

ORIGINAL

BEFORE THE FLORIDA
PUBLIC SERVICE COMMISSION

DOCKET NO. 070098-EI
FLORIDA POWER & LIGHT COMPANY

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IN RE: FLORIDA POWER & LIGHT COMPANY'S
PETITION TO DETERMINE NEED FOR
FPL GLADES POWER PARK UNITS 1 AND 2
ELECTRICAL POWER PLANT

DIRECT TESTIMONY & EXHIBIT OF:

ARMANDO J. OLIVERA

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5 **JANUARY 29, 2007**

6

7 **Q. Please state your name and business address.**

8 A. My name is Armando J. Olivera. My business address is Florida Power & Light
9 Company, 700 Universe Boulevard, Juno Beach, Florida 33408.

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

11 A. I am employed by Florida Power & Light Company (FPL or the Company) as
12 President.

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

14 A. I have overall responsibility for the operations of the Company.

15 **Q. Please describe your educational background and professional experience.**

16 A. I have a Bachelor of Science degree in electrical engineering from Cornell
17 University and a Master of Business Administration from the University of
18 Miami. I am also a graduate of the Professional Management Development
19 program of the Harvard Business School. I was named President of FPL in 2003.
20 My professional background is described in more detail in Document No. AJO-1.

21 **Q. Are you sponsoring an exhibit in this case?**

22 A. Yes. I am sponsoring an exhibit consisting of one document, AJO-1, which is
23 attached to my direct testimony.

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

2 A. FPL is requesting Commission approval to construct two solid fuel coal-fired
3 generating units each having summer net capacities of approximately 980 MWs
4 for a combined net capacity of 1,960 MWs. If approved, FPL Glades Power Park
5 (“FGPP”) will provide the best, most cost-effective alternative for maintaining
6 fuel diversity within FPL’s generation portfolio, providing greater system
7 reliability, mitigating the effect of volatility in natural gas prices, and taking a
8 positive step toward achieving greater U.S. energy independence from reliance on
9 middle east fuel sources. FGPP will be constructed on a 4,900-acre site located in
10 unincorporated Glades County. The site is located west of Lake Okeechobee,
11 approximately four miles northeast of the town of Moore Haven in an
12 unincorporated area of Glades County.

13
14 My testimony provides an overview of FPL’s request, describing some of the
15 significant challenges we face in meeting the growing demand for electricity in
16 the state of Florida, addressing the need for system fuel diversity, discussing the
17 economic uncertainties associated with this project compared to projects in
18 previous need determination proceedings, and explaining how such uncertainties
19 and other unique circumstances should affect the selection of the best resource
20 option and the Commission’s approach to this proceeding. Also in light of these
21 issues, and the magnitude of the financial commitment this project will require of
22 FPL and its customers, I summarize some of the specific findings and
23 determinations that FPL is asking the Commission to make in connection with the

1 determination of need, prior to FPL undertaking the project. Such determinations
2 include the institution of an annual review of the projected and actual costs to
3 enable the Commission annually to determine the prudence of actual costs and the
4 feasibility of continuing the project.

5 **Q. Have any governmental policy makers in the state recognized the need to**
6 **encourage fuel diversity?**

7 A. Yes. Various actions have been taken recently at the state government level to
8 endorse and encourage the development of a more diverse mix of fuel sources and
9 technologies to be used in Florida's energy future.

- 10 • Florida's Energy Plan, issued on January 17, 2006, addresses the importance
11 of fuel diversity and avoiding a reliance on any one fuel type such as natural
12 gas.
- 13 • The Florida Legislature recently highlighted the importance of fuel diversity
14 in House Bill 888, which was signed into law on June 18, 2006. While this
15 Commission has always taken fuel diversity into account in approving new
16 generation in the state of Florida, the bill amended Section 403.519, Florida
17 Statutes, and now requires this Commission to explicitly consider "the need
18 for fuel diversity and supply reliability" when making its determination of
19 need for new electricity generating capacity.
- 20 • This Commission on August 29, 2006 moved to speed FPL's fuel diversity
21 efforts when it granted the company an exemption from a process that allows
22 parties to bid to provide the additional power we need. In its news release that
23 day explaining its decision, this Commission specifically cited FPL's efforts

1 to construct a coal-fired power plant, stating that “a diversified fuel portfolio
2 insulates ratepayers from high-cost fuels and enhances long-term stability of
3 Florida’s economy.”

4 **Q. Please describe the challenges FPL faces in planning for and constructing**
5 **new generation in the state of Florida.**

6 A. Florida, one of the most populated states in the nation, also continues to be one of
7 the fastest growing. Over the past decade, FPL added an average of about 85,000
8 new customers each year. FPL is projecting an annual average increase of more
9 than 88,000 new customers for the next ten years. In addition, electric usage per
10 FPL customer has increased by approximately 30 percent over the past 20 years.
11 As FPL witness Dr. Green explains in his testimony, FPL also projects continued
12 significant growth in energy usage per customer over the next decade. Despite
13 administering one of the most successful energy conservation programs in the
14 country, and a focus on developing renewable energy, this growth in demand for
15 electricity has necessitated and will continue to necessitate that, on average, FPL
16 build one large (i.e., 650 megawatt) power plant, or purchase an equivalent
17 amount every year, along with constructing the transmission and distribution
18 infrastructure needed to deliver the power to customers. This effort requires a
19 massive commitment of financial and other resources. Indeed, to meet the
20 additional demand for electricity, FPL’s capital expenditures are expected to
21 average about \$2 billion annually over the next four years.

1 Siting electric infrastructure also is a continuing challenge. Very early on in our
2 planning and siting process the Company makes considerable effort to listen to
3 the concerns of members of the community regarding the location of electric
4 infrastructure. It is not uncommon for us to hear that people do not want power
5 plants, poles or lines near where they live, work or play. Overcoming these
6 challenges is very difficult, especially in such a high growth environment as
7 Florida, with development occurring throughout much of the state and with fewer
8 and fewer sites and corridors from which to serve that growth.

9
10 Similarly, many people continue to have concerns about the impact of power
11 plant emissions, despite the fact that FPL has invested billions of dollars in clean
12 sources of energy such as natural gas and in power plant emissions control
13 equipment, and has emissions rates of CO₂, NO_x and SO₂ that are among the
14 lowest in the electric utility industry.

15
16 Florida, of course, has no natural fossil fuel resources for the production of
17 electricity, which further exacerbates the challenges described above, because it
18 necessitates the development or expansion of fuel delivery systems into the state.

19
20 I know of no utility in the country that must plan for the rate and scale of growth
21 we have in Florida under such challenging circumstances.

22 **Q. How have these factors affected FPL's fuel mix?**

23 A. As indicated in Mr. Silva's testimony, in 2005 FPL's fuel mix was as follows:

- 1 Natural gas (42%)
- 2 Nuclear (19%)
- 3 Coal (18%)
- 4 Fuel oil (17%)
- 5 Other sources (about 4%).

6 However, if only natural gas-fueled generation were added to FPL’s system in the
7 future, by 2016 the proportion of natural gas-fired produced electricity would
8 increase to about 71% of total electricity delivered to FPL’s customers, while the
9 contribution of coal would decrease to 7%.

10

11 Nuclear power, a safe, emissions-free source of electric power with low operating
12 costs, has been an important part of our company’s fuel mix, today accounting for
13 about one-fifth of the power FPL generates. Nuclear power, however, presents its
14 own set of challenges, as a result of which no new order for a nuclear power plant
15 in the United States (“U.S.”) has been placed for almost 30 years, and no new
16 nuclear plant in the U.S. has received an operating license from the NRC in the
17 past 11 years.

18

19 For many years now, natural gas has been the fuel of choice for both peak and
20 new base load power generation projects in the U.S. The fuel itself is clean and
21 has been readily available; the power generation technology is well understood,
22 proven reliable and thermodynamically efficient; and the typical combined cycle
23 plant has relatively short development and construction times, allowing for

1 flexibility in planning and the ability to meet changing demand forecasts. Thus,
2 for many years, highly efficient natural gas-fired combined cycle plants have
3 dominated all others in economic comparisons. As Mr. Silva indicates, choosing
4 a new generation project from among such gas-fired units, at least in terms of
5 comparing self-build options, has largely come down to choosing which plant site
6 offers the best system-integrated economics, taking into account technical and
7 economic considerations such as transmission issues and line losses. FPL has
8 taken full advantage of these favorable characteristics and has added
9 approximately 5,700 megawatts of clean, efficient natural gas-fired capacity in the
10 last seven years. With the completion of West County 1 and 2, approximately
11 64% of our fuel will be natural gas.

12 **Q. Please discuss the need for and advantage of fuel diversity.**

13 A. An investment in greater fuel diversity helps mitigate the effects of delivery
14 disruptions or price spikes of any one fuel. The use of a more varied array of fuel
15 sources thus enhances the reliability and reduces the cost volatility of electric
16 power. FPL witnesses will testify that:

- 17 • If FPL were limited to adding natural gas-fired generation exclusively in the
18 future, about 71% of the electricity delivered to FPL customers in 2016 would
19 be generated using natural gas.
- 20 • The existing natural gas pipeline infrastructure into peninsular Florida is
21 comprised of two pipelines from the Gulf Coast region. While this
22 infrastructure has provided a high level of reliability over the years, the
23 demands on both pipelines have continued to grow. In fact, by mid-2009,

1 these pipelines will be fully subscribed. Therefore, the addition of
2 incremental natural gas-fired generation will require an expansion of one or
3 both pipelines and/or a new interstate pipeline into Florida.

4 • Expansion of the existing pipelines to meet additional demand will not help
5 reduce the vulnerability to production curtailments due to natural disasters
6 such as hurricanes.

7 • As more natural gas-fueled generation is added, the need to consider
8 alternatives to maintain reliability will become imperative. These alternatives
9 could include the addition of a new interstate pipeline, additional underground
10 natural gas storage, on-site LNG storage facilities, and identifying alternate
11 supply sources, including access to new producing regions as well as the
12 addition of LNG. Currently, LNG supply accounts for approximately 2.7% of
13 the total U.S. natural gas supply. By 2020, as demand for natural gas grows, it
14 is projected that LNG will account for approximately 20% of the total U.S.
15 natural gas supply. However, it is important to note that to the extent LNG
16 supply imported from the oil producing regions of the middle east becomes a
17 greater percentage of total U.S. natural gas supply in the future, the risks
18 associated with foreign supply fuel sources will become more prevalent.

19 • Though no one can predict price cycles of fuels, based on current fuel price
20 forecasts the exclusive addition of natural gas-fueled generation in the future
21 would likely result in more volatile and higher fuel costs over time.

- 1 • Achieving a more balanced mix of fuel sources will mitigate the effect of a
2 rise in the price of any single fuel on the cost of producing electricity, and thus
3 help stabilize the price of electricity paid by FPL's customers.
- 4 • Coal-based generation is a practical way to avoid such an overdependence on
5 natural gas in the future.

6 **Q. Why is FPL proposing to construct a coal plant at this time?**

7 A. As I indicated earlier, FPL is proposing FGPP in the interest of fuel diversity and
8 the associated benefits for our customers. Until fairly recently, natural gas was a
9 relatively inexpensive fuel. Unfortunately, the relative price of natural gas has
10 increased significantly over the last several years, and the fundamentals of supply
11 and demand suggest that it is likely to increase further. On the demand side, some
12 of the very factors that have made natural gas attractive as a fuel – especially the
13 public’s perception that gas provides a relatively clean emissions profile – are
14 likely to become more rather than less significant, while the supply side is
15 relatively constrained and does not appear likely to respond proportionately to the
16 increase in prices. Perhaps even more important, with fundamentally strong
17 demand and modest responsiveness of supply to prices, the future path of natural
18 gas prices is likely to be volatile, as it has been in the recent past.

19
20 FPL and its customers have already seen how significant the impact of price
21 volatility can be. FPL purchases the fuel used to produce electricity and bills
22 customers for the fuel directly at cost – with no profit added. FPL customers saw
23 the latest spike in natural gas prices reflected in their bills beginning in January

1 2006. At that time, a residential 1,000 kWh bill increased by approximately \$17
2 or 18.5% over the 2005 bill, an increase of \$204 per year, primarily due to an
3 increase in fuel costs. Based on FPL's 2007 projected gas consumption as filed in
4 the Fuel Cost Recovery Docket No. 060001-EI, each one dollar per MMBtu
5 increase in the cost of natural gas translates to an increase in FPL's fuel costs of
6 approximately \$430 million. Additionally, as recent hurricanes have shown,
7 natural gas supplies to Florida, which originate in the Gulf of Mexico region, are
8 vulnerable to interruptions. It is quite clear that customers dislike volatility in
9 their bills and there is real value to them in reducing price volatility, just as there
10 is value to customers in enhancing service reliability. FGPP can play an
11 important role in reducing FPL's and its customers' exposure to natural gas price
12 volatility and to potential interruptions in the availability of natural gas supply,
13 which might otherwise lead to temporary power curtailments. To address these
14 issues of natural gas price volatility and supply reliability, FPL is expanding its
15 pursuit of alternative fuel sources to generate power.

16 **Q. Please elaborate on some of FPL's considerations in proposing to construct**
17 **FGPP.**

18 A. While the capital costs of any solid-fuel plant such as FGPP are higher than those
19 for a natural gas-fired plant, the fuel costs are projected to be substantially lower.
20 Thus, upon its commercial operation FGPP will provide substantial fuel savings.
21 Significantly, as Dr. Sim and Mr. Silva indicate in their testimonies, under a
22 significant number of the fuel price scenarios considered in their analysis, FGPP
23 will prove to be the most cost-effective alternative on a long term basis.

1 However, the primary reason FPL is proposing to construct an advanced
2 technology coal power plant is to establish a more diversified fuel portfolio that
3 will, in turn, enhance the reliability of FPL's power supply and mitigate the price
4 volatility of natural gas.

5
6 Coal, of course, is unique among fossil fuels in that the U.S. has an abundant
7 supply. For example, in his testimony Mr. Schwartz notes estimated domestic
8 coal reserves of approximately 230 years based on current demand. Coal,
9 therefore, is an important component of any plan to move to greater energy
10 independence from foreign sourced fossil-fuels, something that I believe most
11 people in this country would agree is imperative for our energy future.

12
13 As Mr. Silva explains, FPL has considered and will continue to consider other
14 options that could contribute to fuel diversity, including renewables such as solar
15 and wind technologies. However, nothing else, not even the significant amount of
16 demand side management in FPL's system, either individually or in the aggregate,
17 would provide the desired fuel diversity in sufficient amounts at the required time.
18 In an effort to stabilize prices and make use of an abundant, readily available fuel
19 source, and after extensive analysis of all available options, FPL proposes to
20 maintain its fuel diversity by adding state-of-the-art advanced technology coal
21 generation to its portfolio of generating plants. As explained in more detail by
22 Mr. Hicks in his testimony, this power plant will produce steam at very high
23 temperatures and pressures which results in producing electricity with higher

1 efficiency and fewer emissions than previous generations of coal-fired power
2 plants. This highly efficient generating technology will be complemented by
3 installation of a comprehensive, state-of-the-art suite of environmental quality
4 control systems, as described by Mr. Hicks.

5 **Q. You described some of the challenges in constructing a coal-fired power**
6 **plant in the state of Florida. Have those challenges abated?**

7 A. In some respects yes, and in others no.

8 **Q. What conditions or factors have changed favorably for the construction of a**
9 **coal-fired unit?**

10 A. There are several major developments that have occurred or are now occurring
11 that we considered in arriving at our decision to pursue this advanced technology
12 coal plant.

13

14 The first is the emergence of a viable clean coal technology commercially
15 available on the scale required that will enable FGPP to meet or exceed Florida's
16 stringent environmental regulations.

17

18 In addition to these major advances in technology that will be incorporated into
19 our new power plant, the recent high market prices for natural gas, which FPL
20 uses to generate a significant percentage of its electricity, and the potential that,
21 going forward, natural gas prices may increase at a much higher rate than coal,
22 makes coal particularly attractive for FPL in the future. Also of equal

1 importance, coal is an abundant and readily available fuel in America, thus
2 making it a more secure source of fuel.

3 **Q. What conditions or factors present particular challenges for the construction**
4 **of a coal-fired unit?**

5 A. FGPP will help meet the need in Florida for reliable, cost-effective power in an
6 environmentally responsible way, and will serve as a strong economic engine in
7 an area of the state that would benefit from the plant's effect on the local
8 economy. FGPP has the support of most local governmental and economic
9 development agencies, as well as many community supporters who welcome the
10 opportunities the plant will provide. Even with all the good support the proposed
11 plant has received, we understand that other stakeholders may raise concerns
12 about the Company's plans and we realize that legal challenges are a potential
13 part of the process of developing a major project. But debate is healthy -- and as
14 the process goes forward, FPL will continue to consider the views of those whose
15 views differ from ours.

16

17 In addition, as discussed in more detail by Mr. Yeager, significant uncertainties in
18 the market for labor and materials may affect the schedule of the Project and may
19 present construction challenges.

20 **Q. Given these challenges, why pursue a coal plant?**

21 A. As I have indicated, pursuing an advanced technology coal plant will provide
22 customers with reduced fuel price volatility, enhanced system reliability and help
23 provide more stable prices – and do so in a way that is consistent with FPL's long

1 history of respect for the environment. In addition, using a fuel that is so
2 abundant domestically, in contrast to other fossil fuels, is consistent with the
3 critical public policy initiatives in this country to achieve greater energy
4 independence from foreign sourced fossil-fuels.

5
6 As presented by FPL witnesses, after extensive analysis of a wide range of market
7 conditions, risk factors, technology and environmental issues and community
8 concerns -- and the impacts of all of these on safely providing reliable electric
9 service at a reasonable cost to meet growing demand -- we have concluded that
10 adding coal generation to FPL's portfolio is the right choice for our customers as
11 we plan today for tomorrow's needs.

12
13 We also believe that the proposal to construct FGPP is consistent with our strong
14 environmental record. Specifically, FPL will continue to be among the very
15 cleanest generating utilities in the nation and will continue to have the lowest CO₂
16 emissions rate of any major utility in the state of Florida. First, FGPP will
17 employ a series of state-of-the-art advanced pollution control technologies.
18 Second, the proposed project will be scrutinized by numerous state and federal
19 agencies to ensure that it meets all applicable environmental and other
20 requirements. Third, FGPP will be an extremely efficient power plant, meaning
21 it will burn less fuel to generate the same amount of electric energy relative to
22 other coal units in the state and, in fact, in the nation.

1 **Q. Why was an advanced technology coal plant selected?**

2 A. As I explained earlier, the need to diversify FPL's fuel sources necessitates the
3 addition of a power plant fueled by something other than natural gas. Wind and
4 solar power, on the scale that is needed, are not viable options in Florida at this
5 time. Nuclear power, while re-emerging as a possible resource option to provide
6 base load generation in the future, also faces significant hurdles and, in any event,
7 successful completion of such a plant would be well beyond our needed time
8 frame. And, as stated by Dr. Sim, energy savings through demand side
9 management, although expected to remain sizable and even growing, will not be
10 enough to meet FPL's future additional power needs. This is despite the fact that,
11 between 2006 and 2015, FPL will add 637 MW of load management and 729
12 MW of conservation for a total of 1,366 MW of incremental demand side
13 management. This will avoid the need for another 1,639 MW of new generation
14 capacity in those years.

15
16 Advanced technology coal is the right choice, and FGPP will be much different
17 from traditional coal-fired plants in terms of efficiency and environmental impact.
18 The type of coal that would be used at FGPP is abundant in the U.S. As Mr.
19 Schwartz indicates, there is roughly a 230-year domestic supply unburdened by
20 the geopolitical issues (e.g., energy dependence and terrorism) presented by oil
21 imported from the Middle East -- issues that may also arise in the future with
22 imported liquefied natural gas ("LNG"). In addition, as I mentioned, FGPP will

1 be much more efficient than conventional coal technology currently used in
2 Florida and the rest of the U. S.
3
4 Further, each of the units will use proven air pollution control technologies to
5 maintain an emission level that will be among the lowest in the country for similar
6 new facilities. Not only will these units minimize air emissions to the greatest
7 extent practicable, but we are designing the facilities with the aim that certain
8 emissions control technologies currently in development may, when proven, be
9 retrofitted into these units. Critics, on the other hand, will suggest that FGPP is
10 the wrong solution because it does not immediately address the issue of carbon
11 dioxide emissions. As other FPL witnesses show, this notion is misguided.
12 FGPP's technology and integrated gasification combined cycle (IGCC) would
13 both produce about the same amount of carbon dioxide emissions. Neither of
14 these technologies, nor other available solid fuel technologies, currently allows
15 carbon dioxide emissions to be captured and sequestered on a cost-effective basis.
16 And, as Mr. Yupp and Mr. Silva explain, because natural gas is likely to remain
17 the marginal fuel for the foreseeable future, it is likely that a regulatory
18 environment that factors carbon dioxide into the price of power will also put
19 additional upward pressure on natural gas prices, thus diluting any disadvantage
20 that a coal-fired project would otherwise have. In fact, Mr. Kosky notes that
21 depending on the type of emission, IGCC is actually worse.

1 I want to be clear that FPL and others in the industry recognize that there likely
2 will be legislative action in the future aimed at reducing CO₂ emissions. As
3 FPL's witnesses explain, we have taken that into account in our planning for
4 FGPP, actually modeling a range of possible outcomes. We expect that the
5 Commission, in determining whether to grant a determination of need for FGPP,
6 certainly would accept the fact that such costs to some extent are likely to be
7 imposed on FGPP and other power plants in the future, although the precise
8 amount is unknown at this time. This is one of the key uncertainties associated
9 with this project that I discuss below in reference to the specific request we are
10 making regarding prudence and future cost recovery, and is discussed at length by
11 Mr. Kosky and other FPL witnesses.

12
13 I would also note that FPL and its parent company FPL Group, Inc. (FPL Group)
14 have been recognized as environmental leaders in the utility industry. FPL Group
15 earned the #1 ranking in environmental performance for the fourth straight time
16 by Innovest, a Wall Street investment research company. As I stated earlier, our
17 emissions rates for NO_x, SO₂ and CO₂ are among the lowest of our peer
18 companies nationwide. The U.S. Department of Energy has ranked our energy
19 conservation efforts #1 among electric utilities nationwide. And our affiliate
20 company, FPL Energy, is the world's largest renewable energy provider. It is the
21 largest generator of wind energy in the U.S. and the world, and also is the largest
22 producer of solar generation in the U.S.

1 So while some may question the effect on our clean energy reputation of bringing
2 on-line a coal-fired power plant, I would note that after the addition of FGPP an
3 advanced coal technology, FPL will continue to be among the very cleanest
4 generating utilities in the nation and will continue to have the lowest CO₂
5 emissions rate of any major utility in the state of Florida.

6 **Q. FPL has indicated its public support for various efforts to address climate**
7 **change and curb greenhouse gas emissions. Are these actions consistent with**
8 **FPL's proposal to construct FGPP?**

9 A. Yes. FPL's central view on this matter is that it is time for this nation to move
10 forward with a mandatory, economy-wide, market based carbon dioxide reduction
11 program. Our industry and its investors need certainty on this matter in order to
12 plan accordingly. Once a national policy is in place, individual companies could
13 then make decisions on existing and new generation consistent with the program's
14 overall requirements. While FPL may not agree with every aspect of every bill,
15 proposal or white paper being discussed on this matter in the public domain, we
16 want to be a part of constructive efforts to further the dialogue and reach our goal.
17 Going forward, we fully expect that coal-fired generation will continue to be an
18 essential part our fuel mix, nationally and at FPL, as it will continue to be
19 important for fuel diversity, reliability and price stability. At FPL, we have built
20 a portfolio of assets that includes low and non-emitting generation that places FPL
21 in a better position to face stricter environmental requirements. In fact, as Mr.
22 Ken Kosky states in his testimony, even with the addition of FGPP, FPL's
23 average rate of CO₂ emissions would be trending downward. The average rate of

1 CO₂ emissions per MWH for the period 2015 through 2020 is expected to be
2 17.4% lower than the previous period from 2000 through 2005.

3 **Q. Did FPL consider other coal technologies?**

4 A. As other FPL witnesses explain, FPL evaluated four coal technologies as part of
5 the selection process. The four technologies were sub-critical pulverized coal
6 (PC), integrated gasification combined cycle (IGCC), circulating fluidized bed
7 (CFB), and ultra-supercritical pulverized coal (USCPC) -- the technology
8 proposed for FGPP. A discussion of these technologies was provided in FPL's
9 Report on Clean Coal Generation, which was provided to the Commission on
10 March 10, 2005. To summarize that report, FPL carefully assessed each
11 technology according to a number of factors -- unit output, heat rate, availability,
12 capital cost and O&M costs. Based on a thorough analysis, FPL concluded that
13 USCPC is the best overall choice to provide the benefits of fuel diversity in the
14 2013 time frame. As discussed in the testimony of Dr. Sim and Mr. Hicks, these
15 results have been confirmed by subsequent studies.

16
17 This technology coupled with a complete suite of emissions control equipment,
18 and an innovative plant design, will allow the major byproducts of the combustion
19 and emissions control processes to be recycled into useful commercial products.
20 The bottom line is that the use of USCPC will provide our customers with the best
21 mix of capital and operating costs, high efficiency, high demonstrated reliability
22 and environmentally responsible conversion of coal to electricity from among the
23 available coal generation alternatives. Messrs. Yeager and Hicks will go into
24 further detail on these coal technologies, and Mr. Jenkins will specifically address

1 why IGCC would not be a viable solution at this time at the scale and efficiency
2 that would be required to meet FPL’s fuel diversity goals.

3 **Q. Please summarize the economic uncertainties associated with the project and**
4 **how it affects the decision-making process in selecting the best alternative.**

5 A. As Mr. Silva and others explain, there are three key areas of economic uncertainty
6 associated with FPL’s analysis: (1) the future fuel price differential between
7 natural gas and coal; (2) costs of compliance with future environmental
8 requirements or unanticipated Site Certification conditions; and (3) the actual
9 capital cost and schedule of completing FGPP and placing it in commercial
10 operation.

11
12 First, we know the capital and operation and maintenance (“O&M”) costs of
13 FGPP will be greater than those of a similarly-sized natural gas-fueled generating
14 plant. But, it is likely that a significant differential between natural gas and coal
15 prices will help to offset the capital and O&M cost differential – though it is
16 difficult to project far into the future what that fuel price differential may be
17 during the plant’s 40-year life. However, even if actual natural gas prices in the
18 future are lower, our customers will still benefit because a significant portion of
19 FPL’s generation will continue to utilize natural gas.

20
21 Second, FPL’s economic analysis also indicates significant uncertainty from the
22 possibility of additional legislative or regulatory requirements, especially in the
23 area of emissions standards. Complying with these potential additional

1 requirements could involve supplementary control equipment, higher emission
2 allowances costs, higher taxes, increased fuel expenditures, or a combination of
3 some or all of these measures that may result in substantial added costs. These
4 prospective requirements, which could be very large, would be part of the cost of
5 electricity borne by FPL's customers. As I indicated earlier, although we expect
6 such requirements to be imposed in the future, the timing and amount is not
7 known at this time. Similarly, unanticipated conditions that may be adopted as
8 part of the Site Certification could impose additional capital or O&M costs on
9 FGPP.

10
11 The third major economic uncertainty results from the much longer lead time that
12 is required – about five to six years from the date of this need filing - for
13 development, permitting and construction of the first FGPP unit and the potential
14 for delays during this process. Again, any delay in the process of obtaining a
15 final Site Certification for FGPP, or delays from any number of potential sources
16 such as vendors, suppliers, and contractors, will cause the plant's capital costs to
17 escalate. Any of these factors, which would be outside the control of FPL, could
18 cause the capital costs of FGPP to be higher than projected.

19
20 Despite these key economic uncertainties, I believe that FPL's proposal to
21 undertake the addition of FGPP at this time is the best, most cost-effective
22 alternative for maintaining fuel diversity within FPL's generation portfolio.
23 FGPP will provide greater system reliability, will help to dampen the effect of
24 volatility in natural gas prices, and be a step forward in the efforts to achieve

1 greater energy independence. The decision to grant a determination of need for
2 this addition to FPL's portfolio should be based on similar findings that these
3 units are the best, most cost-effective alternative for preserving fuel diversity,
4 thereby providing greater reliability and lower fuel-cost volatility for FPL's
5 customers than would be achieved by adding gas-fueled generation at this time.

6 **Q. Given some of the factors and issues you have described above, how does this**
7 **request for a determination of need differ from the most recent requests for**
8 **determinations of need filed by FPL and granted by the Commission?**

9 A. FPL's request that the Commission grant a determination of need for FGPP and
10 approve the related cost recovery methodology proposed by FPL is predicated on
11 several key factors that are different from those associated with the requests for
12 recent determinations of need submitted in connection with Martin Unit 8 and
13 Manatee Unit 3, Turkey Point Unit 5, and the West County Energy Center:
14 specifically, as discussed above and elsewhere by FPL witnesses, (a) an
15 overarching objective to maintain fuel diversity on FPL's system, (b) the very
16 large capital costs associated with this project, and (c) the significant uncertainties
17 associated with construction and other costs, as well as the project timetable.

18 **Q. How are you suggesting the Commission approach this proceeding and**
19 **FPL's request given the uncertainties you describe above, and the differences**
20 **you have highlighted between this and past requests for a determination of**
21 **need?**

22 A. While the Commission should consider all of the factors set forth in the Florida
23 Power Plant Siting Act ("PPSA"), particular emphasis and weight should be

1 placed on the need for fuel diversity consistent with the recent amendments to
2 Section 403.519, Florida Statutes, as I have discussed, and as supported by other
3 witnesses for FPL. This is especially important given the number of significant
4 variables involved in assessing the actual economics of FGPP. The Commission
5 must recognize that there can be no guarantee that the future state of the world
6 will always make FGPP's overall economics the least cost as compared to those
7 of additional natural gas-fired capacity. Clearly, if real relative natural gas prices
8 declined and remained low after FGPP was completed – admittedly an unlikely
9 scenario but not an impossible one – customers would have been better off had
10 they and FPL “bet” on natural gas. But that would be a bet that few rational
11 customers would want to make. With the addition of FGPP, customers gain
12 protection: if natural gas prices are relatively low, then bills are relatively low
13 because the existing natural gas-fired units in the fleet offer even better economics
14 than was expected when they were built; on the other hand, if natural gas prices
15 are relatively high then the economics of FGPP look even better and provide
16 some offset to the impact of those higher gas prices.

17
18 Other economic uncertainties will come into play as well, as noted above, and
19 described in more detail by Messrs. Yeager, Damon and others. For example,
20 natural gas-fired units are more easily sited, involve shorter construction lead
21 times, and require smaller capital investments. But, as I have indicated, and other
22 FPL witnesses discuss in more detail, a coal plant brings important benefits of
23 fuel diversity.

1 Because of these uncertainties, and given the very large capital commitment the
2 Company and its customers will need to make in order to pursue the benefits of
3 fuel diversity, FPL is requesting clear and unwavering direction from the
4 Commission on these significant policy choices regarding fuel selection and the
5 prudence of FGPP and its costs.

6 **Q. Please summarize the specific requests FPL is making with regard to**
7 **establishing the prudence of FGPP and its costs.**

8 A. FPL is requesting that, in connection with granting a determination of need for
9 FGPP, the Commission also specifically find that, based on the projected installed
10 costs of FGPP and the associated facilities, as well as the other projected costs
11 and assumptions, the decision to build the project is prudent and, subject to an
12 annual review process that Mr. Silva describes, that the proposed costs, including
13 additional costs that are imposed pursuant to subsequent environmental legislation
14 or regulatory requirements, likewise are prudent. Further, in light of the dynamic
15 nature of key factors upon which this project is predicated, we are requesting an
16 annual review of actual costs incurred and projected costs, as well as the
17 continued feasibility of the project. In addition, we are also requesting that the
18 Commission approve a mechanism for the recovery of costs incurred should the
19 project not be completed due to a subsequent Commission determination or is
20 otherwise precluded from being completed.

1 **Q. Why does FPL feel that it is necessary to make these requests in the context**
2 **of its request for a determination of need?**

3 A. By stating the applicable cost-recovery principles and providing for annual
4 reviews, the Commission's need determination order will provide a certain
5 measure of assurance to investors who will be asked to finance the project. For
6 example, affirming in the need determination order that prudently incurred costs
7 will be recoverable whether the project is ultimately completed or not will, all
8 other things equal, help maintain a more favorable credit risk profile for the
9 Company and help offset some of the negative impact that such a large, complex
10 and uncertain project would otherwise have.

11
12 FPL believes that the decision to construct FGPP is in the long-term interest of
13 our customers, but recognizes that the capital costs for the project are very large,
14 requiring a significant financial commitment on the part of FPL and its customers.
15 Moreover, the market forces and public policy issues that influence this decision
16 are highly fluid and dynamic, and there are many risks outside of FPL's and this
17 Commission's control that affect the feasibility of the project. FPL's witnesses
18 describe these risks in considerable detail.

19
20 FPL believes that the interests of all stakeholders in this proceeding are well
21 served by a careful delineation of the regulatory processes and procedures
22 applicable to this project. The findings and affirmations that FPL is asking be
23 included in the Commission's need determination Order, while perhaps striking

1 some as regulatory truisms (e.g., all prudently incurred costs should be
2 recoverable or that costs associated with environmental compliance will be
3 recoverable through the Environmental Cost Recovery Clause), are valuable
4 precisely because of the clarity they will bring to the regulatory treatment of costs
5 associated with a project such as FGPP.

6

7 While the time for charging FGPP costs to customers in rates will not occur for
8 several years, the benefits of providing clear cost-recovery and regulatory
9 direction for FGPP begin sooner.

10 **Q. How will the addition of FGPP affect customer bills?**

11 A. While the capital costs of FGPP are high relative to comparable sized gas-fired
12 generating units, these capital costs are offset to a large extent by fuel savings.
13 Using the example in Mr. Silva's testimony, the estimated net effect on a
14 residential 1,000 kWh monthly bill for both FGPP units is \$3.96. The estimated
15 increase in the 1,000 kWh residential base bill for the first year revenue
16 requirements for both FGPP units is \$9.41, and the corresponding projected fuel
17 savings for both units, compared to not adding FGPP or any new generation, is
18 \$5.45 for a net effect of \$3.96. This \$3.96 per month or \$47.52 per year for FGPP
19 compares very favorably to the bill increases experienced by our customers in
20 2006 due to spikes in natural gas prices.

1 **Q. Should the Commission grant FPL's request for a determination of need for**
2 **FGPP?**

3 A. Yes. Adding FGPP to FPL's power plant portfolio is the best, most cost-effective
4 solution FPL can pursue to maintain fuel diversity and system reliability for our
5 customers. Specifically, this addition is needed to preserve a balanced, fuel
6 diverse generation portfolio, as well as to maintain an adequate level of
7 generation reserve margin.

8

9

SUMMARY

10

11 **Q. Please summarize your testimony.**

12 A. FPL believes this advanced technology coal project is needed in Florida to
13 maintain FPL's fuel diversity – a goal shared by the Florida legislature and this
14 Commission. Greater fuel diversity, in turn, will enhance the reliability of our
15 power supply and help stabilize electricity prices. Further, the advanced
16 technology design and state-of-the-art pollution controls at FGPP will minimize
17 emissions, enabling FPL to continue its tradition of sound environmental
18 management. Building this state-of-the-art, advanced technology coal-fired
19 power plant is the right choice for FPL and its customers. In light of the
20 magnitude of the financial commitment that FPL and its customers will need to
21 make to construct FGPP, and the significant public policy issues associated with
22 the choice of fuel for this generating unit, FPL is requesting a determination from
23 the Commission relative to the prudence of the project and the means by which

1 such costs would be reflected in rates, including the establishment of an annual
2 review process by which the prudence of actual costs incurred could be assessed
3 and the continued feasibility of the project considered.

4 **Q. Does this conclude your direct testimony?**

5 A. Yes.

Florida Power & Light Company

Biographical
Information

Armando J. Olivera President

Armando Olivera is president of Florida Power & Light Company (FPL), the principal subsidiary of FPL Group, Inc., and one of the largest investor-owned electric utilities in the nation with more than four million customer accounts. He was appointed president in June 2003.

During Mr. Olivera's leadership, FPL has invested heavily in ensuring reliable service and meeting strong current and projected growth in demand for electric power in its vast service territory. FPL has the most efficient power plant fleet in the nation and has taken a number of additional actions to mitigate high fuel costs. The company is now implementing an industry-leading program to harden its electric system against future hurricanes.

Mr. Olivera joined FPL in 1972 and has served in a variety of management positions in the areas of transmission and distribution operations, fuels management, and strategic planning and resource allocation. Most recently he served as senior vice president of Power Systems.

During his leadership of Power Systems, FPL significantly increased service reliability, placing its performance within the top 20 percent of the industry. At the same time, the company's operations and maintenance costs per kilowatt-hour were well below the industry average. Over that five-year period, FPL added 350,000 new customers, and Mr. Olivera oversaw a multi-billion dollar capital expansion program to meet that growth and enhance overall system reliability.

Mr. Olivera holds a bachelor of science degree in electrical engineering from Cornell University and a master of business administration degree from the University of Miami. He also is a graduate of the professional management development program of the Harvard Business School.

Mr. Olivera is chairman of the Florida Reliability Coordinating Council (FRCC) Executive Board, a member of the Board of the Southeastern Electric Exchange and Enterprise Florida, and a member of Cornell University Engineering Council and Cornell University Council.