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

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DIRECT TESTIMONY & EXHIBIT OF:

WILLIAM H. DAMON III

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

DIRECT TESTIMONY OF WILLIAM H. DAMON III

DOCKET NO. 07_____-EI

JANUARY 29, 2007

I. INTRODUCTION AND CREDENTIALS

Q. Please state your name and business address.

A. My name is William H. Damon, III. My business address is Cummins & Barnard, Inc., 5405 Data Court, Ann Arbor, Michigan, 48108.

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

A. I am employed by Cummins & Barnard, Inc. ("C&B") as the Chief Executive Officer (CEO).

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

A. Currently as CEO, I am primarily focused on our strategic consulting and Owner Engineering business for industrial and utility clients in addition to managing the business operations of the firm. This includes leading the Owner Engineering assignments presently on two coal-fired projects: the We Energies 2 x 615 MW Elm Road Generation Project and the E ON U.S. 750 MW Trimble County Unit 2 Project.

Q. Please describe your educational background and business experience as it relates to your testimony.

A. I received a Bachelors of Science Degree in Mechanical Engineering from Michigan State University in 1975 and have taken graduate level courses in engineering and business administration from both Michigan State and the University of Michigan. I am a registered professional engineer in 6 states and am certified with the National Council of Examiners for Engineering and Surveying. Additionally, I am a member of the American Society of Mechanical Engineers as well as the National Society of Professional Engineers.

I began my career with an electric utility, Consumers Power Company in Jackson, Michigan as a mechanical engineer in the Corporate Management Development Program with a broad range of assignments in the design, construction and startup of utility power plants. This included startup and commissioning of the 500 MW oil-fired D.E. Karn Unit 4 and Lead Mechanical Engineer for the 770 MW coal-fired J.H. Campbell Unit 3 Plant from design development through commercial operation. I subsequently spent 8 years with an international consulting engineering firm, Gilbert/Commonwealth, Inc. with my primary assignment being Manager of Advanced Engineering and Mechanical Staff. I managed and was responsible for staff expertise in key power plant systems as well as cogeneration and advanced technologies including gasification and fluid bed combustion. For

two years I was with an independent power producer (IPP), Alternative Energy Ventures and was actively engaged in the operations and development of cogeneration projects as well as the development and farm-out negotiations of coal seam methane property/leaseholds in Colorado. In 1990, I joined C&B as a principal and co-owner and have been significantly involved in power generation development and engineering projects on behalf of public utilities, power developers, municipalities, as well as large industrial and institutional clients since that time.

Q. Have you previously provided testimony in a public utility proceeding?

A. Yes. I submitted testimony in connection with the September 2003 Certificate of Public Convenience and Necessity application for Wisconsin Electric Power Company's filing for construction of the Elm Road Generating Station – 2 x 615 MW Supercritical coal-fired power project, Docket No. 05-CE-130. The purpose of my testimony was to discuss and present C&B's work associated with the bid evaluation and project development for the Engineer/Procure/Construct (EPC) contractor selection with commentary and opinion as to the reasonableness of the contracting approach and competitive bid/development process focused on the resulting design and target EPC price being submitted for the project.

Q. Are you sponsoring any part of the Need Study for this proceeding?

A. Yes. I co-sponsor Section III. G. of the Need Study.

II. PURPOSE

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

A. The purpose of my testimony is to present the conclusions of our independent engineering review of the FPL contracting strategy and estimated cost for the FGPP Project and render opinion based on the results of our evaluation as to reasonableness and market competitiveness for this 2 x 980 MW ultra-supercritical pulverized coal-plant development (with Unit 1 and 2 commercial operations dates targeted for mid-2013 and 2014 respectively).

Q. What are the qualifications of Cummins & Barnard in offering Independent Engineering testimony?

A. C&B is very active in the present sub-critical (SPC) and large supercritical, pulverized coal-fired (SCPC) power project market serving as Owner's Engineer on multiple projects in various states of development, bidding and construction. Key representative and active projects include:

- We Energies Elm Road Generating Station – Two x 615 MW SCPC units presently under construction with commercial operating dates (COD) set for 2009 and 2010.
- E ON U.S. Trimble County Unit 2 – 750 MW SCPC unit presently under construction with the EPC contract finalized and issued July 2006 with a COD in 2010.

- UAMP/IPA Intermountain Power Plant Unit 3 – 900 MW SCPC project currently in the EPC bidding phase with a tentative COD of April, 2012.
- Nevada Power Ely Energy Center – 2 x 750 MW SCPC in development stage, with C&B currently working on finalizing contracting approach and design development/bid documents for 2007 submittals for equipment and EPC bidding.
- Target priced EPC contract development with design, construction and pricing monitoring through Owner's Engineer assignments on five large Air Quality Control System (AQCS) retrofit projects on existing coal-fired units.

Q. Are you presently involved in any major coal-fired generation projects and contracting strategy or cost development?

A. Yes. As previously noted, I am managing our engineering assignments for both the We Energies 2 x 615 MW Elm Road Generation Project and the E ON U.S. 750 MW Trimble County Unit 2 Project. Our scope of work for both assignments has involved project cost estimating, EPC contract development, major equipment selection, technical and commercial bid review, and related tasks. I am also familiar with and review similar cost estimation and development engineering efforts for the other active in-house coal-fired generation and AQCS retrofit projects for clients including Nevada Power, UAMP/IPA, Consumers Energy, Constellation, and FirstEnergy.

Q. What steps did you take in completing an independent engineering evaluation of the FGPP project?

A. FPL established the overall cost estimate for FGPP, as documented in the testimony provided by Mr. William Yeager. FPL provided access to major equipment bid tabulations, EPC cost estimates, transmission interconnection and integration data, and financial cash flow calculations that C&B used in our independent evaluation. Representatives of C&B including myself also completed a series of interviews with FPL and EPC contractor personnel to review the process, data and costs used to construct the FGPP estimate. Lastly, we compared the resulting FPL FGPP approach and costs to cost data and contracting options from other active coal projects to establish our independent opinion.

III. OVERALL PROJECT COST ESTIMATE AND CONTRACTING STRATEGY

Q. What constitutes the total installed cost estimate for the FGPP Project?

A. The overall installed cost for the two-unit FGPP, as located on a new site not previously developed and remote from interconnecting utilities (termed "green field"), includes several major cost components as presented in the testimony of Mr. William Yeager (Exhibit WLY-1). These major cost components include the following:

- Power Plant Costs, including major equipment (Boilers, Steam Turbine/Generators (ST/Gs) and Air Quality Control Systems (AQCS)), balance-of-plant equipment and commodities, construction; and startup/commissioning costs.
- Transmission Interconnection and Integration Costs, between the FGPP generator step-up transformers and the existing high voltage grid, as outlined and defined in Mr. Jose Coto's testimony.
- Owner's Costs, including Power Plant and Transmission line Land acquisition costs and allowance for funds used during construction (AFUDC).

Q. On what aspects of the total FGPP cost did you focus your independent engineering efforts and why?

A. C&B principally focused on the Power Plant Costs, including assessment of the commercial and contracting strategy that resulted in the major equipment and EPC contract pricing being submitted by FPL. Additionally, we reviewed the design basis and cost estimate for the Transmission Interconnection and Integration portion of FGPP and certain Owner's Costs (specifically the allowance for funds used during construction (AFUDC)).

The results of our independent review are contained in Sections IV (Power Plant), V (Transmission Interconnection and Integration) and VI (Owner's Costs) of this testimony.

Q. Please describe your understanding of the overall contracting approach and competitive pricing options being pursued by FPL as part of establishing the FGPP project cost.

A. FPL followed what I will term as a "hybrid EPC" contracting strategy for project development and definition of Power Plant costs. This strategy involves the direct purchase of major equipment by the Owner with the development of the EPC scope, price and terms on an open-book basis to conform a fixed price EPC contract.

Based on the efficient, power generation thermal cycle and major equipment requirements established by FPL for the Power Plant, a competitive solicitation, negotiation, and award process was conducted by FPL for the major equipment contracts (boilers, steam turbine/generators, air quality control systems). In parallel to major equipment competitive bidding, FPL undertook "open book" project definition and commercial negotiation of an engineer-procure-construct (EPC) contract with their selected contractor that was benchmarked against a recent, similarly sized, competitively bid project. The scope of this EPC contract did include design engineering for balance-of-plant equipment as well as materials procurement, construction, startup and commissioning services for the complete Power Plant inclusive of installation of major equipment noted above with commercial terms based on the competitively bid West County Energy Center EPC Agreement.

With respect to Transmission Interconnection and Integration, FPL selected a multiple supplier self perform strategy for development and cost estimation consistent with its past practice. The FPL Transmission Group completed all preliminary transmission line routing, and conceptual design, for the Transmission Facilities. This conceptual design served as the basis from which cost estimates for each portion of the Interconnection and Integration were developed. We understand that FPL will ultimately utilize a competitive bidding process for major equipment procurement from multiple sources and for specialized construction services for transmission lines consistent with past FPL practice. Section V of my testimony contains further commentary on Transmission Interconnection and Integration costs.

Q. What is meant by the term "open book" as defined and utilized in the EPC Contract development?

A. The term "open book" definition refers to the collaborative efforts of an owner and contractor to establish the EPC scope, price, and terms. For FGPP, engineered equipment, commodity quantities and costs, construction labor hours and rates, as well as construction indirect costs, were initially prepared by the contractor utilizing a similar project database that was subsequently used as the basis and proxy for contractor and FPL negotiations for FGPP.

Q. Is this hybrid contracting approach used by FPL unique in the market place?

A. No. The hybrid EPC contracting strategy implemented by FPL has many similarities to strategies being utilized by other public utilities and energy

companies. The hybrid strategy is particularly appropriate and prevalent in today's very active market place, given that both EPC contractors and major equipment manufacturers are resource-constrained and selective in which projects or processes they are willing to participate in, typical of a seller's market.

Q. Would other contracting strategies, such as a competitively-bid lump sum turnkey (LSTK) strategy, have yielded a more accurate estimate of the EPC costs for the Power Plant?

A. No. As stated, resource constraints and current activity levels within the ranks of experienced EPC contractors and major equipment manufacturers, along with forecast uncertainties for material and labor escalation coupled with the timeline of FGPP development, would not be supportive of a competitive LSTK strategy. Even if the front end schedule supported a competitive bid process, the ability to secure an adequate number of qualified EPC contractors would be a significant challenge in today's market and we do not believe such an approach would yield a more accurate estimate of Power Plant costs. Combining the resources of FPL and an experienced EPC contractor to collaboratively establish EPC pricing on an open book basis, in parallel to confirming major equipment pricing, allowed for a comprehensive consideration of project-specific configuration issues as well as overall constructability and costs. Utilizing a detailed estimate from a similar proxy project on an open book basis to match FGPP project schedule and design

requirements further reduced uncertainty for both parties (see Section IV.2 for additional testimony).

IV. POWER PLANT COSTS

Q. What constitutes the Power Plant cost?

A. The Power Plant Cost includes major equipment pricing, EPC contract pricing, and other Owner's Costs. The bulk of the Power Plant Cost (approximately 75 percent) is comprised of major equipment and EPC costs. The basis for these two cost components is reviewed in Parts IV.1 and IV.2 respectively, with comments on overall Power Plant cost included in Part IV.3 of my testimony. Owner's Costs are addressed in Part VI.

Q. What influence does the contracting strategy employed have on Power Plant cost?

A. The contracting strategy employed by an Owner directly affects the accuracy of the Power Plant component of the overall project cost estimate, of which the two largest components are major power generating equipment and balance-of-plant EPC costs. Certain strategies such as those employed on the FGPP project and further defined in this testimony reduce cost uncertainty via upfront negotiation of the pricing with reputable manufacturers and contractors.

The contracting strategies employed on recent and current-day major coal unit developments were compared and contrasted to the strategy implemented by FPL. Results of this comparison, with focus on the reasonableness of major equipment and EPC pricing received, are contained in Sections IV.1 and IV.2 respectively. Section IV.3 of this testimony provides commentary on the Power Plant cost component in total.

IV.1 MAJOR EQUIPMENT

Q. What constitutes "major equipment" and what contracting strategy was taken to define the major equipment scope of supply and pricing?

A. Major equipment for the two-unit FGPP consists of the boilers (with boiler auxiliaries including fans, economizers, air heaters, pumps, selective catalytic reduction equipment, and other equipment), steam turbine/generators (ST/G, with auxiliaries), and air quality control systems (AQCS). The AQCS scope includes a pulse jet fabric filter, induced draft fan, wet flue gas desulfurization equipment, and a wet electrostatic precipitator. The major equipment in each of the two units is separate but identical. FPL chose to bid, negotiate, and select major equipment using a competitive bid process with defined technical and commercial requirements, as a means of confirming price and delivery to reducing price uncertainty and escalation in today's active market.

All equipment was based on FPL's selection of an ultra-supercritical thermal cycle for this coal-fired power generation project. The equipment requirements were extrapolated from the ultra-supercritical design prepared by FPL and their engineering consultant, with defined performance requirements and airborne emissions limits consistent with those defined in the Site Certification (SCA) and Prevention of Significant Deterioration (PSD) permit applications submitted for the FGPP.

As was presented to us, the competitive bid process included at least three bids for each of the major equipment type (e.g., boilers) from what we would agree are recognized, qualified and experienced manufacturers. Bid tab comparison of manufacturer submittals were prepared by FPL staff, with technical and performance factors compared and evaluated to establish the lowest evaluated selection for each major equipment type.

Q. Was the selected strategy appropriate for obtaining competitive pricing for FGPP-specific major equipment in the current marketplace?

A. Yes. Given the very active market place, FPL did receive bids for each major equipment type and the competitive bidding process with defined commercial and technical requirements were compared to other strategies in use and found to be reasonable and representative of a well-managed process.

Q. What is the total price for the Unit 1 and 2 major equipment and is this considered reasonable in today's marketplace?

A. The pricing for the boilers, ST/Gs, and AQC systems for both FGPP units, as noted, was established through a competitive bid and evaluation process that was provided for our review. From this process, the capital price summation for major equipment in December, 2006 dollars was established at [redacted]. On a dollars per net kilowatt ($/kW) basis, this represents a cost of $[redacted].

My independent review of this pricing in comparison to recent 2006 procurements and pending awards on other projects found such pricing to be reasonable and representative of current market trends.

Q. What are industry trends for major equipment pricing looking forward, based on manufacturing capacity, prices for labor and materials, and other factors?

A. Current and near-term industry trends for major equipment pricing are still escalating upward from early 2006 pricing, as a result of the heavy commitment of space within major manufacturer's production schedules, combined demand for equipment for both new plants and existing plant retrofits, limited number of manufacturers, and continued escalation of key commodity materials such as high alloy steel. A contracting strategy wherein the equipment design requirements are established to match thermal cycle and emission limits, and then competitively bid, is considered to be a "least cost"

approach, particularly for projects having commercial operating dates targeted for 2013 and 2014, and as such will reduce exposure to potential price escalation and ensure that the equipment will be available in accordance with the project construction schedule.

Q. Why is the AQC system pricing within the overall major equipment budget not completely firm and lump-sum as for other equipment, and how will the actual incurred costs for such be closely controlled to reduce exposure?

A. Approximately 35 percent of the AQCS contract value was bid on a non-firm (provisional) basis. The pricing volatility in the high alloy steel marketplace is the result of a limited number of global producers of high alloy materials and demand for such material from many active projects. Our experience on recent projects involving AQCS systems has been that between 20 and 50 percent of the total AQCS price has been on a provisional basis. The approach typically used to control such provisional sums is to tie adjustments to published market indices (termed indexing) for future up-or-down true-ups. This indexing is generally based on a published control standard allowing use of a reasonable Owner's contingency to mitigate future risks of cost change for which neither owner or the manufacturer have control over. FPL's proposed use of an indexing mechanism as included in Mr. William Yeager's testimony is consistent with this approach and consistent with our market experience.

Q. What are your specific conclusions regarding the reasonableness of FGPP Major Equipment pricing received?

A. FPL utilized a competitive bidding process involving reputable equipment manufacturers. FPL conducted a detailed evaluation and is at the time of our review finalizing negotiations with the selected manufacturers for each major equipment component noted, that appears to be on the basis of lowest evaluated cost. This selection process was determined to be consistent with standard industry practices. As previously noted, the timing of major equipment procurements was viewed to be suitable to minimize the effects of market place price escalation and to support the overall project schedule (risk of delayed equipment delivery).

IV.2 ENGINEERING, PROCUREMENT, AND CONSTRUCTION (EPC)

Q. What constitutes the EPC price?

A. The EPC price includes all direct and indirect equipment, commodity and construction costs associated with the complete Power Plant, less the major equipment purchases discussed earlier. Major cost components within the EPC price include procurement of balance-of-plant materials, engineered equipment, and construction labor for EPC supplied equipment as well as major equipment erection costs.

Q. What was the contracting strategy that FPL used to select an EPC contractor and how was the method used to develop pricing for the EPC component of the Power Plant cost?

A. During the formative stages of the FGPP project, we understand that FPL contacted a select group of domestic EPC contractors to determine relative interest in project participation and to discuss potential bid and contracting strategies. These discussions confirmed that the EPC marketplace was highly subscribed and that contractors were non-supportive of competitively bidding such a large project, particularly on a lump-sum turnkey basis. Zachry Construction did indicate interest and resource availability to support FGPP through a joint venture of Black & Veatch Corporation and Zachry Construction (BVZ). This team was willing to pursue this project on a negotiated "open book" basis, utilizing a detailed estimate database from a number of similar supercritical coal projects, to develop a firm, lump sum EPC contract. We understand that BVZ was recently awarded the West County combined cycle project by FPL following a competitive bid process and have successfully executed several other EPC contracts for gas-based power projects in Florida for FPL. They also have a strong resume of coal-fired power generation projects with several recent EPC awards for domestic supercritical coal projects from competitive bidding.

The result was that FPL and BVZ agreed to develop the EPC price and contract for FGPP, using "open book" adjustment of the costs from a

comparably sized project as the proxy for scope definition and pricing. The proxy project is a similarly sized Texas-based, single supercritical coal-fired unit with design and cost development data based on mid-2006 timing; we understand that BVZ was the lowest evaluated bidder for the EPC on this proxy project.

The open book adjustment process considered differences in project size (e.g., two units versus one), site development differences, scope changes (e.g., dry to wet AQCS scrubber conversion, increased common system sizes, larger cooling tower), specific major equipment suppliers and thermal cycle and fuel differences as a means of defining equipment and commodity requirements and changes to the benchmarked proxy project. Labor adjustments were also made, for differences such as craft/crew size changes for the different state and sites, but reflective of the 50-hour construction work week similar to the proxy. The adjusted EPC estimate for FGPP was then adjusted for escalation based on anticipated timing for procurements and construction activities. This FGPP estimate thus reflects the level of detail that would typically be prepared for a competitive bid, but tailored specifically for FGPP site, fuel, and technology requirements.

This open book process, as we reviewed it, provided a means for FPL to participate in project development and cost data in parallel. As was previously mentioned, the parties agreed that the commercial terms and

conditions for the recently negotiated West County project would be the basis for the FGPP EPC agreement with minor adjustments. Given that the proxy project had been awarded to BVZ in a competitive bid process and that comparable commercial terms had been recently (2006) negotiated between the parties, the strategy of open book development and negotiation was viewed to be well-structured and cost-effective means of establishing the EPC scope and price for FGPP. This position is reinforced in today's active marketplace, wherein we are assisting other plant owners with the implementation of similar hybrid EPC contracting strategies to control costs and schedule and gain early commitments from key suppliers.

Q. Is the selected EPC contractor capable and qualified to execute the project?

A. The BVZ joint venture has a resume of successful EPC power generation projects throughout the United States, and is actively involved in a number of current domestic coal-based projects including OPPD's Nebraska City Unit 2 and CPS's Spruce Unit 2 projects. Additionally, BVZ has constructed multiple EPC-based projects for FPL in Florida in the last five years and as such is also very familiar with the construction labor market in Florida. In conclusion, we have found BVZ to be a very qualified EPC contractor and well-suited to execute the coal-based EPC contract for the FGPP.

Q. How was the price for balance-of-plant (BOP) engineered equipment and commodities established within the EPC cost estimate, and was the basis for such considered reasonable?

A. Using the open book approach, BVZ and FPL collectively defined BOP equipment and commodities required for the FGPP conceptual design through adjustment of a detailed take-off for the proxy supercritical power generating plant that BVZ previously competitively bid. This process accounted for project-specific differences as well as multiple units and common plant system differences. This approach produced both a detailed ledger of BOP equipment/commodities and a means and basis for defining the amount of construction labor (craft types, crew sizes, number of labor hours) and indirects required for the EPC pricing effort. The costs within the ledger were then adjusted via escalation factors to account for expected future timing for procurement and specific construction activities. This approach was considered to be appropriate and effectively managed by FPL to conform the technical BOP scope and price for the FGPP.

As the FGPP design is still conceptual at this time for many of the BOP system requirements, prices for the following BOP components were defined and negotiated on a provisional basis: combined Unit 1/2 chimney, Unit 1 and 2 surface condensers, fuel/limestone/gypsum material handling, mechanical draft cooling tower, site work, and water supply and wastewater injection wells. Review of these provisional sums determined that such were

considered reasonable and representative of current market costs for the FGPP requirements, and that any future adjustments to these components to reflect final project design will have a nominal impact on the total Power Plant cost.

Q. How was the Construction Labor wage rate established within the FGPP estimate, and was such consistent with your experience?

A. Construction labor represents a significant portion of the overall EPC price, and consists of the labor wage rate multiplied by the number of hours expected to complete all tasks. The construction labor wage rate established for the West County project in mid-2006 was utilized as a starting point for wage rate calculation for the FGPP Power Plant cost. This wage rate was adjusted for current market conditions (e.g., fringe benefits component increase) and was then escalated to account for a later FGPP construction start in 2008. Due to uncertainty with respect to actual escalation that will be incurred, the general wage rate was agreed to be provisional and an index control standard was created to adjust the rates used in the EPC cost estimate for the impacts of unexpected labor availability or wage rate changes during project execution. Our experience from other projects has been that this indexing process is common in the current EPC market. FPL has proposed that the indexing mechanism included in Document WLY-2 attached to Mr. William Yeager's testimony be used.

Q. How was the overall price for Construction established within the FGPP estimate?

A. The overall Construction and Startup and Commissioning requirements for FGPP were established in a similar approach as was employed for BOP Equipment and Commodities. Use of a detailed estimate from the proxy project with adjustment to reflect the FGPP conceptual design and associated details furnished by major equipment manufacturers that provided a reasonable basis for definition of the overall labor required to construct and commission the FGPP. It is noted that the number of skilled trades hours established by BVZ to construct the FGPP are fixed and not subject to future adjustments. Direct and indirect labor man-hours for FGPP were reviewed and compared to similar statistics for multiple supercritical generating plants, and found to be reasonable for the green field site and productivity of the local construction labor market.

Q. Is the EPC Price for the FGPP consistent with those for other current major coal-fired power generating stations in the United States?

A. The overall EPC price offered for the FGPP project non-inclusive of major equipment including escalation to support 2013/2014 commercial dates was [redacted], or [redacted]/kW. Without escalation, the overnight EPC price for FGPP construction in December, 2006 was estimated to be [redacted]/kW. For reference the EPC price for the competitively bid proxy project used as the basis for the FGPP estimate was [redacted]/kW on a December, 2006 basis. Although project-specific differences can impact the correlation on a project-

to-project basis, the FGPP EPC price compares favorably with others proposed or currently under construction (overnight EPC pricing has typically been in the range of $1000/kW to $1,400/kW). Given the relatively larger size of the FGPP project and green field construction, the EPC price for the project was judged to be in-line with market and a reasonable estimate of the future cost of this project.

Q. Were commercial terms and conditions established governing the EPC portion of the FGPP, as such influence the EPC price?

A. Yes. The base EPC commercial terms and conditions used for the FGPP consisted of those from another recently executed contract between FPL and BVZ. Review of primary "risk" terms in the draft FGPP contract found such to be reasonably consistent with those used on the West County project. The required contractor security to be provided to FPL (combination of guarantees, letters of credit, and surety bonds) was found to be lower than we have seen on other coal-fired projects, but as other security is being provided by the major equipment manufacturers, our general conclusion was that the current market and EPC price basis for FGPP is reasonable and cost-competitive.

Q. Was the approach taken to establish commercial terms and conditions reasonable and appropriate with respect to influence on overall FGPP price and risks?

A. Yes. As previously stated, there is reasonable alignment between the commercial terms and conditions used on FGPP and those on other projects in

industry and such translated into equitable contingency within the EPC pricing offered by BVZ.

Q. What are your specific conclusions regarding the reasonableness of the commercial basis and EPC pricing established for the FGPP Project?

A. The process employed by FPL as a means of obtaining an accurate EPC price was based on working with an experienced EPC contractor on an "open book" basis to conform a recently developed, detailed EPC cost estimate from another project to the FGPP specific conceptual design. This allowed for detailed scope, current pricing, and commercial term definitions, with negotiations that resulted in an FGPP project-specific price development in a very active and challenged EPC market.

Through interviews and review of documents associated with the EPC basis for computation and assessment of the EPC scope, price and terms, our conclusion from comparison of the FGPP development to other projects is that the EPC price component of the FGPP Power Plant cost is reasonable and in-line with the current competitive market.

IV.3 POWER PLANT COST ESTIMATE – SUMMARY

Q. Please provide your conclusions regarding the reasonableness of the Power Plant Cost Estimate prepared for the FGPP and its correlation to cost at project completion.

A. As previously mentioned in this testimony, the two largest cost components under the Power Plant Cost are those for major equipment and EPC work. The contracting strategy employed by FPL in our view produced a very accurate estimate of these costs through competitive bidding and open book adjustment and negotiations of a recent detailed EPC cost basis from another project to match to the FGPP conceptual design. Early upfront definition of the plant conceptual design and thermal cycle by FPL was also crucial to this strategy. Our experience to date has indicated that there is strong correlation between a bottom-up cost estimate and actual costs. Understanding this correlation in turn allowed FPL to include what is viewed as a reasonable contingency against the Power Plant cost estimate (included in Owner's Costs). As a result, I have concluded that the Power Plant cost established and indices used to control several provisional items are reasonable and representative of current market conditions.

V. TRANSMISSION INTERCONNECTION COSTS

Q. What was the process used in developing the scope and details of the Transmission Interconnection and Integration configuration for the FGPP?

A. As illustrated in testimony provided by Mr. Coto, the FPL Power Delivery Projects and Engineering Group and Transmission Services and Planning Group were involved in the assessment of the interconnection and integration requirements for the FGPP project. We met with the FPL Power Delivery Group and received design and cost estimate data for review from which Mr. Coto's testimony was also based. The basis of the Transmission Interconnection and Integration design appeared to be very comprehensive and consistent with FPL standards regarding interconnection of the FGPP with the existing transmission grid. Issues such as overall grid stability, reliability, maintenance, minimization of electrical/system losses, post-project load flow on the grid, land and right-of-way constraints, existing grid limitations, avoidance of environmental impacts, and capital costs for new transmission facilities were stated to be factored in the selection of the most appropriate interconnection and integration plan. Cost information for the defined Transmission Interconnection and Integration (hereinafter referred to as "Interconnection") were based on conventional FPL estimating methods. A summary of these costs was included in the testimony provided by Mr. Coto.

As a result, no significant changes to the plan, as reviewed, are anticipated that would significantly alter the FPL cost estimate.

Q. How were capital costs estimated for the Electrical Interconnection, and what importance did capital costs have on route selection and configuration?

A. FPL utilized a "bottom-up" estimating process to determine project costs associated with the Transmission Interconnection between the FGPP generator step-up transformers and existing grid. This estimating process principally utilized budgetary equipment and labor quotes, as well as FPL's in-house data base of labor and material unit costs, and was based on a conceptual design of overhead 500 kV circuits and supporting structures, in accordance with the National Electric Safety Code (NESC) and other corporate and industry standards. Equipment (e.g., transformers, circuit breakers, switches, insulators) costs were stated to be established from vendor quotes and FPL's database that we understand are maintained from current and historic construction efforts. Similarly, the unit costs for 500 kV and 230 kV conductors, supporting structures, and other commodities were also obtained from budgetary vendor quotes and in-house historical data.

Capital costs were an important factor in defining the voltage class, routing requirements (e.g., circuit and structure types and land/easement needs), and interconnection to the existing grid. However, other factors including system

reliability appeared to have equal or greater weighting as further addressed in Mr. Sanchez's testimony.

Q. Is the capital cost estimate for the Interconnection reasonable in the current marketplace?

A. Yes. The FPL Power Delivery Group's initial capital cost estimate was based on current industry standard practices and costs for construction metrics common in the transmission and distribution field. The capital cost estimate was then factored using historically derived escalation factors for both equipment and material based on the timing of when such materials would be purchased and labor would be expended. Given the remote FGPP site location, early installation of at least one of the 500 kV circuits from the existing grid to FGPP substation is needed to provide power to support FGPP testing prior to commercial operations.

We independently verified the costs estimated for various components of the Transmission Interconnection system (with the exception of land and right-of-way costs) using in-house methods and conceptual design basis. We found that the costs established by FPL were representative of overhead circuit installation costs. On a cost per lineal mile basis, the 500 kV circuit segments of the conceptual Interconnection design fell within our typical metrics without considering land and right-of-way costs. The costs included for intermediary substations, based on conceptual design, were also found to be reasonable.

Q. What are your specific conclusions regarding the reasonableness of FGPP Transmission Interconnection Costs?

A. Our review of the equipment and construction costs estimated for FPL's Transmission Interconnection found such to be reasonable and consistent with industry metrics in today's marketplace. FPL applied escalation factors to present-day capital cost estimates for materials and labor that are consistent with published industry rates, using anticipated material purchase dates and construction timeline per the overall project schedule, as a means of arriving at a final cost estimate for the Interconnection work. The testimony provided by Mr. Coto provides further insight on the costs associated with the Interconnection.

VI. OWNER'S COSTS

Q. What are "Owner's Costs", and how were the Owner's Costs for FGPP established?

A. Owner's Costs on a new power generation project typically include the following components: land acquisition (green field projects); project development costs (e.g., technology development, environmental permitting); utility interconnections (e.g., water, wastewater); spare parts and non-capital equipment (e.g., rail cars, plant furnishings); Owner's project management and operating staff salaries; plant startup and commissioning support (e.g., training, fuel purchase); professional services costs (e.g., legal and tax

advice); Owner's overall contingency; and, financing costs (e.g., AFUDC, credit facility administration).

The Owner's Costs for the FGPP were developed and estimated by the FPL project team, based on significant experience with power generation plant development and construction in the state of Florida. Certain Owner costs, such as simple utility connections, land acquisition, and environmental permit application fees, seem to be established with reasonable certainty based on FPL current work and previous experience. Other Owner's costs, including AFUDC, spare parts, training, and staff costs, were computed based on developed project cash flows, and expected spare parts and staffing requirements specific to FGPP. The last category of Owner's Costs, including fees and costs for utility needs during construction and professional services fees we understand were estimated from similar needs on historical projects and have limited impact to the overall Owner's Cost component.

As indicated in Mr. Yeager's testimony, Owner's costs associated with Power Plant and Transmission Interconnection and Integration were included with their respective direct costs. Costs for Power Plant and Transmission line Land and AFUDC were separately listed.

Q. How was AFUDC computed on the FGPP project and, based on other similar projects, are such AFUDC cost estimates for FGPP reasonable?

A. We reviewed the computation basis for AFUDC values reported in Mr. Yeager's testimony and compared such to AFUDC calculations for other similar projects. This comparison yielded strong correlation between the accrual of AFUDC over the construction phase of a typical coal generation project. The AFUDC value for Unit 1 was significantly affected by the early upfront costs for land acquisition (green field development) and down payments to secure major equipment; the AFUDC value for Unit 2 was principally affected by the extended project schedule from joint award for major equipment with Unit 1 equipment and the EPC contractor's initial fees. My general conclusion from this review was that accurate unit-based AFUDC costs were calculated by FPL for the FGPP in accordance with the anticipated cash flows from project approval through commercial unit operations.

Q. What level of contingency is included in the FGPP cost estimate, and is such comparable to that seen on other active coal fired power generation projects?

A. The owner contingency included by FPL against the total FGPP project is on the order of 9%. While 5-7% is more typical of owner contingencies applied on other active coal-fired generation projects, based on the provisional sums being carried in the Power Plant cost and schedule uncertainties, this amount of contingency was viewed to be reasonable in the current marketplace given the complexity of this project.

Q. What are your specific conclusions regarding the reasonableness of FGPP Owner's Costs, particularly with respect to AFUDC?

A. We reviewed FPL's development of Owner's Costs for the FGPP project, as documented in specific Power Plant and Transmission Interconnection costs and in total, as furnished by FPL. We also conducted several interviews to confirm the process used in quantification of these costs. Subsequently, we compared the magnitude of these costs including contingency and AFUDC to those budgeted for several other major coal-fired generating plants. On the basis of this comparative review, I have concluded that the process used for developing Owner's Cost and their magnitude within the total FGPP project cost estimate are reasonable and comparable in industry for other complex generating station projects.

VII. CONCLUSIONS

Q. Please summarize your testimony.

A. As independent engineers, we completed a review of the estimated FGPP project costs to determine whether such costs were reasonable in magnitude, comparable to market conditions, and consistent with industry estimating practices. This review included comparison of FGPP Owner's and Power Plant Cost components to those of other active projects of similar configuration, checking FPL's Transmission Interconnection cost build-up, and assessed FPL's cash flow model used to compute AFUDC costs.

Through these reviews, a conclusion was drawn that the FGPP costs listed in Mr. William Yeager's testimony are reasonable and competitive in today's marketplace.

As pointed out in Mr. Yeager's testimony, the FGPP is a complex project and a number of external factors could produce delays to the project schedule and unit in-service dates. The FGPP project cost was established on the basis of 2013 and 2014 in-service dates.

Q. Does this conclude your direct testimony?

A. Yes.