

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for Determination that) DOCKET NO. _____
the Osprey Plant Acquisition and,)
alternatively, the Suwannee Simple) Submitted for filing: January 30, 2015
Cycle Project is the most Cost Effective)
Generation Alternative to meet the)
Remaining Need Prior to 2018 for)
Duke Energy Florida, Inc.)
_____)

DUKE ENERGY FLORIDA, INC.'S NOTICE OF FILING

Duke Energy Florida, Inc. ("DEF" or the "Company") hereby gives notice of filing the Direct Testimony of Mark E. Landseidel with Exhibits MEL-1 through MEL-4 in support of DEF's Petition for Determination that the Osprey Plant Acquisition and, alternatively, the Suwannee Simple Cycle Project is the most Cost Effective Generation Alternative to Meet the Remaining Need Prior to 2018 for Duke Energy Florida, Inc.

Respectfully submitted this 30th day of January, 2015.

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DOCKET NO. _____
Submitted for filing: Jan. 30, 2015

REDACTED

**DIRECT TESTIMONY
OF MARK E. LANDSEIDEL**

**ON BEHALF OF
DUKE ENERGY FLORIDA, INC.**

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**IN RE: PETITION FOR DETERMINATION THAT THE OSPREY
PLANT ACQUISITION AND, ALTERNATIVELY, THE SUWANNEE
SIMPLE CYCLE PROJECT IS THE MOST COST EFFECTIVE
GENERATION ALTERNATIVE TO MEET THE REMAINING NEED
PRIOR TO 2018 FOR DUKE ENERGY FLORIDA, INC.**

BY DUKE ENERGY FLORIDA, INC.

FPSC DOCKET NO. _____

DIRECT TESTIMONY OF MARK E. LANDSEIDEL

1 **I. INTRODUCTION AND QUALIFICATIONS.**

2 **Q. Please state your name, employer, and business address.**

3 A. My name is Mark E. Landseidel and I am employed by Duke Energy Corporation
4 (“Duke Energy”). My business address is 400 South Tryon Street, Charlotte, North
5 Carolina.

6

7 **Q. Please tell us your position with Duke Energy and describe your duties and
8 responsibilities in that position.**

9 A. I am the Director of Project Development and Initiation in the Duke Energy
10 Corporation Project Management and Construction (“PMC”) Department. In this role,
11 I am responsible for the initiation and development of major non-nuclear generation
12 projects for Duke Energy Florida, Inc. (“DEF” or the “Company”). As Director of
13 Project Development, I have responsibility and management oversight for the
14 Suwannee Simple Cycle combustion turbine project for the Company.

15

1 **Q. Please summarize your educational background and employment experience.**

2 A. I graduated from Colorado State University in May 1982 with a Bachelor of Science
3 in Engineering. I completed the General Manager Program at Harvard Business
4 School in November 2001. I am a certified Project Management Professional. I
5 joined Duke Energy Corporation in July 1982 and I have worked in a number of
6 departments including plant operations, plant maintenance, business development, and
7 project management and construction in my 32 year career with Duke Energy. I have
8 been responsible for project development, project management and construction of a
9 number of major projects since August 1996, including responsibility for the initiation,
10 development, and construction for combustion turbine and combined cycle generation
11 plants, including the W.S. Lee 2 unit Combustion Turbine project completed in 2006,
12 Buck 2X1 Combined Cycle project completed in 2011, the Dan River 2X1 Combined
13 Cycle project completed in 2012, the W.S. Lee 2X1 Combined Cycle project that
14 begins construction in 2015, and the Citrus County 4X2 Combined Cycle project that
15 begins construction in 2016. I assumed my current position with Duke Energy
16 Corporation in July 2012.

17
18 **II. PURPOSE AND SUMMARY OF TESTIMONY.**

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

20 A. I am testifying on behalf of the Company in support of its Petition for Determination
21 of Cost Effective Alternative to Meet Need prior to 2018 for Duke Energy Florida,
22 Inc. I will describe and explain the site and unit characteristics for the Suwannee
23 Simple Cycle combustion turbine project, including its size, equipment, equipment

1 configuration, fuel type, supply modes, and other aspects of the project. I will also
2 explain the estimated costs and projected in-service dates for the Suwannee Simple
3 Cycle Project. As explained by other DEF witnesses, the Suwannee Simple Cycle
4 Project is an alternative to the Calpine Osprey plant acquisition, such that if that
5 acquisition does not receive applicable regulatory approvals, the Company will be able
6 to restart its work on the Suwannee project and still meet the necessary in-service date
7 to reliably meet DEF's need.

8
9 **Q. Are you sponsoring any exhibits to your testimony?**

10 **A.** Yes. I am sponsoring the following exhibits to my testimony:

- 11 • Exhibit No. ____ (MEL-1), a map showing the location of the Suwannee power
12 plant site in Suwannee County, Florida;
- 13 • Exhibit No. ____ (MEL-2), the preliminary layout of the Suwannee Simple
14 Cycle project at the Suwannee power plant site;
- 15 • Exhibit No. ____ (MEL-3), an itemization of the major cost items for the
16 Suwannee Simple Cycle project; and
- 17 • Exhibit No. ____ (MEL-4), the confidential projected schedule for completion
18 of the Suwannee Simple Cycle project.

19 Each of these exhibits was prepared under my direction and control, and each is true
20 and accurate.

1 **Q. Please summarize your testimony.**

2 A. The Suwannee Simple Cycle project is a cost effective option to fulfill DEF's
3 remaining capacity and energy needs prior to 2018, if the Company cannot purchase
4 Calpine's Osprey Plant. The Suwannee Simple Cycle project leverages use of existing
5 land, gas, and transmission infrastructure at the Suwannee power plant site and will
6 have low air emissions using proven technology. In addition, the F class combustion
7 turbine technology is well suited to peaking capacity needs with both fast start
8 capability and high reliability. If DEF cannot purchase the Osprey plant, the Company
9 is positioned to build this project on schedule and on budget to place the Suwannee
10 Simple Cycle Project in commercial operation in June 2017.

11
12 **III. THE SUWANNEE SIMPLE CYCLE PROJECT.**

13 **Q. What is the Suwannee Simple Cycle Project?**

14 A. The Suwannee Simple Cycle project is a state-of-the-art combustion turbine
15 generation project. Two dual fuel F class combustion turbine generators will be
16 purchased and installed together with two generator step-up transformers to generate
17 an estimated 320 MegaWatts ("MW") of electrical power for DEF's customers. The
18 Suwannee Simple Cycle project will also include fuel oil and demineralized water
19 storage tanks, and related balance of plant facilities.

20
21 **Q. Where will the Suwannee Simple Cycle project be located?**

22 A. If DEF cannot purchase the Osprey plant, the Suwannee Simple Cycle project will be
23 located at the Company's existing Suwannee power plant site. The Suwannee site has

1 existing combustion turbines fired by gas and oil and existing steam units with
2 supporting pipeline and transmission infrastructure. The Suwannee power plant site is
3 located near Live Oak in Suwannee County, Florida. The location of the Suwannee
4 power plant site is shown in Exhibit No. ___ (MEL-1) to my direct testimony.
5

6 **Q. Are there advantages to building this combustion turbine project at the**
7 **Suwannee site?**

8 A. Yes. The Suwannee Simple Cycle project will leverage use of existing land, gas, and
9 transmission infrastructure at the site, minimizing the need to purchase or build this
10 infrastructure for the project. Thus, the only land that has been purchased is an
11 additional 24 acres located adjacent to the site for an additional buffer area.
12 Additionally, the project will use existing transmission infrastructure at the site as
13 much as possible. One of the F class combustion turbines will be connected to the
14 existing 115kV transmission switchyard and the other F class combustion turbine will
15 be connected to the existing 230kV transmission switchyard. The only anticipated
16 transmission costs are for these connections, bus lines, and associated interconnection
17 support equipment and installation. Natural gas will be supplied to the two F class
18 combustion turbines by the Florida Gas Transmission (“FGT”) pipeline and a local gas
19 lateral to the existing site metering and regulating station on site. The existing steam
20 plant will be retired, thus modernizing the fleet and reducing the site environmental
21 impacts. The preliminary layout for the Suwannee Simple Cycle project at the
22 Suwannee power plant site is shown in Exhibit No. ___ (MEL-2) to my direct
23 testimony.

1 **Q. How does the Company plan to construct the Suwannee Simple Cycle project?**

2 A. DEF awarded the major equipment contracts, including the F class combustion
3 turbines and generator step-up transformers, directly from the equipment
4 manufacturers pursuant to requests for proposals (“RFPs”) to experienced
5 manufacturers. DEF also awarded an engineering, procurement, and construction
6 (“EPC”) contract to an experienced EPC contractor pursuant to an RFP. Duke Energy
7 has experience with this contracting approach, having successfully executed several
8 simple and combined cycle gas turbine projects with it including the W.S. Lee
9 Combustion Turbines (2006), Hines Combined Cycle Power Blocks 3&4 (2005,
10 2007), Bartow Combined Cycle (2009), H.F. Lee Combustion Turbine 5 (2009), Buck
11 Combined Cycle (2011), H.F. Lee Combined Cycle (2012), Dan River Combined
12 Cycle (2012), and the Sutton Combined Cycle (2013). DEF plans to employ lessons
13 learned and best practices from these prior Duke Energy successful gas turbine
14 projects on the Suwannee Simple Cycle project.

15
16 **Q. If the Osprey purchase does not receive regulatory approvals, what will it cost to
17 build the Suwannee Simple Cycle project?**

18 A. DEF estimates that it will cost approximately \$195.1 million, including the Allowance
19 for Funds Used During Construction (“AFUDC”), to build the Suwannee Simple
20 Cycle project. This estimate includes the cost to purchase the combustion turbine
21 generators and step-up transformers, along with other equipment for the project; the
22 engineering, procurement, and construction contract costs to build the project; owner
23 costs; and the transmission switchyard and bus line work to connect the project to the

1 grid. A breakdown of the major cost items for the Suwannee Simple Cycle project is
2 included in Exhibit No. ___ (MEL-3) to my direct testimony.

3
4 **Q. What will it cost to operate the Suwannee Simple Cycle project?**

5 A. The estimated incremental annual fixed operation and maintenance (“O&M”) cost for
6 the Suwannee Simple Cycle project is \$1.4 million. The predominate costs in the
7 fixed O&M for the project are labor and labor-related operating costs for the
8 employees required for plant operation. Other costs included in the fixed O&M
9 estimate are O&M support and indirect costs.

10 There are also variable O&M costs to operate the Suwannee Simple Cycle
11 plant. The estimated variable O&M cost for the Suwannee Simple Cycle project is
12 \$700,000. These variable O&M costs include maintenance costs, such as planned
13 equipment inspections and overhauls, water, chemicals, lubricants, and consumables.

14
15 **Q. If the Suwannee Simple Cycle project is built, what will be its operational
16 characteristics?**

17 A. If DEF cannot purchase the Osprey plant, the Suwannee Simple Cycle project will
18 provide DEF with approximately 320MW peaking generation capacity from utility
19 industry proven F class combustion turbines. It will have an average summer full load
20 heat rate of approximately 10,395 British Thermal Units (“BTUs”) per kilowatt-hour
21 (“kWh”) Higher Heating Value (“HHV”). The Suwannee Simple Cycle is expected to
22 operate at a capacity factor range consistent with its peaking generation capacity role
23 on DEF’s system. The plant will have low air emissions using proven dry, low NOx

1 combustors with water injection when operating on oil. In addition, the F class
2 combustion turbine technology is well suited to peaking capacity needs with both fast
3 start capability and high reliability. Peaking capacity units are cost effective and
4 necessary for customer reliability in times of peak demand or system upsets.
5

6 **Q. What is the schedule for construction of the Suwannee Simple Cycle project?**

7 A. The Suwannee Simple Cycle project is scheduled for commercial operation in June
8 2017. To meet this schedule, DEF must commence work on the Suwannee Simple
9 Cycle project no later than [REDACTED] DEF plans to commence this work on
10 [REDACTED] if DEF has not obtained the necessary regulatory approvals for the
11 Calpine Osprey plant acquisition by [REDACTED] A copy of the current major
12 milestone schedule for permitting and construction of the Suwannee Simple Cycle
13 project is included in Exhibit No. ___ (MEL-4) to my direct testimony.
14

15 **Q. Will the Company place the Suwannee Simple Cycle project in service by that**
16 **date?**

17 A. Yes, if DEF cannot purchase the Osprey plant. In my opinion, the schedule for
18 completion of the Suwannee Simple Cycle project is reasonable and it can be met by
19 the Company. If the Company commences work on the Suwannee Simple Cycle
20 project on [REDACTED] DEF will place the Suwannee Simple Cycle combustion
21 turbines in commercial operation by June 2017.
22

1 **Q. If DEF can proceed with acquiring the Calpine Osprey Plant, what impact will**
2 **that have on the Suwannee Simple Cycle Project?**

3 A. The Company will not continue with the Suwannee Simple Cycle project if it can
4 acquire the Calpine Osprey Plant. The details of that alternative, including provisions
5 that obligate Calpine to reimburse DEF for its costs already expended on the
6 Suwannee Simple Cycle project, are explained by DEF witness Mr. Matthew Palasek.

7

8 **IV. CONCLUSION.**

9 **Q. Will the Company build the Suwannee Simple Cycle project on time and on**
10 **budget?**

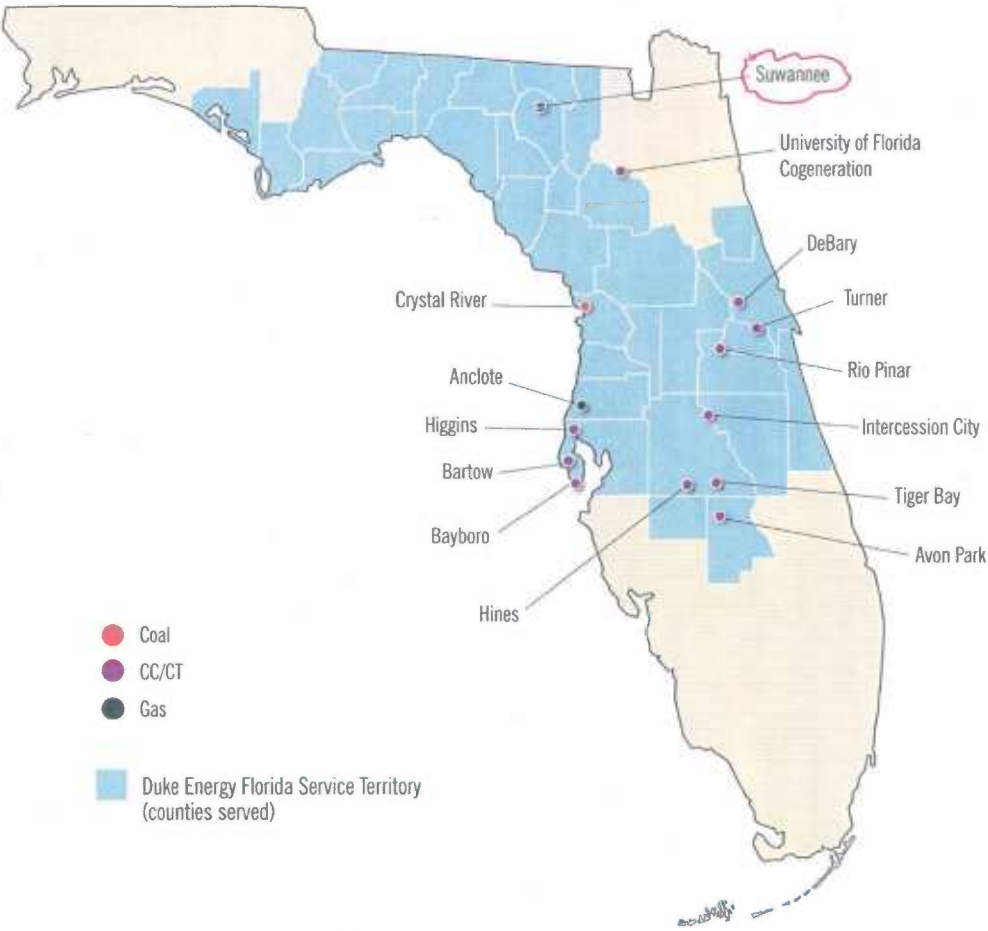
11 A. Yes, in my opinion, if the Company cannot purchase the Osprey plant, DEF will build
12 the Suwannee Simple Cycle project on time and on budget and the Suwannee Simple
13 Cycle combustion turbines will provide reliable, cost-effective generation capacity
14 prior to 2018 consistent with DEF's capacity and energy needs.

15

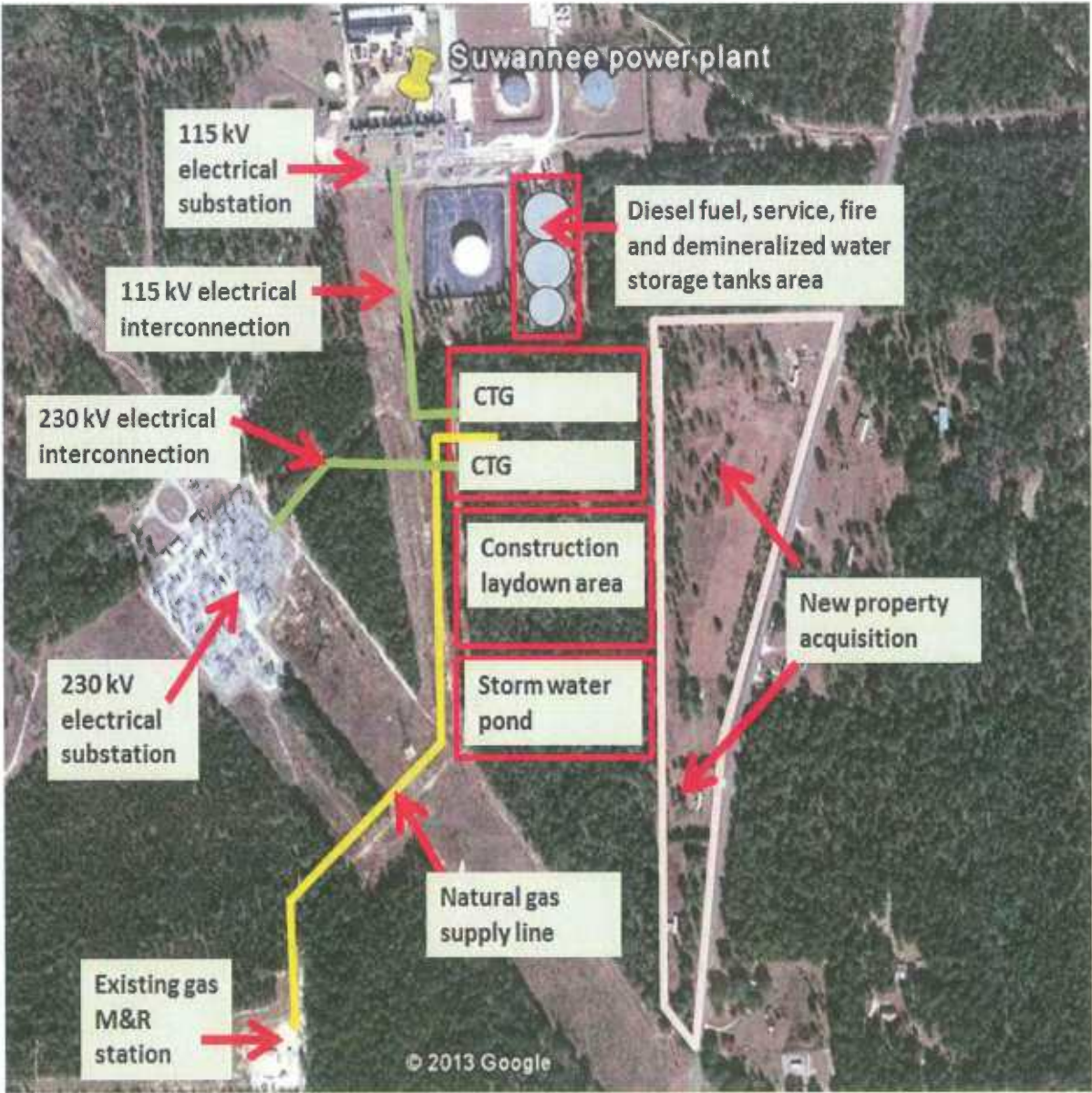
16 **Q. Does this conclude your testimony?**

17 A. Yes it does.

Map Showing Location of Suwannee Power Plant Site



Preliminary layout of the Suwannee Simple Cycle project



Itemization of the major cost items

Estimate Category	\$ Million
Major Equipment and Engineering, Procurement and Construction (EPC)	\$134
Owners Costs including Transmission and Contingency	\$43
Subtotal Project Estimate	\$177
AFUDC	\$18
Total Project Cost	\$195

REDACTED

Projected Schedule

Key Project Milestone	Date
BOD Approval	December 2014
FPSC Need Filing	January 2015
FPSC Need Approval	May 2015
Receive Air Permit	June 2015
Start EPC Contractor	
Start CTG and GSU Suppliers	
EPC Begin Construction	
CTG Site Delivery	
Mechanical Completion	
First Fire	
Commercial Operation	June 2017