ORIGINAL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 070098-EI
FLORIDA POWER & LIGHT COMPANY

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

REBUTTAL TESTIMONY & EXHIBIT OF:

DAVID N. HICKS

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MARCH 30, 2007

Q. Please state your name and business address.

A. My name is David N. Hicks. My business address is Florida Power & Light, 700 Universe Boulevard, Juno Beach, Florida 33408.

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

A. I am employed by Florida Power & Light Company (FPL or the Company) as a Senior Director of Project Development. In my position at FPL, I have responsibility for the development of power generation projects to meet the needs of FPL's customers.

Q. Please describe your duties and responsibilities with regard to the development of solid fuel generation to meet FPL customer needs.

A. Commencing in the summer of 2003, I was assigned the responsibility for leading the investigation into the potential of adding new solid fuel generation to FPL's system, and the subsequent development of new solid fuel generation additions to FPL's power generation fleet. I was responsible for the development and permitting team for the Southwest St. Lucie Power Park (SWLPP). I am currently leading the

development and permitting team for the FPL Glades Power Park (FGPP).

Q. Have you previously submitted direct testimony in this proceeding?

A. Yes.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of this testimony is to reaffirm that FPL has made a prudent and well-informed technology choice in choosing ultra-supercritical pulverized coal (USCPC) technology for the FPL Glades Power Park (FGPP), notwithstanding the assertions made in the testimony of Richard Furman on behalf of certain intervenors. FPL's experience in evaluating and successfully bringing new generation technologies to its customers is well known, respected in the industry and has served its customers well. Whether it be the development of commercial nuclear power in the 1960s, the adaptation to efficient natural gas fired combined cycle units in the 1980s and 1990s or the significant expansion of wind power in the 2000s by its sister company, FPL Energy, FPL's engineers have demonstrated a prudent and successful track record of bringing the right technology to its customers at the appropriate time in its development stage, to maximize the benefit while minimizing the risks. This is a fact and cannot be summarily dismissed.

In making the selection of USCPC technology for FGPP, FPL relied upon not only its own significant experience, but the collective experience of the international power generation industry and a number of prominent engineering firms and subject matter experts. The in-depth engineering analysis, commercial negotiations and design work conducted thus far are unequivocal in the conclusion that USCPC technology, as proposed for FGPP, is the most prudent means of delivering measurable fuel diversity to FPL customers by 2013 and 2014 while maintaining the high standards of reliability, cost-effectiveness and environmental stewardship that are at the core of FPL's reputation.

Q. Mr. Furman provides information that he asserts demonstrates that IGCC is a better choice than USCPC technology. Do you agree with Mr. Furman's approach and conclusion?

A. No, I do not. The technical process that FPL employs in the selection of new generation technology for its customers is characterized by a far reaching research program and rigorous engineering review by multiple experts, including well-respected and highly competent third party engineering firms. This technical process is complemented by an equally aggressive commercial process by which each alternative technology is investigated to determine the cost, schedule and risks associated with engineering, procurement, construction and operation of the facility. The technical and commercial analyses culminate in a

thorough set of economic and system analyses to determine the cost-effectiveness and reliability benefits offered by the various technology choices.

Mr. Furman, in contrast, has engaged in a process that does not employ a consistent, methodical engineering and analytical approach. Instead, Mr. Furman grasps optimistic pieces of information from unconnected studies, presentations and published articles in an attempt to cast doubt on FPL's rigorous and transparent technology selection process. FPL's customers have a great deal to lose if Mr. Furman's misrepresentation of current coal technology capability is accepted.

Q. What specific errors, inconsistencies and misinformation are contained in Mr. Furman's testimony and how does the testimony filed by you and other witnesses address the issues created by this testimony?

A. FPL has conducted a full review of Mr. Furman's testimony and will address the areas he discusses through the rebuttal testimony of several witnesses. Mr. Seth Schwartz identifies several fundamental flaws in the assumptions made by Mr. Furman in addressing current and projected delivered prices for coal and petroleum coke. Reconciling these flaws shows that Mr. Furman has improperly concluded that IGCC can be a more cost-effective alternative than the proposed FGPP. Mr. Kennard Kosky corrects a number of misrepresentations

made by Mr. Furman regarding the alleged environmental advantages of IGCC in comparison to USCPC technology. Mr. Stephen Jenkins, a former deputy project manager at the Polk IGCC power station project, addresses a wide range of errors and inconsistencies in Mr. Furman's discussion of IGCC technology, itself.

Building on the conclusions of these witnesses, this rebuttal reaffirms that FPL has made a prudent and well-informed choice of USCPC technology for its proposed FGPP facility.

Q. The underlying assertion in Mr. Furman's testimony is that IGCC would provide FPL's customers with a better generation alternative than USCPC technology. How is Mr. Furman's conclusion drawn, and why is it incorrect?

A. Mr. Furman addresses issues such as fuel cost, emissions profile, capital cost and reliability in a singular manner that does not appreciate how these issues interact to affect the overall costs and capabilities of a specific project. This approach allows for the assertions most beneficial to his case to be brought forward on any individual issue. However, this approach is incomplete in that it does not properly compare all the characteristics of one specific defined alternative (gasifier and power plant configuration, fueling plan, and emissions control equipment suite) to the proposed FGPP project. Had Mr. Furman restricted himself to a more rigorous and realistic

approach, as FPL does in its detailed screening process, the results would demonstrate that there is no single IGCC alternative that can credibly meet or exceed the reliability, cost-effectiveness and environmental benefits offered by FGPP's proposed USCPC design.

Viewed in the context of this Need Determination proceeding, it is also clear that there is no available single IGCC alternative that can compete with USCPC technology in a timeframe to meet the 2013 and 2014 capacity need.

Q. Has FPL conducted analyses in which it reviewed the impact of alternate fueling plans on the range of alternative technologies?

A. Yes. As a matter of good practice, FPL reviews a range of fueling plans and alternative technologies. For example, in the Clean Coal Technology Selection Study (January 2007) an IGCC unit with a fueling plan of 50% coal and 50% petroleum coke was considered against three coal combustion options with a fueling plan of 20% petroleum coke, and 80% bituminous coal. The results of that analysis concluded that such an IGCC unit and fueling plan would not be competitive with any of the coal combustion options, including USCPC.

Q. Do you agree with Mr. Furman's characterization of the cost and feasibility of capturing carbon from the two technologies?

A. No. Carbon capture and sequestration has not been demonstrated for any generation technology, including IGCC, and remains a significant technological challenge for all alternatives, as discussed more specifically in Mr. Jenkins' direct and rebuttal testimony. There is no evidence at this stage of development to indicate that the choice of one technology over another today will realize benefits in more effective or economical capture of carbon dioxide at some later date. In fact, the recent MIT Study, The Future of Coal (March 2007, page 96) recommends the following:

> "New coal combustion units should be built with the highest thermal efficiency that is economically justifiable. Any carbon charge will make the economics of higher efficiency coal plants more attractive than those of lower efficiency plants. In addition, continuous advances in R&D make it likely that further reductions in heat rates will be possible. For pulverized coal plants this means supercritical pulverized coal plants (SCPC) today and ultra-supercritical pulverized coal (USCPC) plants soon...For IGCC plants this means attention to higher efficiency and high availability operation."

As demonstrated in FPL's need application and supporting testimony, FGPP's USCPC units will be more efficient, less expensive to build

and operate, more reliable, and produce less CO_2 per MWH of electricity provided FPL's customers than would an IGCC plant at the FGPP site. In short, within the context of the points made in the quotation from the MIT study above, FPL is demonstrating technology leadership in bringing the benefits of this advanced USCPC technology for service to its customers at FGPP.

Q. Mr. Furman suggests that the potential for improvement in IGCC technology should be sufficient to justify the choice of IGCC over USCPC technology. Do you agree with such a suggestion?

A. No. It would be imprudent to abandon the known capability and benefits of the USCPC technology for a hypothetical future capability that may or may not be more effective and economic. Again, the recent MIT study, The Future of Coal (March 2007, page xiii), cautions:

> "It is critical that the government RD&D program not fall into the trap of picking a technology 'winner,' especially at a time when there is great coal combustion and conversion development activity underway in the private sector in both the United States and abroad."

Q. Would you please describe FPL's overall view of Integrated Gasification Combined Cycle technology?

A. FPL is committed to delivering fuel diversity to its customers through a variety of technologies. Were IGCC a more promising technology at

this phase, you would see FPL and many other power producers aggressively pursuing its development without the need for public subsidies to mitigate the risk of an uncertain developing technology. The reality is that IGCC is simply not ready to dependably and cost-effectively meet the needs of FPL's customers.

When a critical evaluation of all of the issues related to the USCPC technology versus any hypothetical potential benefits of IGCC technology is conducted, it becomes clear that USCPC technology is the prudent and responsible choice for FPL's customers at this time.

Q. What action is FPL taking to further the development of IGCC?

A. In addition to my work on the FGPP project, I am currently assigned responsibility for the potential development of an IGCC facility at FPL's existing Martin plant. FPL, in conjunction with a leading IGCC vendor, is investigating a proposed project where a gasification system would be constructed, owned and operated by an IGCC technology vendor or other third party adjacent to an existing natural gas fueled combined cycle unit. The gasification system output would be purchased through a tolling agreement, where FPL would supply raw feedstock to the facility and purchase the synthetic gas and other potential thermal products for a tolling or "conversion" fee.

This approach has several benefits to FPL and its customers. The capital cost impact of the project would be minimized by utilizing an existing site and combined cycle facility with the IGCC technology vendor or other third party bearing the capital cost and risks of the gasification system. Additionally, the project would have the existing natural gas supply infrastructure as an alternate fuel source to accommodate upsets in the gasification process without impacting generation reliability. Finally, this approach would maximize the fuel diversity impact of a new project by adding syngas fueled capacity that augments existing natural gas fired capacity.

Q. As an example of IGCC development activity, Mr. Furman mentions that Tampa Electric Company (TECO) has announced that they will build a 630 MW IGCC plant at the Polk Power Plant for operation in 2013. Do you have any comments with respect to this?

A. FPL is familiar with TECO's plans. FPL notes that TECO's proposed plant is much smaller than the size that FPL needs to serve its customers, and that TECO is proposing to build one of the next-generation reference plants of the kind described in Mr. Jenkins direct testimony. It is unclear whether TECO would proceed with this plant absent passage of special IGCC cost recovery legislation pending before the Florida legislature at the date of this rebuttal testimony.

Consistent with FPL's observation that IGCC technology does not intrinsically perform any carbon capture or carbon sequestration function, FPL notes there is no specification in TECO's February 7, 2007 RFP or its March 9, 2007 update for carbon capture or carbon sequestration. TECO did announce that they are investigating what it would take to include CO2 capture technology on the new IGCC plant, and are having the University of South Florida study the capability of local geology for CO2 sequestration. However, the block flow diagram for the plant does not indicate carbon capture and sequestration processes or equipment necessary to capture CO_2.

Similarly, the New York Power Authority (NYPA) recently announced that it would "conditionally award" a contract for an IGCC plant in Huntley, New York to NRG. However, the NYPA noted that NRG's IGCC bid was not accepted and that any contract award was "conditional" because the IGCC proposal was not "priced at a level consistent with the Authority's mission of being competitive in the current market environment." The scope of the NRG plant does not include carbon capture and sequestration; rather it is proposed that if built it will be have "provisions for future capability to capture and sequester CO2 emissions."

FGPP similarly has space in its design for possible retrofit for carbon capture and sequestration at a later date, should that be required and become feasible and economical.

Q. Based on the in-depth experience you have obtained in participating in FPL's ongoing evaluation of coal technologies and the potential development of the Martin IGCC project, have you drawn conclusions regarding the current state of industry development of IGCC?

A. Yes, I have. Through my involvement in the SWSLPP project, the FGPP project and the Martin IGCC project I have gained first hand insight into the status of the industry and its current ability to successfully deploy coal generation technologies. At present the industry is struggling with the design, construction and deployment of IGCC technology that is competitive with USCPC technology in reliability, cost and environmental performance.

The slow pace of IGCC technology development experienced over the past 30 years does not mean that IGCC technology will not continue to improve. In fact, FPL expects that IGCC technology will improve. FPL remains committed, as has been its history with many of the technologies it now employs, to deploy new technologies as soon as they can provide an acceptable economic and operating risk profile for its customers. To that end, the proposed Martin IGCC project has the

potential to maintain a reasonable balance of risk and opportunity for FPL's customers to deploy IGCC technology in the future.

Q. Given your experience, what is the best way for FPL to provide cost effective, reliable, and environmentally sensitive fuel diversity to meet its customers' needs in the 2012-2014 time frame?

A. The FGPP project FPL has developed and continues to pursue is the most certain and proven means of providing measurable fuel diversity for FPL's customers in the 2012-2014 time frame.

Q. Does this conclude your testimony?

A. Yes.