternatives, the project that best meets the requirements listed above is selected.

ATTACHMENT 7

DISTRIBUTION PLANNING PROCESS AND METHODOLOGY

Distribution Load Forecast

System Planning develops a load forecasting model for its seven service areas for 10 years which begins with the previous year's system instantaneous summer peak load. The load on each feeder circuit at the time of the system peak is downloaded into the model as the base load. The planner reviews each circuit and adds future known loads based on Service Alerts from Customer service requests. The planner also increments the load by a percentage growth rate based on the potential load growth in the area and publication of potential future projects. The feeder loads are totaled for each year and equal the forecasted peak load developed by Economic Planning and Forecasting.

Distribution System Assessment

The distribution planner reviews circuit loading, distribution transformer loading and distribution reactive power loading on an annual basis for the next five years. Thermal overloads and/or voltage violations are identified at this time.

Development and Evaluation of Alternatives

Once it has been determined that additional distribution capacity is required in an area, System Planning develops various alternatives for meeting the system growth for both the short term and long term. Cost estimates are developed for

each alternative. The alternatives are then evaluated based on the impact to reliability, voltage, capacity, economics, and constructability. The best overall solution is chosen to accommodate system growth.

**ATTACHMENT 8
PROPOSED FUTURE SUBSTATIONS AND LOADS IN
THE PROJECT SERVICE AREAS**

PROPOSED FUTURE SUBSTATIONS AND LOADS

In-Service	Substation	County	Long Term Load (MW)
2008	Hampton S Tx Upgrade to 37 MW	Hillsborough	74
2009	Plant City 2 nd Tx	Hillsborough	56
2009	Cass Street	Hillsborough	56
2010	Chapman	Hillsborough	28
2010	Compark	Hillsborough	28
2010	Wilderness	Hillsborough	28
2011	Alexander W Tx Upgrade to 37MW	Hillsborough	74
2011	Tampa Palms E Tx	Hillsborough	65
2015	Imperial Lakes 2 nd Tx	Hillsborough	56

**ATTACHMENT 9
LOAD FLOW SUMMARY TABLE**

ATTACHMENT 9 LOAD FLOW SUMMARY TABLE

Contingency	Without Project		With Project	
	Overload	Voltage Violation	Overload	Voltage Violation
1 SR 60 North 230/69 kV transformer			None	None
2 SR 60 South 230/69 kV transformer			None	None
3 Circuit 66016 SR 60 to SR 574			None	None
4 Wheeler Road 69 kV bus tie breaker			None	None
6 Pebbledale-FishHawk Circuit 2			None	None
7 Pebbledale-FishHawk Circuit 1			None	None

ATTACHMENT 9 LOAD FLOW SUMMARY TABLE

Contingency	Without Project		With Project	
	Overload	Voltage Violation	Overload	Voltage Violation
8 Pebbledale to FishHawk Corridor Outage			None	None
			Circuit 66419 Hopewell to Mulberry - 100.2%	None
9 Ruskin 230/69 kV Transformer			None	None
			Circuit 66088 - S Gib to East Bay 101.7%	None

**ATTACHMENT 10
TRANSMISSION ALTERNATIVE DECISION
MAKING ANALYSIS**

**ATTACHMENT 10
TRANSMISSION ALTERNATIVE DECISION MAKING ANALYSIS**

Alternative Evaluation for: **Wheeler Road 230/69 kV Substation and Wheeler Road to Willow Oak 230 kV Circuit**

Planner:

Date:

<u>Alternative</u>	Description of Alternative
Proposed Project	Wheeler Road 230/69 kV Substation, Davis - Wheeler Road - Willow Oak 230 kV Circuit
Alternative 1	Willow Oak to Hampton
Alternative 2	Willow Oak to FishHawk
Alternative 3	Griffin to Dale Mabry

Evaluation Components and Sub Components	Proposed project			Alternative 1			Alternative 2			Alternative 3		
	Score (0-3) B	Weight Factor C	Weighted score BXC	Score (0-3) E	Weight Factor C	Weighted score EXF	Score (0-3) E	Weight Factor C	Weighted score EXF	Score (0-3) E	Weight Factor C	Weighted score EXF
<u>Reliability Sub Component</u>												
SAIDI	2.0	0.5	1.0	1.0	0.5	0.5	1.0	0.5	0.5	1.0	0.5	0.5
MAIFI	2.0	0.5	1.0	1.0	0.5	0.5	1.0	0.5	0.5	1.0	0.5	0.5
Sub Component Average			1.0			0.5			0.5			0.5
Fixed Reliability Component Weight Factor = 4												
Reliability Component Score												
4XSub Component Average			4.0			2.0			2.0			2.0
Comments:												
<u>Voltage Sub Component</u>												
Steady State Voltage	3.0	0.33	1.0	2.0	0.33	0.7	2.0	0.33	0.7	2.0	0.33	0.7
Steady State Voltage Variation	3.0	0.33	1.0	2.0	0.33	0.7	2.0	0.33	0.7	2.0	0.33	0.7
Transient Voltage	1.0	0.33	0.3	1.0	0.33	0.3	1.0	0.33	0.3	1.0	0.33	0.3
Sub Component Average			0.8			0.6			0.6			0.6
Fixed Voltage Component Weight Factor = 3												
Voltage Component Score 3XSub Component Average			2.3			1.7			1.7			1.7
Comments:												
<u>Capacity Sub Component</u>												
Load Growth	3.0	0.33	1.0	1.0	0.33	0.3	1.0	0.33	0.3	1.0	0.33	0.3
Relay Service	0.0	0.33	0.0	0.0	0.33	0.0	0.0	0.33	0.0	0.0	0.33	0.0
Capacity Expansion	3.0	0.33	1.0	1.0	0.33	0.3	3.0	0.33	1.0	1.0	0.33	0.3
Sub Component Average			0.7			0.2			0.4			0.2
Fixed Capacity Component Weight Factor = 3												
Capacity Component Score 3XSub Component Average			2.0			0.7			1.3			0.7
Comments:												
<u>Construction Sub Component</u>												
Lead Time	2.0	0.33	0.7	3.0	0.33	1.0	3.0	0.33	1.0	3.0	0.33	1.0
Ease/safety	2.0	0.33	0.7	2.0	0.33	0.7	2.0	0.33	0.7	2.0	0.33	0.7
Environmental Impact	2.0	0.33	0.7	2.0	0.33	0.7	2.0	0.33	0.7	2.0	0.33	0.7
Sub Component Average			0.7			0.8			0.8			0.8
Fixed Construction Component Weight Factor = 1												
Construction Component Score 1XSub Component Average			0.7			0.8			0.8			0.8
Comments:												
<u>Transmission Sub Component</u>												
Complements Long Range Expansic Capacity	3.0	0.5	1.5	1.0	0.5	0.5	1.0	0.5	0.5	1.0	0.5	0.5
	3.0	0.5	1.5	1.0	0.5	0.5	1.0	0.5	0.5	1.0	0.5	0.5
Sub Component Average			1.5			0.5			0.5			0.5

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**ATTACHMENT 10
TRANSMISSION ALTERNATIVE DECISION MAKING ANALYSIS**

Alternative Evaluation for: **Wheeler Road 230/69 kV Substation and Wheeler Road to Willow Oak 230 kV Circuit**

Planner:

Date:

Description of Alternative

Wheeler Road 230/69 kV Substation, Davis - Wheeler Road - Willow Oak 230 kV Circuit

Willow Oak to Hampton

Willow Oak to FishHawk

Griffin to Dale Mabry

Alternative

Proposed Project

Alternative 1

Alternative 2

Alternative 3

Evaluation Components and Sub Components	Proposed project			Alternative 1			Alternative 2			Alternative 3		
	Score (0-3) B	Weight Factor C	Weighted score BXC	Score (0-3) E	Weight Factor C	Weighted score EXF	Score (0-3) E	Weight Factor C	Weighted score EXF	Score (0-3) E	Weight Factor C	Weighted score EXF
Fixed Transmission Component Weight Factor = 2 Transmission Component Score 2XSub Component Average			3.0			1.0			1.0			1.0
Comments:												
<u>Economics Sub Component</u>												
Initial Cost	3	0.5	1.5	1	0.5	0.5	2	0.5	1	0	0.5	0
Time Value	3	0.5	1.5	1	0.5	0.5	2	0.5	1	0	0.5	0
Sub Component Average			1			0.5			1			0
Fixed Economics Component Weight Factor = 5 Economics Component Score 5XSub Component Average			5			2.5			5			0
Comments:												
<u>Other Sub Component</u>												
Enhanced Import Capability	3	1	3	1	1	1	1	1	1	2	1	2
Sub Component Average			3			1			1			2
Fixed Other Component Weight Factor = 2 Other Component Score 2XSub Component Average			6			2			2			4
Comments:												

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**ATTACHMENT 10
TRANSMISSION ALTERNATIVE DECISION MAKING ANALYSIS**

Alternative Evaluation for: **Wheeler Road 230/69 kV Substation and Wheeler Road to Willow Oak 230 kV Circuit**

Planner:

Date:

<u>Alternative</u>	<u>Description of Alternative</u>
Proposed Project	Wheeler Road 230/69 kV Substation, Davis - Wheeler Road - Willow Oak 230 kV Circuit
Alternative 1	Willow Oak to Hampton
Alternative 2	Willow Oak to FishHawk
Alternative 3	Griffin to Dale Mabry

Evaluation Components and Sub Components	Proposed project			Alternative 1		
	Score (0-3) B	Weight Factor C	Weighted score BXC	Score (0-3) E	Weight Factor C	Weighted score EXF

Major Components of Comparison

	Proposed	Alternative 1	Alternative 2	Alternative 3	Alternative 4
RELIABILITY	4	2	2.0	2.0	
VOLTAGE	2.31	1.65	1.7	1.7	
CAPACITY	1.98	0.66	1.3	0.7	
CONSTRUCTION/ LEAD TIME	0.7	0.825	0.8	0.8	
TRANSMISSION	3.0	1	1.0	1.0	
ECONOMICS	5	2.5	5	0	
OTHER	6	2	2	4	
GRAND TOTAL	23.0	10.6	13.8	10.1	
Preferred Project: Higher Score Better					