ORIGINAL

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Sent: Thursday, January 25, 2007 2:44 PM

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Subject: Sierra Post Statement and Brief

Attachments: Sierra Post hearing brief.doc

Hi all,
Enclosed please find the Post hearing Statement and Brief of Sierra Club, Inc., John Hedrick, Brian Lupiani, Rebecca Armstrong and Anthony Viegbesie.

Regards,
Leon Jacobs

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MOSES WILIAMS, ESQ. E. LEON JACOBS, JR., ESQ.

January 25, 2007

Blanca Bayo
Director, Office of the Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Blvd
Tallahassee, Florida 32399-0850

RE: Docket No. 060635-EU,
Petition for determination of need for Electrical power plant in Taylor County
By Florida Municipal Power Agency, JEA, Reedy Creek Improvement District, and City of Tallahassee.

Dear Ms. Bayo:

On behalf of the Sierra Club, Inc., John Hedrick, Rebecca J. Armstrong, Bruce Lupiani, and Anthony Viegbesie, I have enclosed the Post hearing Statement and Brief. I thank you for your attention to this matter.

Sincerely,

/s/ *E. Leon Jacobs, Jr.*

E. Leon Jacobs, Jr.
Attorney for The Sierra Club, John Hedrick, Rebecca J. Armstrong, Brian Lupiani and Anthony Viegbesie

Enclosures

ORIGINAL

BEFORE THE PUBLIC SERVICE COMMISSION

In re: Petition for determination of need for Electrical power plant in Taylor County by Florida Municipal Power Agency, JEA, Reedy Creek Improvement District, and City of Tallahassee.	))))))	DOCKET NO.: 060635 EU DATED: January 25, 2007

THE SIERRA CLUB, INC., JOHN HEDRICK, REBECCA J. ARMSTRONG, BRIAN LUPIANI AND ANTHONY VIEGBESIE

POST HEARING STATEMENT AND BRIEF

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Pursuant to Order No. PSC-07-0016-PHO-EU, issued on January 5, 2007, establishing the prehearing and posthearing procedure in this docket, the Sierra Club, Inc., John Hedrick, Rebecca J. Armstrong, Brian Lupiani and Anthony Viegbesie (Sierra) hereby file their Post Hearing Statement and Brief.

STATEMENT OF BASIC POSITION

The Participants have not submitted adequate data upon which the Florida Public Service Commission ("Commission") can base its decision as to whether the proposed addition of the super-critical pulverized coal plant at the Taylor Energy Center (hereinafter "TEC") is the most cost effective alternative available to the Participants. The glaring absence of a probing analysis of the increased capital construction costs, of infrastructure costs needed for the plant expansion, of projected O&M expenses, and of energy efficiency and demand-side management measures by the Participants, represent fundamental flaws to the petition.

The record clearly recognizes a host of uncertainties and risks in building this new coal plant which directly affect its cost. Yet the analysis by the Participants, completed at their convenience over a number of months using proprietary models, undertakes a flawed assessment of these risks, and reaches an unfounded conclusion that they are acceptable. This conclusion carries with it exceptionally large, often open-ended additional costs for the project.

The chief example of this approach can be seen in the Participants' response to the prospective regulation of carbon emissions for coal plants. In the face of clear evidence that owners of coal plants will be taxed for carbon emissions in the short term, the Participants' assumptions for TEC anticipate no such regulation. Projected O&M costs for TEC do not presently allow for these costs. Participants' efforts to assess the impact of carbon regulation

through sensitivity analyses are inherently flawed because their assumptions take an excessively narrow view of the level of taxes that will be imposed, and the ancillary market impacts.

Contrary to this liberal perspective regarding basic economic assumptions, Participants take an overtly conservative approach to their requirement to assess demand-side resources to mitigate the need for TEC energy. With the notable exception of the City of Tallahassee, the petition fails to demonstrate that the Participants have conducted a minimal, and certainly not a reasonable assessment of the cost effectiveness of conservation, energy efficiency and demand-side management (DSM) resources that would mitigate their capacity needs. The petition reaches the conclusion that no such resources are available.

Thus, the Commission should deny this petition because the need for this plant has not been demonstrated. Alternatively, the Commission can only consider this petition with a true and accurate definition of the costs this facility will impose, and a true and accurate analysis of cost effective alternatives.

STATEMENT OF ISSUES AND POSITIONS

ISSUE 1: Is there a need for the proposed Taylor Energy Center (TEC) generating unit, taking into account the need for electric system reliability and integrity, as this criterion is used in Section 403.519, Florida Statutes?

POSITION: No. While the individual Participants do evidence demand growth and the need for additional capacity, they have elected to meet their needs by the addition of a large, base-load, coal-fired plant which brings with it substantial economic and operational risk. The application fails to demonstrate adequate measures to manage this risk over the life of the proposed plant addition, instead asserting that super-critical pulverized coal plants generically manage the risk of volatility in global fossil fuel markets.

The City of Tallahassee has benefited from expert advice which demonstrates that with the implementation of a well-managed portfolio of energy resources, it can reliably serve its growth in energy needs without the risk and cost of TEC.

Additionally, FMPA is dramatically affected by transmission constraints in Florida in serving its dispersed members. The addition of TEC will require FMPA to take energy from North Florida and distribute to several of its members in Central Florida and South Florida, thereby increasing its operating costs, and complicating its ability to meet growth in demand reliably.

ISSUE 2: Is there a need for the proposed TEC generating unit, taking into account the need for adequate electricity at a reasonable cost, as this criterion is used in Section 403.519, Florida Statutes?

POSITION: No. Section 403.519, Florida Statutes, clearly discusses the physical need for capacity in the context of cost effectiveness. Each of the Participants is electing to invest in a large, base-load coal-fired plant essentially as an economic hedge in volatile fossil fuel markets. These Participants are presently facing the reality of escalating capital costs, of uncertain operating and maintenance costs, and of shifting financing costs. Until the full impact of these cost increases are known, the Participants cannot understand if they are reasonable, or if there are reasonable alternatives.

The Participants have grossly miscalculated the risk of adverse economic impact caused by shifts in air qualify regulation for coal-fired electric power plants. The Participants, with one noteworthy exception, apparently intend to forego this important opportunity to implement demand-side alternatives to address growth in demand, and to insulate themselves from the risk of more stringent air quality regulation.

ISSUE 3: Is there a need for the proposed TEC generating unit, taking into account the need for fuel diversity and supply reliability, as this criterion is used in Section 403.519, Florida Statutes?

POSITION: Sierra notes that there is a need for a formal definition of the term "fuel diversity" as used in Section 403.519, Florida Statutes. It is acknowledged that cost effective fuel diversity has value in the state's current generation mix. However, cost effective fuel diversity would be better served by an appropriate portfolio of energy efficiency measures, conservation, demand-side management (DSM) and renewables.

ISSUE 4: Are there any energy efficiency measures, conservation measures or DSM measures taken by or reasonably available to the Florida Municipal Power Agency, JEA, Reedy Creek Improvement District, and City of Tallahassee (Participants) which might mitigate the need for the proposed TEC generating unit?

POSITION: Yes. The Participants generally have undervalued the economic benefits of energy efficiency, conservation and DSM opportunities, especially when it is considered that these directives insulate them from the risk of more stringent air quality regulation.

ISSUE 5: Have the Participants appropriately evaluated the cost of CO2 emission mitigation costs in their economic analyses?

POSITION: No. In the face of existing best practices, of standing carbon trading markets and clear public policy initiatives, the sensitivity analyses submitted by Participants consistently underestimate the costs that would be incurred to operate TEC in the more stringent air quality regulatory structure that will certainly be in place before TEC becomes operational.

ISSUE 6: Does the proposed TEC generating unit include the costs for the environmental controls necessary to meet current state and federal environmental requirements, requirements including mercury (Hg), NO_2, SO_2 and particulate emissions?

POSITION: No.

ISSUE 7: Have the Participants requested available funding from DOE to construct an IGCC unit or other cleaner coal technology?

POSITION: No.

ISSUE 8: Has each Participant secured final approval of its respective governing body for the construction of the proposed TEC generating unit?

POSITION: No. All Participants have the contractual right to withdraw once all permitting has been secured necessary to construct the TEC generating unit and the final construction costs are known. At this time the Participants predict that this "go or no go" vote will occur in 2008.

ISSUE 9: Is the proposed TEC generating unit the most cost effective alternative available, as this criterion is used in Section 403.519, Florida Statutes?

POSITION: No. In the present market for electricity, the Participants could effectively meet their needs using cost effective alternatives to diversify away from fossil fuels until these markets demonstrate a period of stability. Economic and technological advances surrounding demand-side management measures, including energy efficiency and conservation measures, along with renewables, present Participants

with an excellent opportunity to manage the cost of their capacity needs in this period.

ISSUE 10: Based on the resolution of the foregoing issues, should the Commission grant the Participants' petition to determine the need for the proposed TEC generating unit?

POSITION: No.

ISSUE 11: Should this docket be closed?

POSITION: This docket should be closed when the Commission has issued its final order and all motions for reconsideration have been disposed of.

BEFORE THE PUBLIC SERVICE COMMISSION

In re: Petition for determination of need for Electrical power plant in Taylor County by Florida Municipal Power Agency, JEA, Reedy Creek Improvement District, and City of Tallahassee.	)	DOCKET NO.: 060635 EU FILED: January 24, 2007

BRIEF OF
THE SIERRA CLUB, INC., JOHN HEDRICK, REBECCA J. ARMSTRONG, BRIAN LUPIANI AND ANTHONY VIEGBESIE

I. INTRODUCTION

The proceeding was commenced when a group of governmental organizations consisting of the Jacksonville Electric Authority (JEA), the City of Tallahassee, the Reedy Creek Improvement District (RCID), and the Florida Municipal Power Agency (FMPA), filed a Petition for a Determination of Need on or about September 19, 2006, to establish the proposed Taylor Energy Center (TEC") on a 3,000 acre site in Taylor County, Florida. Rebecca J. Armstrong petitioned to intervene on October __, 2006, and was granted intervene status by Order No. . The Sierra Club, Inc., John Hedrick and Brian Lupiani petitioned to intervene on October , 2006, which was granted by Order No. . Anthony Viegbesie petitioned to intervene, and was granted by Order No. .

At trial, the Commission received significant, and overwhelming public testimony in opposition to the construction of TEC. There was compelling testimony on alternative energy resources which would mitigate the Participants' need for TEC power through energy efficiency and demand reduction strategies. There was additional public testimony on the prospects of

alternative generating technology that removes carbon from the generating plant emissions, and thereby insulate the Participants from the risk of taxes for carbon.

Participants presented eighteen (18) expert witnesses in support of their petition. Intervenors presented five (5) witnesses. After this extensive display of evidence, the record in these proceedings does not establish, as Participants propose, that the evolving supercritical, pulverized coal technology is either established or reliable. The record also does not establish that the full capital costs to build the TEC are documented. And, the record does not establish that the TEC will be the most cost effective power option for Participants when carbon taxes are imposed.

The record does establish that Participants failed to provide the Commission with any reasonable inputs or analysis to meet its requirement under section 403.519, Fla. Stat., with regard to conservation, energy efficiency and DSM. The Commission is required to consider "conservation measures *taken or reasonably available to the applicant or its members* which might mitigate the need for the proposed plant..." [emphasis added] With the noteworthy exception of the City of Tallahassee, Participants engaged in a superficial analysis of resources that was not congruent to mitigating the need for TEC power. The record of this proceedings demonstrates that, with the exception of Tallahassee, Participants have scarce credible evidence of what conservation, energy efficiency or DSM resources are actually being implemented by them or their members. These same Participants then boldly suggest that the Commission accept this incomprehensibly low standard in assessing whether conservation measures are reasonably available to mitigate their need for TEC power. Tallahassee's results indict the approach of the other Participants, and compels the Commission to reject their analysis. For each of the reasons above, the petition for need should be denied.

II.
FACTS

The Taylor Energy Center will be a supercritical, pulverized coal electric generating plant, with a planned net capacity of 765 MW, scheduled to begin operation in May, 2012. The Participants' share of the plant will be allocated as follows: (i) the Florida Municipal Power Agency (38.9%); (ii) Reedy Creek Improvement District (9.3%) (iii) Jacksonville Electric Authority (31.5%); and (iv) City of Tallahassee (20.2%). ***[cite]***

As the petition for need states:

> "Participants are developing the proposed TEC to realize the benefits associated with the economies of scale inherent in constructing such a large power plant...."

[cite petition for need, pp. 14, pg 10]

Additionally the petition states:

> "The use of a supercritical coal boiler, as a demonstrated technology, minimizes risk to the Participants' customers and allows the Participants to achieve economies of scale inherent to larger generating units."

[cite petition for need at pp. 28(e)], pg 15]

In addition, the Participants assert that TEC will offer fuel and geographic diversity to each of their operations.

- ***need for TEC***

The need for TEC is allocated among the Participants as follows: (i) FMPA will need 230 MW in the summer of 2012 and will receive 297.8 MW from TEC; (ii) JEA's projected need is 187 MW in the winter of 2012/2013 and will receive 230.9 MW from TEC; (iii) RCID's projected need is 134 MW in 2011 and will receive 69.7 MW from TEC; (iv) City of Tallahassee's projected need in 2011 is 22 MW and will receive 155.4 MW from TEC. Still, Participants

assert that Tallahassee will experience reliability concerns in 2012 if TEC is not built [cite petition for need, pp. 42, pg.. 21]. At, indicated above, Tallahassee through their planning has deferred their need for TEC power until 2016

Participants assert that key factors in TEC's ability to offer economic and strategic advantages will be the supercritical, pulverized coal technology, along with its ability to use a wide variety of coals, and to burn a mixture of up to 30 percent petcoke along with that coal.

The estimated total cost to build TEC was initially stated as $1,713,399,000. As a result of market instability in costs to build coal plants, and scope changes for TEC, Participants revised the projected cost to $2,039,074,000, an increase of 19 percent.

ARGUMENTS

III.
THE PETITION FAILS TO DEMONSTRATE THAT TEC IS THE MOST RELIABLE OR COST-EFFECTIVE ALTERNATIVE AVAILABLE TO PARTICIPANTS.

Issues 1 – I s there a need for TEC for system reliability and integrity
Issue 2 – Is there a need for TEC as the most cost-effective energy
Issue 3 – Is there a need for TEC to achieve fuel diversity
Issue 8 – Have all Participants agreed to build TEC
Issue 9 – Is TEC the most cost effective option

The Florida Public Service Commission ("FPSC" or "Commission") operates in this proceeding under express authority found in section 403.519, Florida Statutes. The Commission has implemented this statutory authority in a series of administrative rules, most specifically Rules 25-22.080, 25-22.081 and 25-22.082, Florida Administrative Code ("FAC"). Under section 403.519, the Commission must address all issues relating to system reliability and integrity, reasonableness of electricity costs, fuel diversity, fuel supply reliability, and the cost effectiveness of alternative energy resources which would mitigate the electric demand Participants need from TEC. The statute makes it clear that no one of these factors can be

viewed in isolation, however the prevailing filter is cost effectiveness. Rule 25-22.082, FAC implements the Commission's authority to assess the cost effectiveness of the proposed plant and the cost effectiveness of alternative means of addressing the demand.

This case represents another in the Commission's recent review of new coal generating technologies to address the state's growing energy demands. This spurt of applications for supercritical pulverized coal plants follows a lull in deploying new coal plants in Florida lasting almost forty (40) years. In the face of volatile commodity prices of natural gas, electric utilities in Florida, and around the globe, are looking once at coal technologies as a basic generation source.

The Commission has traditionally exercised broad discretion in its deliberations relative to need determinations, often in a dynamic fashion, in order to ensure that a confirmed need is served in the most cost-effective way.[1] This docket requires the Commission to assess and balance a wide range of risks associated with building coal plants in a dynamic economic and political environment. These risks are balanced against the strategic and economic advantages that might come from reducing the state's reliance on natural gas. This must be done while

[1] In re Petition for Determination of Need for the Osprey Energy Center in Polk County by Seminole Electric Cooperative and Calpine Construction Finance Company, L.P., 01 F.P.S.C. 2:443, 446 (2001) (PSC certified a 529-megawatt combined cycle exempt wholesale generation plant in 2003 when only 350 megawatts was contractually committed to provide 88 megawatts of the retail needs of Seminole Electric Cooperative in 2004); In re Petition to Determine Need for Proposed Electrical Power Plant in St. Marks, Wakulla County, by City of Tallahassee, No. 961512EM (June 9, 1997) (order no. PSC-97-0659-FOF-EM) (explaining that the PSC has previously recognized that "it is not unusual for a utility to grow into the capacity of a large generating unit"); In re Petition to Determine Need for Proposed Capital Expansion Project of the Dade County Resources Recovery Facility, an Existing Solid Waste Facility, by Metropolitan Dade County, 93 F.P.S.C. 11:375, 381 (1993) ("Although the expanded facility will not contribute to the reliability and integrity of the state's electric system, the energy is cost-effective and will displace fossil fuels."); In re JEA/FPL's Application of Need for St. John's River Power Park Units 1 and 2 and Related Facilities, 81 F.P.S.C. 6:220, 221-22 (1981) ("We construe the 'need for power' issue to encompass several aspects of need . . . the electrical need for additional capacity . . . the economic need of providing this bulk power and energy at the lowest possible cost . . . the socioeconomic need of reducing the consumption of imported oil in the State . . . ."); In re Petition for Certification of Need for Orlando Utilities Commission, Curtis H. Stanton Energy Center Unit 1, and Related Facilities, 81 F.P.S.C. 10:18 (1981) (PSC approved 415-megawatt coal plant that was not needed for reliability purposes by any utility involved in the application until 1991, which was five years after the in-service date of the plant).

critical assumptions and variables change. These variables require utilities and regulators to conduct a realistic and inclusive analysis of the costs, attributes and risks associated with the various energy resources. [TR. 541-45, Byrk Direct Testimony, ppg. 4-5] The fixed and variable costs associated with prospective resources must also be assessed over the lifetime of the resource in order to ensure that all competing resources are evaluated on a level playing field.

Given present economic and politic dynamics, the Commission should ensure that no coal plant is built unless its full, long-term costs are planned for, and shown to be cost effective against other competing resources. *In re: Petition for determination of need for electrical power plant (Amelia Island Cogeneration Facility) by Nassau Power Corporation,* 92 FPSC 2:814, 816 (1992). The record in this proceeding does not present the Commission with adequate evidence to do so.

Participants in this proceeding have biased their analysis to favor the supercritical, pulverized coal option by failing to adequately address the long-term costs and risks imposed by the proposed TEC, as demonstrated in the following facts:

(i) *TEC represents a new generation of supercritical, pulverized coal plants, the operational characteristics of which are not proven by Participants.* Participants characterize supercritical, pulverized coal plants as a stable and reliable generating resource. The basis for this claim seems to be the operation of the prior generation subcritical pulverized plants, since Messers Rollins, Hoornert and Klausner could not testify of any experience or awareness of supercritical pulverized coal plants of this new design being deployed recently in the US. [TR 357-60, 838-9, 1097] Participants offer no analysis of operational issues and risks that the emergence of

supercritical, pulverized coal plants might pose, yet place much emphasis on these issues as they relate to emerging coal gasification and nuclear technologies. Additionally, much emphasis is placed on the unique design of the technology adopted at TEC to allow it to burn multiple grades of coal, again with no proof of the reliability of this technology.

(ii) *Projected costs to build TEC are in flux and not final.* Participants reported a 19 percent escalation in the capital costs to build TEC since the filing in September, 2006. Participants conducted sensitivity analysis in this docket which showed TEC to be a cost-effective alternative in a range of up to 20 percent above the originally projected costs. These sensitivity tests have not been performed for the new capital costs. [TR 766] Thus, the Commission has evidence to show that the TEC is cost-effective so long as its capital costs do not increase more than 1 percent above present projections. Witness Hoornert testified in his deposition that the present revised costs represent the final increase for TEC costs. [Ex. 2] However, at trial Mr. Hoornert acknowledged that a pattern is developing around the country in which capital costs to build pulverized coal plants are rising quickly. [TR. 837-9] Duke Energy, Carolinas, in reporting a significant capital cost increase for a proposed coal plant to the North Carolina Utilities Commission, explained that the pattern is due largely to the increased construction of pulverized plants around the country. Witness Hoornert expressed an opinion that TEC is clearly distinct from the circumstances affecting similarly situated coal plant proposals around the nation. Mr. Hoornert's conclusion is not

supported by the record in proceedings, his own testimony demonstrates that capital labor costs, and other hard capital costs were the key components of the increases to TEC's total costs. There is no demonstration that TEC is insulated from the market forces which are driving capital costs for pulverized plants higher. Even if Participants conducted another sensitivity study to assess an additional 20 percent increase, there are no guarantees of the final costs that will guide the construction of TEC.

(iii) *Participants' assessment of risks have irrationally established TEC as a strategy for fuel diversity.* Mr. Fetter testified that the key economic emphasis in building TEC is to replace natural gas generation with coal and achieve fuel diversity [TR. 636-9, 834] Mr. Rollins rationalized that it was acceptable to place a high emphasis on replacing natural gas because there is actual experience with high natural gas commodity prices. [TR 1245-57, Rollins Revised Rebuttal Testimony, pg. 3] Participants recognize in their fuel projections that commodity prices for natural gas prices are trending downward [Exhs 37, 38, and 40], yet offer no analysis of the impact of this trend on TEC's ability to achieve cost-effective fuel diversity. By contrast, Mr. Preston testified that the present commodity prices for coal are at historically high levels. [TR. 993-1015, Preston Direct Testimony, pg 11] Witness Heller further indicated that fuel transportation costs for coal are also escalating. [TR. 579-586, Heller Direct Testimony, pgs. 5-6] Participants acknowledged that the coal markets are responding to issues global in scope. [TR 1048-51] Participants identified additional

infrastructure and logistical issues which must be resolved to ensure timely delivery of coal to TEC after paying the market price. [TR.] In the context of these conditions, Participants offer final opinions, with little supporting evidence, that the coal market trends are of short duration, and coal prices will stabilize. [TR. 993-1015, Preston Direct, pgs. 12-13] The record in his case demonstrates that Participants conducted a high fuel sensitivity analysis as the only assessment of risks related to uncertainty in the commodity markets for coal. [TR , Meyer] In the face of this actual experience with high coal prices and disruptions in coal delivery, Participants' sensitivity analyses included inputs and assumptions which did not truly reflect market conditions affecting costs to deliver coal to the TEC site, some of which are still unknown, in favor of inputs and assumptions that reflect Participants' opinions on market trends. Based on those inputs, Participants reached the conclusion that TEC is the most cost effective fuel diversity alternative for every Participant. In fact, Witness Fetter indicates that the decision on fuel diversity should be made primarily based on generation mix, with little consideration for price volatility among competing fuels. [TR. 636-9] Thus, Participants have decided to diversity to coal, regardless of the market trends, and simply pay what the market charges. The record further indicates that transportation contracts for rail delivery, and planning for the scope of rail infrastructure upgrades necessary to deliver coal to the TEC site have not been completed. [Ex. 2, Applicants' Response Staff's Second Set of Interrogatories, TR. 957-69, Meyer Direct Testimony, pg. 8, 971-2] These

are critical aspects of the operation of TEC, and the Commission cannot approve the project until they are finalized, *In re: Petition for determination of need for electrical power plant (Amelia Island Cogeneration Facility) by Nassau Power Corporation,* 92 FPSC 2:814, 816 (1992). Even in a stable market, the Commission must be provided with evidence that fuel diversity will be accomplished in a cost effective manner. Witness Klausner testified that as other utilities around the country face these challenges, they are reconsidering their decision to build coal plants. [TR. 1099] The Commission should require Participants to demonstrate that they are insulating themselves as fully as possible from volatility in all generation fuels. Absent such proof in the existing market volatility for energy, the Commission should not approve TEC as a cost effective alternative to achieve fuel diversity. When the prospect of future regulation of CO2 is considered, conclusions on diversifying exclusively to coal become particularly suspect.

(iv) *Participants distort and minimize risks of building a baseload coal plant.*

- While Participants have demonstrated a need for additional capacity, their analysis of the cost effectiveness of TEC as the only option is severely biased to favor this large, baseload coal plant. The petition for need clearly states that Participants' objective for TEC is to develop economies of scale in building a large unit. Yet, none of the Participants is fully committed to taking power from TEC. [Ex. 2, Phase II-B Development Agreement at p. 62] The record reflects that only after all permits have been issued will the Participants

make the final decision on their participation in TEC. [TR. 425] Any party might drop out, which immediately raises reliability issues for that party. Most importantly, the project can proceed, even if parties drop out, which means that their share of power from TEC is no longer committed. [TR. 425-6] The present energy marketplace in Florida, as Messers May, Gilbert, Guarriello and Brinkworth confirmed, suffers from a scarcity in baseload capacity on the wholesale market. [TR. 426-8, 490-9, 679-81, 766-7, 723-4] These circumstances create an incentive for the Participants to continue development of the TEC if parties drop out, since the capacity formerly committed to that Participant would be sold in the wholesale market, where it will command a premium. Should this scenario develop, it essentially converts the TEC, at least in part, to an independent wholesale generator. The Commission has consistently held that need should not be certified for a generic statewide need as proposed by independent wholesale generator, rather than a specific utility need, *In re: Petition for determination of need for electrical power plant (Amelia Island Cogeneration Facility) by Nassau Power Corporation,* 92 FPSC 2:814, 827 (1992), *In re Petition of Nassau Power Corporation to determine need for electrical power plant (Okeechobee County Cogeneration Facility); In re: Petition of Ark Energy, Inc., and CSW Development-1, Inc., for determination of need for electric power plant to be located in Okeechobee County, Florida; Petition of Ark Energy, Inc., and CSW Development-1, Inc., for approval of contract for the sale of capacity and energy to Florida Power & Light; Petition of Nassau Power Corporation*

for approval of contract for the sale of capacity and energy to Florida Power & Light, 92 FPSC 10:643 (1992).

- Participants' assessment of risks as described above in sections III(i) and III(ii), as well as their assessment of the risk of CO2 regulation discussed below, significantly bias their analysis to favor building this large baseload coal plant.
- Participants have further sought to minimize the impact that TEC will have on the transmission grid. The record reflects that if TEC is built it will require a $135 million upgrade to the transmission grid. [Exh. 2, Applicants Response to Staff POD 4 , TR. 774-777] Witnesses May, Gilbert and Hoornert each sought to downplay this issue by demonstrating that the transmission owners will finance this expansion, which, in their opinion mutes its impact on the cost-effectiveness of TEC. [TR. 520-22, 695-6, 841-2] The facts of this case make it clear that this transmission upgrade is required as a direct result of placing this large, baseload plant on the grid, and thus should be analyzed as to its cost-effectiveness to the project, *In re: Petition for determination of need for electrical power plant (Amelia Island Cogeneration Facility) by Nassau Power Corporation,* 92 FPSC 2:814, 823 (1992). Participants did no such analysis. The view espoused in the petition and by witnesses has the result of shifting the economic analysis to favor the large baseload plant.
- Participants have also minimized the importance of public policy created by the Florida Legislature which places emphasis and financial incentives on environmentally friendly generating options. See Chapter 2006-280, Laws of

Florida. By opting for a large baseload coal plant, Participants defer and substantially minimize the prospects of alternative sources of supply or demand options, discussed more fully below, which would be more consistent with this public policy. As the public debate over global warming evolves, it is evident that public policy responses to global warming are taking direct focus on coal plants. [TR 853] This, in turn introduces substantial risk for electric utilities in planning for new coal capacity additions. [TR. 541-45, Byrk Direct Testimony, pg. 8] A telling result of this transition is volatility in the technology and economics associated with building coal plants.

Fortunately, the facts of this case do present the Commission with an excellent example of a strategic approach to address the challenges the Commission faces in this proceeding. The City of Tallahassee conducted a thoughtful, in-depth analysis of its energy needs in the context of the present risk environment. Tallahassee elected to adopt a practical portfolio which more centrally integrates DSM with other energy resources, to diminish, or mitigate its immediate need for power. The record in this docket demonstrates that Tallahassee will reap extensive economic benefits from this strategy. [TR 771-3] Most important however, Tallahassee will achieve the most extensive diversification of any Participant. The record further demonstrates that Tallahassee's portfolio allowed it to defer its need for power until 2016. This is yet another advantage since it allows the city to more fully assess the consequences of air quality regulations and then make a decision on best available control technology should it need to expand its supply options. This approach contrasts with the approach of the remaining Participants which is to move headlong with the building of a large, baseload pulverized coal plant, and then respond to

any regulatory issues by retrofitting the plant, purchasing allowances at market prices, or shutting down the plant. [TR. 832-33] This takes the state in a highly risky direction, one absolutely contrary to the Legislature's stated public policy. The City of Tallahassee has elected to forego its option to delay choosing a supply option until the regulatory environment is known, and has committed to the TEC for its needs in 2016. Thus, Tallahassee will share in the costs of retrofitting the plant which could be avoided.

IV.
PARTICIPANTS FAILED TO PROVIDE REASONABLE AND COMPETENT EVIDENCE ON WHETHER CONSERVATION MEASURES WERE TAKEN OR ARE REASONABLY AVAILABLE TO MITIGATE THEIR NEED FOR POWER FROM TEC

Issue 4 – Are there conservation, efficiency or DSM measures taken or reasonably available to Participants

Issue 9 – Is TEC the most cost effective option

Participants failed to provide the Commission with competent and substantial evidence to allow a decision under the provisions in section 403.519, Fla. Stat., that the Commission consider "conservation measures *taken or reasonably available to the applicant or its members* which might mitigate the need for the proposed plant..." [emphasis added]

Three of the four Participants conducted independent screening of conservation, efficiency and DSM for purposes of section 403.519. Of these, the City of Tallahassee conducted a much different, more extensive internal integrated resource planning (IRP) process regarding its overall participation in TEC than its partners, which included a discreet analysis of conservation, efficiency and DSM. Under its "meta analysis" of DSM, Tallahassee's goal was to achieve maximum cost effectiveness through an integrated mix of resources. [TR. 766] Tallahassee identified a broad universe of potential resources, and them screened them according to their true impact on system operations and costs. Tallahassee conducted a wholistic analysis

by looking at the levelized costs of the candidate DSM measures over their lifetime, and then comparing those to similar levelized costs of a comparable, like-use supply side resource, over the same life cycle. [TR. 766] This equated to a measurement of the levelized cost of energy savings for Tallahassee. The candidate resources were specifically targeted for customer classes and energy usage germane to Tallahassee's load shape, which were direct inputs into the IRP analysis. These targeted bundles of DSM resources were then analyzed for their impact on production costs. Because of this more wholistic approach, Tallahassee was able to identify an extensive range of DSM measures to fit its load shape, resulting in substantial reductions in production costs.

Witness Kuchner, on behalf of the JEA and FMPA, used the Florida Integrated Resource Evaluator ("FIRE") to evaluate and screen candidate DSM resources. [TR. 1170] RCID's consideration of DSM for purposes of TEC seems to have been largely delegated to the customers of RCID, however, the results of that analysis are unclear. [TR. 1170-2] The FIRE model uses benchmarks associated with a proposed supply side facility, in this case, the plant proposed for TEC. Thus, all of the inputs, assumptions and projections used in TEC directly affect the analysis of DSM. The FIRE model does not use any form of load shapes or chronological analysis of production costs. [TR 796] Rather, FIRE looks at each candidate measure and attempts to determine, in a snap-shop, if it is more or less expensive to implement the DSM resource than serve the load from the benchmark facility. Specifically, FIRE takes into account reductions in energy and capacity that a candidate DSM resources would cause, and then compares these to the system costs that would be avoided for the benchmark facility, using the Participants' inputs on operating costs and conditions. [TR. 1208-10]

The FIRE analysis of DSM is not congruent to mitigating the need for power because it omits a vast scope of data used by Tallahassee to assess the existing customer usage and load patterns, and thus establish a base line for assessing potential impacts of DSM. [TR. 796, 894-913] By way of example, JEA experiences a winter peak, while most of the other Participants experience summer peaks. This implies a wide range of customer usage patterns and load profiles to be served by TEC. Because it fails to capture this data, the FIRE model offers an inadequate assessment of the true future potential of DSM resources at TEC. Testimony from JEA, FMPA and RCID seems to indicate that planners for TEC were removed from and particularly unaware of this data. [Ex. 2, Depositon Transcript of William May, pgs. 9-14, 48-50; TR. 666, 683, 735]

Additionally:

(i) Inputs to the FIRE model inherently suffer from the same defects as described in Sections III (ii) and (iii) above, and thus, create an adverse cost-vs-benefit result for the screened DSM programs; and

(ii) Participants' FIRE analysis omits assumptions and details necessary to assess past and existing performance of conservation, energy efficiency and DSM. Additionally, this analysis fails to demonstrate an up-to-date assessment of practical and available resources in use around the nation which would mitigate need for TEC power and offer Participants important strategic benefits. Witness Powell discusses proven results around the country which demonstrate that DSM resources produce substantial economic benefits to utilities and to ratepayers.

As discussed below, Participants have adopted assumptions in their sensitivity analysis of CO2 regulation which underestimate commodity fuel prices and levels of carbon emissions taxes. These projections significantly and adversely affect the viability of DSM to mitigate the TEC supply option because they underestimate the O&M costs for TEC. In a classic contradiction, Witness Preston testified that one factor in the Participants' assumption of low demand growth under a CO2 regulatory scenario, was that utilities and states would more fully embrace renewables and DSM programs. [TR. 1026-7] This assumption was used by Participants to repress CO2 allowance prices and substantiate their sensitivity analysis of the cost effectiveness of TEC. The Commission must ensure that their analysis is held true and consistent by requiring a more thorough analysis of DSM resources, in particular to assess how greater use of DSM would impact operations should CO2 be regulated.

Tallahassee's approach to analyzing DSM produces outputs that are most appropriate and useful to the Commission in fulfilling its duties under section 403.519. The outputs of Tallahassee's analysis show clearly DSM programs which have the greatest prospect of mitigating their need for power from TEC. Most critically, Tallahassee's outputs demonstrate the cost-effectiveness of those programs in Tallahassee's existing system, over the long-term, with a full review of cost impacts in their operating environment. This eliminates most if not all of the uncertainty that the FIRE model accepts but fails to manage. The Commission should not rely on the output from the FIRE model, as executed by Participants, because it lacks the following:

1) **Accurate and Documented DSM Cost Effectiveness Assumptions**

Witness Powell testifies that inaccurate assumptions of DSM measure performance and costs will produce inappropriate cost effectiveness results, causing DSM to be either

under or over-valued as a resource. [TR. 894-913] To correctly understand the cost benefits, the evaluator must identify baseline standards of usage and conditions, and contrast them with the latest technology in efficiency measures appropriate for the usage and conditions. Few, if any, of these assumptions are in evidenced in the Participants' filings.

Examples (not exhaustive) of these important assumptions for each DSM measure include:

a. Assumed baseline efficiency of existing equipment or building stock;
b. Assumed annual hours of operation of replacement equipment;
c. On and off-peak demand savings;
d. Effective lifetime of the installed DSM measures;
e. Assumed equipment loading (e.g. motors, HVAC, compressors);
f. Assumed installation and incremental costs of all DSM measures;
g. Assumed DSM incentive and administrative costs; and
h. Consistency of these assumptions for all four Participants, with explanations of any discrepancies.
i. Dates and documented sources of all assumptions

2) **Full DSM Assessment of Industrial Sector**

While DSM measures were screened by FIRE which target the industrial sector, the lack of real baseline data for this class is an important omission because experiences with other utilities indicates that DSM can offer exceptionally high benefits in the commercial and industrial sectors, as compared to the residential market. [TR. 894-913]

Examples of missing data include:
a. Data on DSM deployment in the industrial sectors of their respective service territories;
b. Profiles of typical "baseline efficiency" of major electrical systems in the industrial sector, with a specific focus on air compression equipment;
c. The industrial electric load, by SIC code, of each applicant as a percentage of kWh sales;
d. Analysis of impacts of DSM initiatives in the major industrial service areas. There is no information on FMPA members, on RCID or on JEA, who represent almost eighty (80) percent of the TEC capacity. For example RCID, which provides electric service

to Disney World, a discrete facility with enormous industrial motor, cooling and pumping loads, and JEA, which has a substantial industrial load, offer vital opportunities to defer TEC through effective use of DSM in the industrial sector.

3) **Full consideration of every potentially cost-effective DSM measures.**

Witness Kuchner testified that his FIRE analysis evaluated 180 measures. [Ex. 105, TR 1173] Utility and state sponsored DSM programs in other states typically have a much larger number of DSM measures than were considered by the Participants. For example, the California Energy Commission lists 360 cost-effective DSM measures across all customer sectors. Considering what is being achieved in other States, and that Florida historically has underutilized DSM, it is highly probable that cost effective DSM options exist for the TEC Participants. The data filed by the City of Tallahassee confirms this position. In addition, Participants do not appear to have considered some specific DSM measures that are highly cost effective in other venues.

Examples of missing data include:

a. Standards used by Participants to identify candidate DSM measures for sceening;
b. The actual recent program experience of utility DSM programs used to identify highly cost effective measures, especially for RCID which gave very little information;
c. Whether potential DSM measures reflected new electric technologies; and
d. Whether any special focus or attention was given to special applications such as variable speed drive (VSD) motor control and compressed air system optimization which have proven to be highly cost-effective DSM measures in a number of commercial and industrial applications.

In addition to these omissions, Participants failed to demonstrate the true economic and strategic value of DSM by not assessing its potential to: (i) minimize risk of plant cost increases or abandonment; (ii) effectively manage load; (iii) mitigate or remove exposure to carbon taxes; (iv) reduce exposure to emission control costs for other greenhouse gases; (iv) reduce or

eliminate transmission expansion costs; and (v) reduce exposure to volatile coal or natural gas commodity markets; (vi)

V.
PARTICIPANTS FAILED TO ADEQUATELY ASSESS THE RISK OF REGULATION OF GREENHOUSE GASES

Issue 5 – Have Participants evaluated the costs of carbon emissions regulation
Issue 6 – Have Participants included costs of environmental controls effective to comply with state and federal standards

The Participants have taken the position that the baseline costs of TEC should include only the environmental control technology that Participants deem to be presently required and necessary. [Ex. 2, Response to Staff Interrogatory No.. 76, Ex. 41, TEC Need Application, section A.5.5, TR.] The base authority upon which they rely are the present enactments of the Clean Air Interstate Rule ("CAIR") and the Clean Air Mercury Rule ("CAMR"), which presently only impose restrictions on sulfur dioxide (SO2), nitrogen oxide (NOX), and mercury (Hg).

Participants engaged in a sensitivity analysis to project costs in a regulatory environment where carbon would be regulated along with the other greenhouse gases. This analysis was framed by several key assumptions; (i) the threshold for emission levels regulated would be the same as in 2000; (ii) CO2 would be regulated and allowances for emissions would be fungible and available across industries; (iii) CO2 allowances would be fungible and available across international boundaries. [TR. 995-1013, Preston Direct Testimony, pg. 18, 1027] These assumptions are very aggressive in line with present practices for greenhouse gas regulation, and directly affect the price patterns for allowances.

Best practices are present and emerging in CO2 regulation around the world, and specifically in the US. Specifically, utility regulators in several states have required their

regulated utilities to include costs associated with regulation of carbon in their energy planning processes [TR. 854-65, Lashof Direct Testimony, pg. 11] This is also true for regulators in other regions of the world. In the US, Congress has engaged in a fervent debate which has coalesced around specific alternative proposals, and the adoption of a measure appears imminent.

The existing best practices, and the emerging public debate have yielded a range of projected costs or taxes that will be attached to CO2 emissions. [TR. 854-65, Lashof Direct Testimony, pg. 10-12]

Participants have dramatically underestimated the impacts and consequences of CO2 regulation. First, the underlying assumptions again distort the risk analysis associated with CO2 regulation because they have the affect of assuming a ready supply of CO2 allowances, thereby depressing the market prices of those allowances. Participants' estimates of allowances prices fall significantly below several available, credible sources of these costs. These benchmark sources include: (i) an active carbon trading market in Europe; (ii) allowance levels used in US state and regional regulatory regimes; and (iii) guiding data from the US Department of Energy. Second, Participants have minimized the ancillary impacts of CO2 regulation on other market factors such as growth in demand, commodity prices of competing fuels, and commodity prices of coal. In doing so, Participants portray the impacts of CO2 regulation as occurring in isolation, and overstate the value of TEC in the face of these events. Third, Participants compound the first two shortcomings by failing to seriously consider the cost effectiveness of eliminating TEC or reducing its size, by looking to renewables and DSM to defer the need while more environmentally friendly technologies become available to alleviate risk from CO2 regulation.

V.
CONCLUSION

For the reasons discussed herein, the record before the Commission does not support a conclusion that TEC is the most cost effective alternative to serve the need for electricity demonstrated by the Participants. The Commission should deny this petition because the need for this plant has not been demonstrated. Alternatively, the Commission can only consider this petition with a true and accurate definition of the costs this facility will impose, and a true and accurate analysis of cost effective alternatives.

Respectfully submitted this 25th day of January, 2007 .

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Certificate of Service

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