

**BEFORE THE FLORIDA
PUBLIC SERVICE COMMISSION**

**DOCKET NO. 09 0172 EI
FLORIDA POWER & LIGHT COMPANY**

**IN RE: FLORIDA POWER & LIGHT COMPANY'S
PETITION TO DETERMINE NEED FOR
FLORIDA ENERGYSECURE LINE**

DIRECT TESTIMONY & EXHIBITS OF:

CLINTON M. COLLINS

DOCUMENT NO. DATE

03072-09 4/7/09
FPSC - COMMISSION CLERK

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION
FLORIDA POWER & LIGHT COMPANY
DIRECT TESTIMONY OF CLINTON M. COLLINS
DOCKET NO. 09 ____ -EI

Q. Please state your name and business address.

A. My name is Clinton M. Collins. My business address is FPL Group, Inc.,
1000 Louisiana Street, Houston, Texas 77002.

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

A. I am employed by FPL Group, Inc. as Director of Gas Infrastructure within
the Assets Group.

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

A. My primary responsibilities for Florida Power & Light Company ("FPL" or
the "Company") are to provide technical support and oversight with respect to
natural gas-related facilities or opportunities as they are identified and pursued
by FPL.

Q. Please describe your educational background and business experience.

A. In 1989, I earned a Bachelor of Science degree in Construction Science from
the University of Louisiana-Monroe. In 1998, I earned a Master of Business
Administration degree from Our Lady of the Lake University located in San
Antonio, Texas. Prior to joining FPL Group, Inc. in June 2008, I was either
directly or indirectly employed for approximately 23 years by Spectra Energy
(Spectra) and its predecessor gas-transmission companies.

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1 In 1990, I started my professional career working full time for Panhandle
2 Eastern Pipeline Company in Indianapolis, Indiana, where I supported various
3 field construction and development activities. In 1991, I advanced into the
4 Cost Management Group in Houston, gaining experience and expertise in
5 estimating and forecasting gas infrastructure projects. During this time, I
6 supervised, scheduled and provided technical support to numerous project
7 estimators in the preparation of capital expansion and maintenance projects.
8 In 1995, I transferred into the Environmental and Construction Group where,
9 as Manager of Construction, I oversaw all construction scheduling and
10 business management activities for the construction department on the
11 systems that were owned and managed by Duke Energy Gas Transmission
12 systems. These systems included: Panhandle Eastern Pipe Line, Trunkline
13 Gas, Texas Eastern Transmission, East Tennessee Natural Gas and Algonquin
14 Gas Transmission. In 1999, I was promoted into the Project Management
15 ranks to manage overall project development activities where I estimated and
16 developed numerous market expansion projects throughout the U.S. including
17 the Southeast Supply Header (SESH) project, which was an approximately
18 270-miles pipeline located in Louisiana, Mississippi and Alabama. During
19 this assignment, I advanced to the position of Regional Director for Spectra
20 Energy, where my primary responsibilities were to provide direction and
21 oversight to a team of project and construction managers responsible for
22 southern regional capital expansions and larger maintenance projects on
23 Spectra's Texas Eastern Transmission, East Tennessee Natural Gas and

1 Gulfstream Natural Gas (Gulfstream) pipeline systems. In this role, my
2 regional team developed and estimated numerous project expansion
3 opportunities ranging up to and in excess of \$3.0 billion.

4 **Q. Are you sponsoring any exhibits in this case?**

5 A. Yes. I will be sponsoring the following exhibits, which are attached to my
6 direct testimony:

- 7 • CMC-1 Map of Florida EnergySecure Line and Related
8 Facilities
- 9 • CMC-2 FPL Right-of-Way Corridor
- 10 • CMC-3 Summary of Costs

11 **Q. What is the purpose of your testimony?**

12 A. The purpose of my testimony is to provide an overview of the steps FPL will
13 undertake to construct and operate the Florida EnergySecure Line, including
14 associated facilities (the "Project"). The scope of my testimony will include:
15 (1) a technical description of the Project; (2) a description of the Project
16 engineering and construction as well as FPL's strong qualifications to
17 undertake the Project; (3) a description of the material acquisition process
18 typically encountered in a Project of this scope and magnitude; (4) a
19 description of FPL's commitment to safety and environmental stewardship
20 relating to the various construction techniques that will be employed during
21 the construction phase; (5) a description of the proposed operations and
22 maintenance of the Project; and (7) an estimate of the installed costs of the
23 Project.

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

2 A. This testimony describes in technical detail FPL's proposed \$1.588 billion
3 high-pressure natural gas transmission facility that will provide FPL's
4 customers and the state of Florida with additional pipeline capacity to meet
5 FPL's projected demand for natural gas supplies to fuel electric generation.
6 FPL proposes a 30-inch diameter, approximately 280-mile mainline pipeline
7 originating near Florida Gas Transmission, LLC's (FGT) Station No. 16 (FGT
8 Station 16) in Starke, Florida (Bradford County) to FPL's Martin Plant in
9 Martin County and approximately 23 miles of laterals ranging in diameter
10 from 20 to 24-inches to serve FPL's modernized Cape Canaveral Next
11 Generation Clean Energy Center (CCEC) and Riviera Beach Next Generation
12 Clean Energy Center (RBEC). FPL also plans to construct two compressor
13 stations, the Bradford Compressor Station and the 45th Street Terminal
14 Compressor Station and appurtenant facilities. FPL has established project
15 management skills, a highly-qualified staff and the necessary ancillary support
16 services and procedures to undertake projects of this scope and magnitude. In
17 acquiring materials and labor, FPL will manage the costs by employing a
18 competitive bidding process. FPL will comply with all regulatory, safety and
19 environmental requirements in choosing construction materials, in
20 constructing the pipeline and in operating the pipeline. The overall Project
21 construction should create little to no permanent impact to the route. Also,
22 upon completion of construction activities, all disturbed land areas will be
23 graded, seeded and returned to their original contours and natural states.

1 buried at roughly a four foot depth along the final corridor. The designed
2 maximum allowable operating pressure (MAOP) for the mainline will be 1480
3 pounds per square inch (PSIG), although it will operate at somewhat lower
4 pressures throughout the system depending on flow dynamics. The Mainline
5 will act as the feeder and will initially serve three FPL generation plants: the
6 CCEC, RBEC and the Martin Plant.

7
8 The Florida EnergySecure Line will serve the CCEC via a 24-inch coated-
9 steel lateral pipeline. This line will extend from the mainline approximately
10 17 miles to the northeast and will terminate within the boundaries of the
11 CCEC. FPL's Martin Plant will be served directly by the Florida
12 EnergySecure Line's 30-inch mainline, which will terminate within the
13 boundaries of the Martin Plant. The RBEC will be served by the Project via
14 the utilization of FPL's existing 18-inch oil/natural gas pipeline that currently
15 connects the Martin Plant with FPL's 45th Street Terminal in Palm Beach
16 County, and a new approximately 3-mile section of 20-inch pipe. By
17 employing the existing 18-inch oil/natural gas pipeline, FPL will avoid having
18 to construct approximately 36-miles of new pipeline through environmentally
19 sensitive areas in western Palm Beach County (see Exhibit CMC-1).
20 However, FPL's existing 18-inch oil/natural gas pipeline, which is fully
21 permitted, is not subject to this need proceeding.

1 The RBEC will receive the gas via a new 3-mile lateral segment of 20-inch
2 coated-steel pipeline, which will traverse due east from the 45th Street
3 Terminal to the RBEC along an existing FPL transmission and pipeline
4 corridor. This final stretch of pipeline from the 45th Street Terminal to FPL's
5 RBEC is included in this need determination.

6 **Q. Are there any other pipeline laterals required as a part of the Florida**
7 **EnergySecure Line?**

8 A. The Project also includes a new approximately 3-mile segment of 20-inch
9 pipeline lateral that will replace an existing FPL 6-inch pipeline, which
10 traverses northwest from FPL's 45th Street Terminal to an existing receipt
11 point from FGT. This 3-mile segment will be utilized to provide reliable
12 secondary service to the RBEC in those instances when fuel oil is being
13 transported from the 45th Street Terminal to the Martin Plant via the existing
14 18-inch oil/natural gas pipeline.

15 **Q. What other facilities are required as a part of the Florida EnergySecure**
16 **Line and where might they be located?**

17 A. The Project also includes two compressor stations. The Bradford Compressor
18 Station will be located near the origination of the Mainline in Bradford
19 County, near the point referred to as FGT Station 16. This compressor station
20 is needed to insure adequate pressure of the gas at the key delivery points
21 along the route.

1 The second compressor station will be located within the existing boundaries
2 of the 45th Street Terminal. This facility will provide natural gas service to
3 RBEC during those periods when the 18-inch oil/natural gas pipeline is being
4 utilized for oil transportation. In conjunction with this compressor station, an
5 additional segment of 20-inch pipe will be installed to connect this
6 compressor station to an existing FGT location approximately three miles
7 west of the 45th Street Terminal location, as illustrated in Exhibit CMC-1.
8 This compressor station and 3-mile, 20-inch pipe segment will be used solely
9 to boost receiving line pressures from FGT to provide adequate pressures and
10 volumes at the RBEC during those times when there is oil product being
11 moved through the existing 18-inch oil/natural gas pipeline.

12
13 The approximate location of the compressor sites, as they are currently
14 envisioned, would have the Bradford Compressor Station positioned to
15 connect with up to two third-party owned pipelines. As previously noted, the
16 other compressor station will be located within the boundaries of the 45th
17 Street Terminal. There are also a number of metering stations, valve stations
18 and PIG launchers and receivers that will be located along the length of the
19 Mainline and laterals to regulate and operate the system in a safe manner.

1 **Q. What are PIG launchers and receivers?**

2 A. PIG launchers and receivers are used to ensure the cleanliness of the pipeline,
3 over its many years of operation, and to allow for periodic monitoring of the
4 integrity of the pipeline. These facilities will be designed to allow for various
5 types of PIGs to be placed periodically into the pipeline for cleaning and
6 monitoring purposes. PIGs are most often propelled thru the pipeline by the
7 pressure of the natural gas without interrupting pipeline service.

8 **Q. What is the purpose of the compressor stations?**

9 A. Compressor stations are an integral part of all pipelines. The gas is
10 compressed by these stations to allow the natural gas to flow through the pipe,
11 similar to the way a pump is used to push water or other liquids through a
12 pipe. These compressors are typically located within enclosed buildings,
13 which are designed to protect the equipment from the elements as well as
14 minimize any resulting noise from the operation of the units. For the most
15 part, these stations are minimally manned by operators and are monitored
16 remotely to insure proper operation and control of all significant equipment
17 and to secure the area surrounding the compressor stations.

18 **Q. Please describe the compressor stations for the Florida EnergySecure**
19 **Line in more detail.**

20 A. The Bradford Compressor Station is currently planned to consist of
21 approximately 20,000 horsepower (HP) utilizing two turbines. Delivery
22 pressures from the upstream gas supply line will determine the actual number

1 and size of units that will be required to insure adequate downstream pressures
2 at the designated receiving locations.

3
4 The 45th Street Terminal compressor station is currently planned to consist of
5 approximately 4,700 HP utilizing two reciprocating units designed to provide
6 backup compression only when the existing 18-inch lateral between the
7 Martin Plant and the 45th Street Terminal is needed to transport fuel oil
8 supplies from the Port of Palm Beach/45th Street Terminal to FPL's Martin
9 Plant. The 45th Street Terminal compressor station will be used solely to
10 boost receiving line pressures during these short periods of product
11 movement.

12

13 **ENGINEERING AND CONSTRUCTION**

14

15 **Q. Please discuss the type of pipe that will be utilized to construct the**
16 **Florida EnergySecure Line.**

17 A. The Florida EnergySecure Line will be constructed of high-strength carbon
18 steel, manufactured in accordance with U.S. Department of Transportation
19 (DOT) pipeline regulations. The entire pipeline will have a corrosion-
20 resistant, non-conductive coating that forms a waterproof skin over the pipe.
21 Prior to backfilling the trench, the coating on the entire pipe will be
22 electronically tested to ensure there are no anomalies in the coating. Where
23 pipe is located beneath roads, railroads and major water bodies, an abrasion

1 resistance coating will be applied to prevent damage to the pipe when it is
2 pulled beneath these obstacles.

3 **Q. What will be the visual impact of the Florida EnergySecure Line once the**
4 **pipeline is constructed?**

5 A. There will be minimal visual evidence of the Project. Though not
6 anticipated, should the Florida EnergySecure Line cross a natural physical
7 obstruction that cannot be crossed utilizing a proven underground crossing
8 method, the installation of an over-ground support system along the corridor
9 may be deemed necessary.

10 **Q. What is the projected schedule and commercial operation date for the**
11 **Florida EnergySecure Line?**

12 A. The current Project schedule has been developed based on the Florida
13 EnergySecure Line being available for commercial operation in January 2014.

14 At a very high level, the anticipated Project schedule would be:

- 15
- 16 • File NGPSA Application - third quarter of 2009;
 - 17 • Receive Site Certification Final Order from Siting Board - second
18 quarter of 2011;
 - 19 • Receive post-certification approvals - third quarter of 2012;
 - 20 • Commence field construction activities - fourth quarter of 2012;
 - 21 • Commence commissioning activities – fourth quarter of 2013;
 - 22 • Place the facilities in commercial service – first quarter of 2014.

1 This schedule allows for the majority of direct field construction of the Florida
2 EnergySecure Line and its related laterals and facilities to be performed
3 during Florida's dry season, which will significantly minimize the temporary
4 environmental impacts associated with the Project and avoid potential
5 schedule delays and cost impacts due to inclement weather, including
6 hurricanes.

7 **Q. What is the expected construction duration necessary to complete the**
8 **Florida EnergySecure Line?**

9 A. The actual construction period is expected to take approximately one year
10 from the time of initial mobilization through final commissioning and
11 cleanup. To timely and effectively execute the construction of the Project, it
12 will be subdivided into smaller segments or "spreads" for which construction
13 would proceed concurrently. By optimizing the number of "spreads," FPL
14 believes all construction can be completed within a 12 month period. FPL
15 would also expect to have the compressor stations and individual plant laterals
16 constructed during the same time period.

17 **Q. What other associated impacts could be expected from construction of the**
18 **Florida EnergySecure Line?**

19 A. Construction of the Florida EnergySecure Line requires a significant volume
20 of pipe, valves and construction equipment to be temporarily stored prior to
21 installation. FPL will identify temporary storage yards where pipe and
22 equipment can be stored and staged near the right-of-way (ROW) prior to the
23 construction activities commencing. These temporary areas will be sited to

1 minimize traffic, environmental impacts and to facilitate the most efficient
2 means of staging support materials and manpower involved in the
3 construction of the pipeline. Once construction is completed, these areas will
4 be restored to their original condition or to the recommendations of the
5 landowner.

6 **Q. Can you explain some of the typical terrain that the Florida**
7 **EnergySecure Line will encounter?**

8 A. Yes. There are four primary types of terrain or land use that would typically
9 be encountered during pipeline construction: (1) upland areas, (2) wetland
10 areas, (3) timber or forested areas and (4) residential or congested areas, all of
11 which are described in more detail below.

12

13 **Upland Areas:**

14 Upland Areas are most often identified as either actively cultivated or rotated
15 cropland, pasture land for livestock, hayfields, or rural residential areas.
16 These areas are normally dry and are typically the easiest areas to construct
17 within.

18

19 **Wetland Areas:**

20 Wetland Areas are defined by DEP as those areas that are inundated or
21 saturated by surface water or ground water at a frequency and duration
22 sufficient to support a prevalence of vegetation typically adapted to life in
23 saturated soils. Additional construction practices are often required in these

1 areas to both protect the wetland during and after construction as well as allow
2 for the safe and efficient movement of manpower and equipment during
3 construction.

4

5 **Timber or Forested Areas:**

6 Timber or Forested Areas are lands with moderate to heavy timber vegetation
7 and can be either public or private, but are often managed by large landowners
8 or land management companies. These lands are typically utilized for
9 harvestable timber and will require small areas of timber to be removed to
10 allow for construction.

11

12 **Residential or Congested Areas:**

13 Residential or Congested Areas are metropolitan areas and often require
14 significantly more complex construction techniques to address logistical
15 challenges associated with impacts to streets, businesses, residences and
16 municipal services. Often these areas require the employment of a greater
17 degree of horizontal drilling, boring and other unique construction techniques
18 to create a safe work environment and minimize or avoid impacts to existing
19 surface and subsurface conditions.

1 **Q. With the proposed Project corridor, how will each of these terrains or**
2 **land uses be addressed?**

3 A. The pipeline corridor siting process, which is part of the NGPSA and overseen
4 by the Florida DEP, is designed to affect a reasonable balance between the
5 need for a pipeline and its environmental impacts. To meet this balance and
6 to insure the least amount of overall impact, FPL proposes to co-locate the
7 1/3 mile-wide mainline corridor within the existing FPL transmission ROW or
8 adjacent to other linear facilities to the maximum extent practical to safely
9 construct the pipeline. By co-locating the pipeline it will insure the least
10 amount of overall impact. FPL focused on ensuring safety and ease of
11 maintenance while also focusing on reducing the overall impacts to wetlands,
12 timber or forested lands, public lands and residential areas. Co-location with
13 FPL's existing transmission ROW will have the added advantage of locating
14 the Mainline in or within 1/3 mile of an existing ROW, where timbering and
15 residential and commercial development has already been restricted.
16 Utilization of existing easements to the maximum extent practicable will
17 greatly reduce the overall impacts to wetlands, timber or forested lands and
18 residential areas.

19
20 In locations where the pipeline can be located within the transmission ROW,
21 the existing easement may not be adequate to support the overall workspace
22 needed for expected pipeline construction activities. In these areas, there will
23 be a need to acquire temporary construction easements along the ROW.

1 Exhibit CMC-2 illustrates a typical temporary construction workspace that
2 may be needed in these areas.

3
4 FPL is currently seeking public and regulatory input on the proposed corridor,
5 which is subject to change based on public input and the NGPSA application
6 review process.

7 **Q. What will be the short-term and long-term impact of these construction**
8 **activities on the environment?**

9 A During the development of the Project, environmental consultants will review
10 the entire pipeline corridor to identify environmentally sensitive areas as well
11 as those areas that have historic or cultural significance. As part of the
12 development of the Project through the NGPSA Siting Process, and other
13 applicable permitting processes, FPL will work with federal, state, local and
14 other interested stakeholders in an effort to avoid and/or minimize impacts
15 that would be associated with the Project. FPL will mitigate for any
16 unavoidable impacts and will meet or exceed all applicable environmental
17 regulations during construction.

18
19 The construction of the Florida EnergySecure Line will involve about 3,500
20 direct workers, nearly 140,000 tons of steel pipe, and various pieces of mobile
21 construction equipment. Every step will be guided by FPL professionals and
22 industry consultants with years of experience in building natural gas pipelines
23 that meet the highest industry and government standards for safety,

1 environmental protection and operational reliability. Great effort will be
2 taken to minimize disruption to landowners during the construction process.
3 In addition, FPL and its consultants will carefully plan every step of the
4 Project and use multiple construction crews to install the pipeline and restore
5 areas temporarily impacted by construction to their previous use as quickly
6 and efficiently as practical.

7
8 The overall Project construction should create little to no permanent impact to
9 the area. Upon completion of construction activities, all disturbed land areas
10 will be graded, seeded (as appropriate) and returned as close as possible to
11 their original contours and natural states. All restoration efforts will be in
12 compliance with applicable federal, state and local requirements. FPL will
13 remain available to respond to agency, stakeholder and landowner questions
14 and concerns throughout restoration and ongoing operations.

15 **Q. Why do you believe FPL can undertake such a Project of this magnitude?**

16 A. Although FPL has never built a natural gas pipeline of this size, FPL has built
17 a number of transmission and piping systems with much more complex
18 operating and engineering conditions than the proposed Project. As
19 previously noted, much of the pipeline that will be employed throughout Palm
20 Beach County is an existing pipeline that FPL built from the Port of Palm
21 Beach to the Martin Plant in 1979. FPL built this pipeline along a 36-mile
22 route within an existing transmission corridor and an existing railroad

1 easement. This terrain is very similar to the terrain that will be encountered
2 during construction of the Florida EnergySecure Line.

3
4 FPL also has demonstrated its ability to engineer and construct numerous
5 electric transmission corridors and power plants throughout Florida. In many
6 respects, a gas pipeline construction project is very similar to a transmission
7 line construction project. Very similar land and permitting issues are
8 encountered. Large volumes of materials, such as steel, poles, wire and cable,
9 must be stored along the corridor to facilitate construction. Many of the same
10 construction techniques required to support pipeline construction are required
11 to support construction of a transmission corridor. These construction
12 projects are literally moving assembly lines.

13

14 MATERIAL ACQUISITION AND LABOR

15

16 **Q. Based on the magnitude of the Florida EnergySecure Line, is material**
17 **acquisition a concern?**

18 **A.** Material acquisition is always a concern and represents one of the largest cost
19 risks associated with a pipeline Project of this magnitude. However, FPL will
20 effectively manage this risk by employing a competitive bidding process,
21 insuring the use of materials which are commonly available for projects of this
22 scope and securing materials well in advance of the expected date the
23 materials will be required to support construction. FPL has been successful at

1 cost-effectively purchasing large quantities of construction materials, as
2 demonstrated by many of the projects it has undertaken.

3
4 Prevailing market conditions at the time the Project is bid will dictate the most
5 preferred approach. Since steel is a commodity, there are strategies which can
6 be employed to avoid substantial material risks associated with the cyclical
7 market swings that are typical in the steel and pipe conversion business.

8 **Q. Based on the magnitude of the Florida EnergySecure Line, is contracting**
9 **for construction services, labor and equipment a concern?**

10 A. The most significant cost component of a pipeline project is the construction
11 process and contracting for labor and equipment. To timely and effectively
12 execute, the overall Project will be broken into segments known as "spreads,"
13 each of which is constructed concurrently. A gas pipeline of this scope is
14 typically broken into three or four spreads and then each spread is
15 competitively bid to ensure the best pricing. Each spread operates like a
16 moving assembly line, with each component of construction occurring in
17 systematic sequence for maximum efficiency and execution.

18
19 There are currently a number of companies that own equipment and have the
20 employee relationships necessary to support the construction of this Project.
21 By employing a competitive bidding process, insuring contractor availability
22 and securing these critical resources well in advance of the expected date of
23 construction, FPL will effectively manage this risk. Contractors are typically

1 secured and contracts executed with substantial lead times to support a Project
2 of this magnitude. Prevailing market conditions at the time the Project is bid
3 will dictate the most effective approach to contractor selection and execution.
4 FPL has a very successful and demonstrated ability to cost-effectively secure
5 and manage contractors on the projects it has undertaken.

6 **Q. Has FPL considered contracting with a pipeline construction**
7 **management company to support the development of this Project?**

8 A. Yes. Engaging a pipeline construction management company to provide turn-
9 key engineering and construction of the Project is an option. However, as I
10 have discussed previously, the skills necessary to oversee and effectively
11 manage the scope of a Project of this magnitude are entirely within the range
12 and technical competence of the current FPL staff and the staff of its sister
13 companies. FPL's commitment to bringing value to its customers and
14 protecting the environment is strong. In addition, FPL is among the industry
15 leaders when it comes to safety during construction and throughout continuing
16 operations.

17

18 **SAFETY, CONSTRUCTION AND OPERATION**

19

20 **Q. What will FPL do to ensure safety during construction and operation of**
21 **the Florida EnergySecure Line?**

22 A. FPL is very focused on safety in all aspects of our business, whether it is
23 building a new power generating plant, new electrical transmission line, or

1 pipeline, the safety practices, procedures and protocols are very similar.
2 Workers are trained in all aspects of safe working procedures, as they apply to
3 their particular responsibility before ever undertaking a project.

4
5 The Florida EnergySecure Line will be designed, constructed, tested, operated
6 and maintained in accordance with the requirements of federal pipeline safety
7 regulations, and will meet or exceed stringent industry standards. Examples
8 of these safety measures include the following:

- 9
- 10 • Even before actual construction begins, at steel rolling mills where
11 pipe is fabricated, our representatives will carefully inspect the pipe to
12 ensure that it is of high quality and meets both federal and industry
13 standards.
 - 14
 - 15 • Coating systems and other corrosion control techniques will be used to
16 prevent corrosion of the pipeline.
 - 17
 - 18 • During construction, our representatives will inspect the fabrication
19 and construction of the pipeline. Welds linking the joints of the
20 pipeline are X-rayed to ensure their integrity.

21

- 1 • Once in the ground, and before being placed into service, the pipeline
2 will be pressure-tested with water in excess of its maximum operating
3 pressure, exceeding standards set by the DOT.
4
- 5 • Pipeline markers will be placed to alert the public of our pipeline's
6 presence, identify pipeline rights of way and provide a telephone
7 number to be used to contact us in an emergency.
8
- 9 • To help protect against third-party damage, regular inspections by
10 motor vehicles and patrol aircraft will keep a watchful eye on pipeline
11 routes and adjacent areas.
12
- 13 • Our maintenance crews will perform facility inspections at regular
14 intervals to identify any construction in the vicinity of the pipeline and
15 to maintain the pipelines and their rights-of-way.
16
- 17 • Pipelines undergo periodic maintenance inspections, including leak
18 surveys, valve and safety device inspections and electronic inspections
19 using in-line inspection devices known as smart PIGs to confirm the
20 continuing integrity of the line.
21

- 1 • Our representatives will meet with local emergency response officials
2 on pipeline operations and coordinate emergency response procedures
3 in the unlikely event of an emergency
4
5 • The presence of the pipeline will clearly marked with signs in order to
6 reduce the possibility of damage or interference form outside parties.
7 To further reduce this possibility, the pipeline will participate in the
8 “One Call” system, which offers a toll-free number that should be
9 called before digging.
10 • FPL will also be continuously monitoring pressures and operating
11 conditions along the pipeline to identify potential deviations from
12 normal conditions and to allow for timely adjustment and response.

13 **Q. Are you familiar with Chapter 368, Florida Statutes, Chapter 25-12,**
14 **Florida Administrative Code, the Federal rules and regulations in 40**
15 **C.F.R. Parts 190 through 199, and codes and standards incorporated**
16 **therein?**

17 **A.** Yes. These regulations cover the design, fabrication, installation, inspection,
18 testing and safety standards for installation, operation and maintenance of gas
19 transmission and distribution systems, including gas pipelines, gas compressor
20 stations, gas metering and regulating stations.

1 **Q. Will the engineering, construction, and operation of the Project comply**
2 **with these requirements?**

3 A. Yes. I will briefly describe some of the key requirements and how FPL will
4 comply them.

5
6 First, FPL will comply with the inspection and testing of all welded members
7 in accordance with and required by the Florida Administrative Code and the
8 Federal requirements of 49 CFR Part 192. Where appropriate, welds will be
9 inspected using approved non-destructive radiographic and ultrasonic means
10 and all welders qualified in accordance with applicable state and federal
11 requirements. Appropriate records will be maintained to insure compliance
12 with these requirements.

13
14 Second, as noted above, all piping will undergo appropriate pressure testing as
15 required by the service conditions surrounding the area, and in accordance
16 with 49 CFR Part 192 to validate the integrity of the facilities prior to being
17 placed into gas service.

18
19 Third, as noted above, once the pipeline is placed into service, operational
20 procedures will be implemented to allow for periodic and timely inspection of
21 the pipeline to monitor its condition using a smart PIG, a device that can
22 travel within the pipe and monitor wall thickness and various other parameters
23 to insure the overall integrity of the pipeline over its lifetime.

1

2 Fourth, all valves will be inspected in accordance with the class of service and
3 the operating plan, which will be developed in accordance with 49 CFR Part
4 192 and the Florida Statutes.

5

6 Finally, a cathodic protection system will be designed, installed and operated
7 in accordance with the appropriate Federal requirements of 49 CFR Part 192.
8 Cathodic protection is a system designed to mitigate the potential for
9 corrosion of the pipeline in all environments. The system will be designed,
10 installed, monitored and inspected in accordance with applicable design
11 standards included in 49 CFR Part 192.

12 **Q. In general, what has been the history of reliability and safety for natural**
13 **gas pipelines?**

14 A. Natural gas pipelines have been safely and reliably supplying the energy
15 needs of the U.S. for the past seventy years. Currently there are hundreds of
16 thousands of miles of active natural gas transmission pipelines in the country,
17 providing a critical link from the production basins to industrial, commercial
18 and residential markets. These natural gas pipeline systems have an extremely
19 good record of safety and reliability and today represent one of the safest
20 modes of moving products throughout the U.S. Given the critical role that
21 natural gas plays to Florida and the country, it is essential that these systems
22 be safe and reliable. According to the DOT, pipelines are the safest method of
23 transporting natural gas.

1 **Q. What procedures does FPL plan to employ to maintain the Florida**
2 **EnergySecure Line?**

3 A. FPL currently maintains an Integrity Management Program which insures its
4 existing pipeline laterals and other facilities are maintained in accordance with
5 Chapter 25-12 of the Florida Administrative Code and 49 CFR Part 192
6 Subpart O, "Pipeline Safety: Pipeline Integrity Management in High
7 Consequence Areas (Gas Transmission Pipelines)." Under these requirements
8 FPL conducts routine maintenance and monitoring of all existing oil and gas
9 pipelines within its system. These existing practices and procedures will be
10 amended to include the scope of the Florida EnergySecure Line and would be
11 applied either internally or to any third-party operator.

12

13

**INSTALLED COSTS OF THE
FLORIDA ENERGYSECURE LINE**

14

15

16 **Q. What is the cost estimate for the Florida EnergySecure Line?**

17 A. The current expected installed cost for the Florida EnergySecure Line is
18 \$1.588 billion. As shown in Exhibit CMC-3, this figure includes all costs for
19 land acquisition, pipe materials, valving, metering stations, current
20 compressor stations, development, construction labor and equipment, project
21 management, start-up and AFUDC for the Project. The costs include \$1.05
22 billion in direct material and installation costs, \$325 million in indirect costs
23 associated with development and start-up of the Project, \$100 million in

1 anticipated land costs, and \$113 million for AFUDC. Land costs are
2 estimated based on the assumption that 90 percent of the pipeline corridor will
3 be co-located with existing FPL utility transmission easements. As discussed
4 previously, it is FPL's intent to co-locate as much of the mainline and laterals
5 along existing electrical transmission corridors whenever practicable to
6 minimize land costs and environmental impacts associated with a new,
7 undeveloped corridor. However, the proposed pipeline corridor is subject to
8 change through the regulatory siting process.

9 **Q. How did FPL develop these estimates?**

10 A. FPL contracted a major pipeline engineering consultant to prepare a
11 preliminary scope and project estimate. FPL reviewed these preliminary
12 project estimates and modified them to reflect the final project scope, FPL's
13 own construction experience, along with current and future market conditions
14 anticipated in Florida. While the estimates were prepared during a period of
15 highly volatile commodity fluctuations, steel pricing was benchmarked to
16 reflect pricing consistent with other project opportunities that were evaluated.

17 **Q. Can the Florida EnergySecure Line be expanded at a later date?**

18 A. Yes. As described in more detail by FPL witness Sharra, a 30-inch pipeline
19 has the ultimate capacity to transport approximately 1.25 Bcf/d at the
20 maximum allowed design pressure. While the initial capacity will be 600
21 MMcf/d, the pipeline can be expanded at a later time. For the purposes of
22 FPL's evaluation, 200 MMcf/d increments were evaluated to correlate with
23 the expected load growth currently anticipated. Each incremental expansion

1 would require only the compression necessary to flow an additional 200
2 MMcf/d, plus interconnection costs at a new location.

3 **Q. What are the estimated costs associated with expansion of the Florida**
4 **EnergySecure Line?**

5 A. The costs of expansion are contingent on the specifics of the additional
6 compression, including year of installation and related costs, the final location
7 of the laterals and intersection with the mainline, the length of the laterals, and
8 the final pressure needed at the receiving location. At this time, we estimate
9 expansion costs varying between \$125 million to approximately \$200 million
10 for each incremental upgrade. Thus, a 200 MMcf/d expansion would
11 represent a 33 percent increase in capacity (600 MMcf/d to 800 MMcf/d) for
12 an increase in capital of only about eight percent

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

14 A. Yes.

Natural gas receipt point near FGT Station 16
 & proposed Bradford Compressor Station

CCEC

Proposed Lateral

FPL Martin Plant

Existing FPL Gas/Oil line

Proposed Lateral

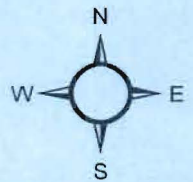
RBEC

Proposed compressor station - 45th St. Term.

Map of Florida EnergySecure Line
 Proposed Corridor

- Florida EnergySecure Line - Proposed Mainline
- Florida EnergySecure Line - Proposed Laterals
- FPL's Existing Gas/Oil Line from Martin Plant to 45th Street Terminal (6)

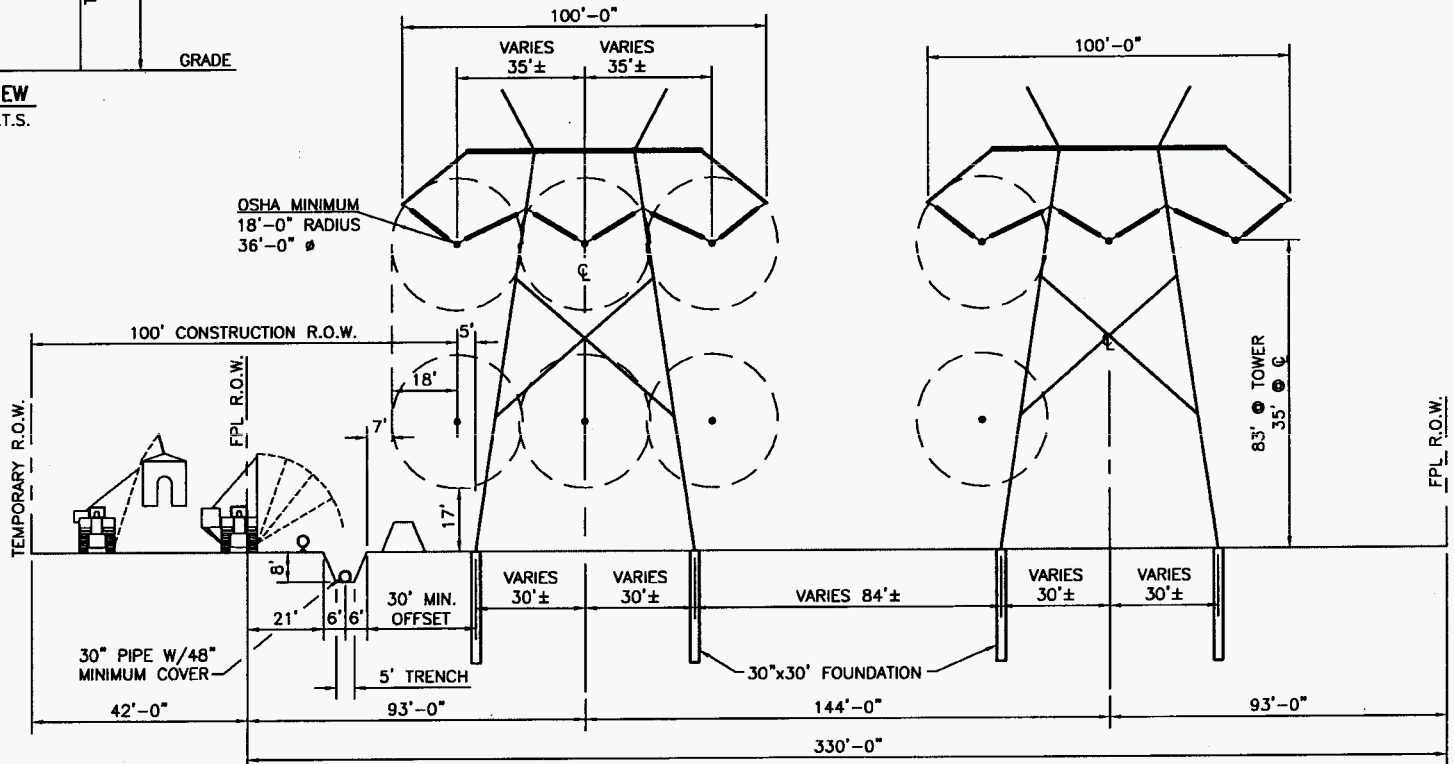
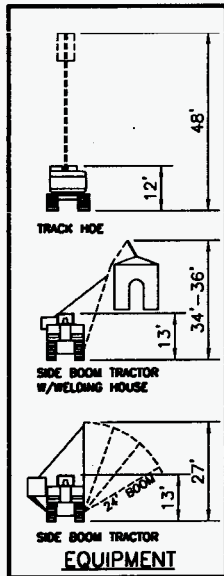
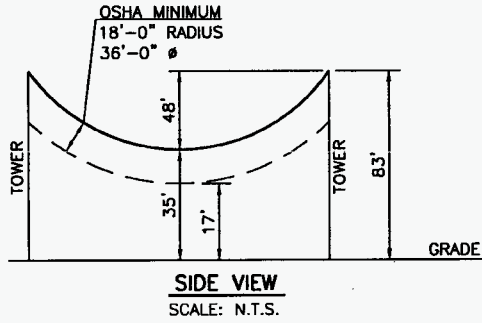
Notes:
 1. CCEC: FPL's Cape Canaveral Next Generation Clean Energy Center
 2. RBEC: FPL's Riviera Beach Next Generation Clean Energy Center
 3. The proposed corridor of the Florida EnergySecure Line is subject to change through the regulatory siting process.
 4. The Project will include other minor affiliated facilities such as metering stations and gas heaters at locations to be determined.
 5. Initially, two compressor stations - one in Bradford County near FGT Station 16 and one at FPL's 45th Street Terminal - will be placed into service with the Florida EnergySecure Line in January 2014. Additional compression will be added at locations to be determined as additional transportation capacity is needed.
 6. FPL's Existing 18-inch Gas/Oil Line from the Martin Plant to the 45th Street Terminal is not a part of this need proceeding.



1 inch equals 50 miles
 Miles



Typical Temporary Workspace for Pipeline Construction



**TYPICAL FOR PIPELINE
LOCATION OUTSIDE OF TOWERS**

Summary of Florida EnergySecure Line Projected Costs

Cost Breakdown	Costs (\$millions)
Direct	\$1,050
Indirect	\$325
Land Costs	\$100
AFUDC	\$113
Total	\$1,588