

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 090451-EM,

PETITION FOR DETERMINATION OF NEED FOR THE
THE GAINESVILLE RENEWABLE ENERGY CENTER

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SUPPLEMENTAL TESTIMONY OF MYRON R. ROLLINS, P.E.

ON BEHALF OF

GAINESVILLE REGIONAL UTILITIES AND

GAINESVILLE RENEWABLE ENERGY CENTER, LLC

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MARCH 15, 2010

Q. Please state your name and business address.

A. My name is Myron Rollins. My business address is 11401 Lamar, Overland Park, KS 66211.

Q. By whom are you employed and in what capacity?

A. I am employed by Black & Veatch Corporation as a Director in B&V Management Consulting.

Q. Please describe your responsibilities in that position?

A. I serve as a director and project manager for system planning and feasibility studies encompassing the areas of integrated resource planning, load forecasting, generation planning, cogeneration, site selection and other special studies. I have served as an expert witness in numerous dockets before the Florida Public Service Commission as well as public service commissions in other states.

1 **Q. Please describe your specific experience in need determinations before the**
2 **Florida Public Service Commission.**

3 A. I assist applicants in preparing the information required in need determination
4 dockets to demonstrate the criteria in the need statute, 403.519 F.S. As part of
5 the need determination process, I often serve as an expert witness. I have been
6 testifying in need determinations before the Florida Public Service Commission
7 (“PSC”) since 1981. I have testified in the following need determinations.

- 8 • Stanton 1, 2, A, and B
- 9 • Cane Island 3 and 4
- 10 • Treasure Coast
- 11 • Cedar Bay
- 12 • Brandy Branch Combined Cycle Conversion
- 13 • Greenland Energy Center Combined Cycle Conversion
- 14 • Taylor Energy Center
- 15 • McIntosh 5

16 In total, I have testified at a dozen need determinations in Florida and have
17 attended many more need hearings.

18

19 **Q. Please state your educational background and professional experience.**

20 A. I received a Bachelor of Sciences degree in Electrical Engineering from the
21 University of Missouri. I am a registered Professional Engineer and I have
22 worked at Black & Veatch for 33 years.

23

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

2 **A. The purpose of my supplemental testimony in this proceeding is to demonstrate:**

- 3 ● that the PSC has faced similar applications of the statutory
4 criteria in other need determinations as they encounter with
5 GREC;
- 6 ● that the PSC weighs the criteria in light of the issues, statutes,
7 regulations, and policies in place at the time of the need
8 determination on a case-by-case basis;
- 9 ● that the PSC has made affirmative need determinations in those
10 cases as they should make with GREC; and
- 11 ● that determination of need is not predicated on satisfying each
12 and every criterion, but may be granted if any of the need criteria
13 are met.

14
15 I have prepared this testimony in response to several related questions and
16 concerns expressed by the Commissioners during their February 9, 2010 Agenda
17 Conference discussion of the need determination petition for Gainesville
18 Renewable Energy Center (“GREC”). The Commissioners’ questions focused
19 on the PSC’s role in this need determination of a renewable energy project for a
20 municipal utility [TR P9, L3, T10, L3, T14, L22, T24, L6, P36, L6, T63, L19,
21 T70, L22] and the weighting of the specific statutory criteria and other matters
22 within the PSC’s jurisdiction [TR P10, L3, P12, L25, T23, L24, P25, L20, P36,
23 L6, T36, L14].

24

1 Q. Are you sponsoring any exhibits to your testimony?

2 A. Yes. Exhibit No. __ [MRR-1] is a copy of my resume.

3

4 **Legislative History**

5 Q. Please describe the legislative history of 403.519 F.S. that introduced fuel
6 diversity and renewables as relevant criteria for the determination of need.

7 A. The need determination statute 403.519 was originally enacted in 1980. The
8 statute was amended in 2006, 2007, and 2008. The original criteria in 403.519
9 were: *In making its determination, the commission shall take into account the*
10 *need for electric system reliability and integrity, the need for adequate*
11 *electricity at a reasonable cost, and whether the proposed plant is the most cost-*
12 *effective alternative available. The commission shall also expressly consider the*
13 *conservation measures taken by or reasonably available to the applicant or its*
14 *members which might mitigate the need for the proposed plant and other*
15 *matters within its jurisdiction which it deems relevant.*

16

17 In 2006, 403.519 F.S. was amended to add in Paragraph (3) under the criteria the
18 commission shall take into account: *the need for fuel diversity and supply*
19 *reliability.* The 2006 amendment also added specific considerations for nuclear
20 plants including:

21

22 *(b) In making its determination, the commission shall take into account matters*
23 *within its jurisdiction, which it deems relevant, including whether the nuclear*
24 *power plant will:*

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1. *Provide needed base-load capacity.*
2. *Enhance the reliability of electric power production within the state by improving the balance of power plant fuel diversity and reducing Florida's dependence on fuel oil and natural gas.*
3. *Provide the most cost-effective source of power, taking into account the need to improve the balance of fuel diversity, reduce Florida's dependence on fuel oil and natural gas, reduce air emission compliance costs, and contribute to the long-term stability and reliability of the electric grid.*

In 2007, 403.519 F.S. was again amended to add in Paragraph (3) under the criteria the commission shall take into account: *whether renewable energy sources and technologies, as well as conservation measures, are utilized to the extent reasonably available.* In addition, the amendment included adding integrated gasification combined cycle to the nuclear provisions added in 2006.

The 2008 amendments to 403.519 F.S. were not germane to the statutory need criteria.

Q. Does GREC meet the statutory criteria for need as modified in 2006?

A. GREC clearly satisfies the fuel diversity and supply reliability that the criteria contemplate. GREC also clearly meets the other specific criteria added in 2006, even though GREC is a biomass facility and not a nuclear power plant.

- GREC provides baseload capacity.

- 1 • GREC enhances the reliability of electric power production in the
2 state by improving fuel diversity and reducing Florida's
3 dependence on fuel oil and natural gas.
- 4 • GREC provides cost-effective power taking into account the need
5 to improve fuel diversity, reduce Florida's dependence on fuel oil
6 and natural gas, reduce air emission compliance costs, and
7 contribute to the long-term stability and reliability of the electric
8 grid.

9

10 **Q. Does GREC meet the statutory criteria for need as modified in 2007?**

11 A. Yes. GREC certainly meets this new criterion by adding a substantial new
12 renewable generation resource to GRU's system and the Florida electric power
13 supply grid.

14

15 **Q. In addition to the specific changes to 403.519 F.S., have there been other**
16 **issues, statutes, regulations, and policies that the PSC has considered in the**
17 **application of the 403.519 F.S. criteria through time?**

18 A. Yes. As issues, statutes, regulations, and policies have changed through time,
19 the PSC has changed the weight applied to each of the criteria in light of the
20 specific circumstances at the time. In the remainder of my testimony, I will
21 provide examples of how each of these need criteria have been addressed in
22 previous need determinations.

23

24

1 **The Need for Electric System Reliability and Integrity**

2 **Q. Please discuss the application of the criteria for need for electric system**
3 **reliability and integrity.**

4 A. The PSC has often taken a broad approach to these criteria and has taken into
5 account other benefits that proposed power plants provide in addition to meeting
6 reserve margin requirements, which is precisely the situation with GREC. In
7 fact, the PSC has granted need determinations for proposed plants even though
8 they were not needed to meet utility or statewide reserve margin criteria.

9
10 **Q. Please describe some of the issues that have faced the utility industry and**
11 **how these issues along with statutes, regulations, and policies in place at the**
12 **time and the PSC's application of the criterion in light of the specific**
13 **situation.**

14 A. First, let's look at the 1973 Arab Oil Embargo and the oil crisis of 1979 and
15 1980. During these years, Florida was heavily dependent upon oil for
16 generation. The availability of oil was in question and the price of oil
17 skyrocketed. The Florida utility industry did not need additional capacity for
18 reserve requirements, the industry needed fuel diversity and responded by
19 proposing coal units for which determination of need was granted by the PSC.

20
21 **Q. Were there any statutes or regulations enacted relating to the impact of the**
22 **Embargo and Florida oil crisis?**

23 A. Yes. One statute that was enacted was the Florida Energy Efficiency and
24 Conservation Act (FEECA) in 1980. FEECA required the PSC to: *adopt*

1 *appropriate goals for increasing the efficiency of energy consumption*
2 *specifically including goals designed to increase the conservation of expensive*
3 *resources, such as petroleum fuels. One of the goals adopted by the PSC under*
4 FEECA was the reduction of the Florida's consumption of oil by 25 percent by
5 1990.

6

7 **Q. How did the PSC apply the criterion for electric system reliability and**
8 **integrity in response to the proposed coal units in light of the conditions at**
9 **the time and the policies and regulations in place?**

10 A. The PSC explicitly applied the issues, statutes, regulations, and policies in
11 weighting the 403.519 criteria in approving need determinations. For example,
12 even though reducing oil consumption was not an explicit criterion under the
13 need determination statute, the PSC took into account the FEECA requirements
14 for reducing oil consumption when considering that the coal units would not be
15 needed strictly to meet reserve margin requirements for at least a decade into the
16 future. The PSC recognized that even though the units weren't needed for
17 reserve requirements, the units improved reliability. Some of the PSC findings
18 from the Stanton 1 need determination (Order 10320-A, issued in October 1981)
19 are as follows:

20

21 *For the reasons developed below, we have determined that Stanton the Unit is*
22 *needed, as to both the capacity size and time frame. (P2)*

23

1 *Another aspect of the need issue is the socio-economic need of reducing the*
2 *State's consumption of imported oil. (P2)*

3
4 *The FCG study concluded that while the proposed Stanton Unit will*
5 *undoubtedly enhance the adequacy and reliability of the Bulk Power Supply*
6 *System, the facility does not appear to be needed for peninsular-wide reliability*
7 *purposes during the 1980's. However, the study did find that Stanton will be*
8 *needed by 1992 to help prevent peninsular Florida's reserves from dropping*
9 *below the 25% level. (P3)*

10
11 *Some of the PSC's findings from the St. Johns River Power Park Unit 1 and 2*
12 *need determination (Order 10108, issued in June 1981) are as follows:*

13
14 *We construe the 'need for power' issue to encompass several aspects of need.*
15 *(P2)*

16
17 *In addition, the socio-economic need of reducing the consumption of imported*
18 *oil in the State of Florida has been considered. (P2)*

19
20 *The Florida Energy Efficiency and Conservation Act also impacts upon the*
21 *instant application. (P2)*

22
23 *[A]dditional generating capacity for the purpose of insuring adequate supplies*
24 *of power [and] energy to peninsular Florida electric consumers does not*

1 *appear to be required until 1991. Similarly, JEA and FPL do not appear to*
2 *require additional generating capacity for reliability purposes until 1991 and*
3 *1989 respectively[.] (P2)*

4
5 *Having considered the record in this matter, we find that a need exists for the*
6 *construction of St. Johns River Power Park Units 1 and 2 in the time frame*
7 *proposed by the applicants, in that construction of the units appears to be the*
8 *best available alternative to the continued use of expensive oil-fired generation*
9 *(P6)*

10
11 **Q. How should the PSC apply these precedents to GREC?**

12 A. Just as the PSC did in granting determination of need for the Stanton Unit 1 and
13 St. John's River Power Park Units 1 and 2, the PSC should grant the requested
14 determination of need for GREC because of fuel diversity and the State of
15 Florida's policy objectives to reduce the use of fossil fuel and encourage the use
16 of renewable energy technologies, and the numerous other benefits that GREC
17 provides.

18
19 **Q. Were there other issues regarding statutes, regulations, and policies that**
20 **were addressed by the PSC relating to the criterion for electric system**
21 **reliability and integrity?**

22 A. Yes. The Public Utility Regulatory Policies Act (PURPA) was passed in 1978.
23 PURPA provided requirements for qualifying facilities (QFs) and required
24 utilities to purchase the output of QFs at avoided cost. The Commission

1 implemented PURPA in the state. FEECA was also amended several times in
2 light of the issues facing the Florida electric utility industry at the time.

3

4 **Q. Did PURPA and FEECA result in the PSC issuing need determinations?**

5 A. Yes. Several municipal solid waste (MSW) facilities requested need
6 determinations as QFs even though they were not needed to satisfy reserve
7 margin criteria. In addition, a need determination was issued for Florida Crushed
8 Stone (FCS) as a QF cogeneration unit. These projects have unique
9 characteristics regarding the 403.519 criteria.

10

11 Some of the PSC findings from the FCS need determination (Order 11611) are
12 as follow:

13

14 *Under the Florida Energy Efficiency and Conservation Act (Section 366.80 et*
15 *seq., Florida Statutes) the Commission has determined that cogeneration*
16 *appears to be a cost effective conservation measure. Therefore, as part of our*
17 *statutory authority to consider other matters within our jurisdiction we deem*
18 *relevant to a need determination, we have decided that additional criteria*
19 *related to fuel efficiency should be used to evaluate the application of FCS. (P2)*

20

21 *The first statutory criteria we must consider is the impact of the proposed plant*
22 *on the integrity and reliability of the electric system. Mr. Wieland testified that*
23 *electric system reliability and integrity will be satisfactory both before and after*
24 *construction of the proposed facility. We find that the addition of 125 MW of*

1 *generating capacity will enhance system reliability and integrity simply because*
2 *it will increase the diversity of generating sources; however, this benefit cannot*
3 *be quantified, and we view it as a minor, but desirable, result of constructing the*
4 *proposed plant. (P3)*

5
6 *Thus, based on the record before us, we conclude that Florida Crushed Stone*
7 *Company's proposed cogeneration facility, including a 125 MW coal-fired*
8 *power plant, will enhance electric system reliability and integrity by an*
9 *unquantified amount, (P6)*

10
11 Another example need determination is the Pasco County MSW facility (Order
12 17752, issued in June 1987):

13
14 *We project that without the addition of qualifying facilities or power plants*
15 *before the summer of 1993, peninsular Florida will have total available capacity*
16 *of 32,318 MWs with an expectant coincident firm peak demand of 25,138 MWs.*
17 *This equates to a reserve margin of 28 percent. The contribution of Pasco*
18 *County's facility to this reserve margin would only be on one-hundredth of one*
19 *percent. Clearly, this is a small amount; yet it is a positive contribution. (P2)*

20
21 It is interesting to note that peninsular Florida's 28 percent reserve margin was
22 higher than the current projection of peninsular Florida's reserve margin from
23 2009 through 2018 as presented in the Review of 2009 Ten-Year Site Plans for
24 Florida's Electric Utilities.

1 Many of the PSC's previous findings relative to the criterion of need for electric
2 system reliability and integrity are directly related to GREC. While GREC is
3 not required immediately to meet reserve margins, it is required under other
4 403.519 F.S. criterion (need for fuel diversity and supply reliability) and other
5 statutes and regulations (366.91 and 366.92 F.S.) and it improves GRU's system
6 reliability and integrity by providing baseload capacity for GRU's aging
7 generation system.

8

9 **Q. Does the PSC limit need considerations to the individual utility or do they**
10 **consider the peninsular Florida need?**

11 A. Historically the PSC has considered peninsular Florida need in addition to the
12 individual utility needs. Some of the PSC findings from the Stanton 1 need
13 determination (Order 10320-A, issued in October 1981) relative to peninsular
14 Florida need are as follows:

15

16 *We have analyzed these aspects of the need for Stanton Unit 1 as they impact*
17 *upon peninsular Florida as a whole (P2)*

18

19 *The FCG study concluded that while the proposed Stanton Unit will*
20 *undoubtedly enhance the adequacy and reliability of the Bulk Power Supply*
21 *System, the facility does not appear to be needed for peninsular-wide reliability*
22 *purposes during the 1980's. (P3)*

23

1 *A peninsula-wide focus on the oil displacement generated by Stanton on a*
2 *statewide basis is appropriate (P4)*

3
4 *OUC will be capable of producing more coal-fueled and nuclear-fueled energy*
5 *than its system would require at times of minimum load. This excess energy can*
6 *then be readily marketed as economy energy on a peninsula-wide basis. (P4)*

7
8 *The additional capacity will give OUC latitude in marketing capacity and*
9 *energy on a peninsula-wide basis and will allow maximum benefits to be derived*
10 *from the existing units (P6)*

11
12 *On the basis of the foregoing discussion, we find and conclude that a need exists*
13 *for the Stanton Unit No. 1 as proposed by the Applicant. We base our*
14 *determination primarily upon the benefits identified as flowing to peninsular*
15 *Florida and to OUC's service area. (P11)*

16
17 In the St. Johns River Power Park Units 1 and 2 need determination (Order
18 10108, issued in June 1981) the PSC looked at statewide need as follows:

19
20 *In addition, the socio-economic need of reducing the consumption of imported*
21 *oil in the State of Florida has been considered. (P2)*

22

23 **Q. Will GREC provide benefits to peninsular Florida?**

1 A. Yes. Taking into account need for peninsular Florida as well as the individual
2 utility is particularly appropriate. GRU plans to sell 50 MW of GREC's
3 capacity during the first 10 years of the contract. This 50 MW sold to other
4 utilities in peninsular Florida will provide renewable energy with its associated
5 fuel diversity and environmental attributes to peninsular Florida and will
6 contribute to the integrity and reliability of the peninsular Florida's system.

7

8 **Need for Adequate Electricity at a Reasonable Cost**

9 **Q. How has the PSC addressed the criterion of need for adequate electricity at**
10 **a reasonable cost?**

11 A. Historically, the PSC has considered a number of issues that impact upon the
12 need for adequate electricity at a reasonable cost. They have included issues,
13 statutes, regulations, and policies that result in need for power plants and have
14 considered the timing of costs to customers associated with these other needs.
15 Often the addition of a new generating unit results in increased costs to
16 customers at commercial operation, but results in lower costs to the customers
17 over the life of the unit. PSC findings relative to the need for adequate
18 electricity at a reasonable cost from the Stanton 1 need determination (Order
19 10320-A, issued in October 1981) are as follows:

20

21 *OUC will be capable of producing more coal-fueled and nuclear-fueled energy*
22 *than its system would require at times of minimum load. This excess energy can*
23 *then be readily marketed as economy energy on a peninsula-wide basis. (P4)*

24

1 *It is unlikely that the construction of Stanton Unit 1 will result in the absolute*
2 *reduction in the OUC's customers bills (P4)*

3
4 *The additional capacity will give OUC latitude in marketing capacity and*
5 *energy on a peninsula-wide basis and will allow maximum benefits to be derived*
6 *from the existing units (P6)*

7

8 **Q. Does PSC precedent recognize that costs are reasonable, even though in the**
9 **early years of operation, customers' bills may increase?**

10 A. Yes. For example, the findings from Stanton 1's need determination are directly
11 applicable to GREC. GREC may increase GRU's customers' bills slightly when
12 it enters commercial operation. Marketing the additional capacity from GREC
13 during the early years of operation will provide benefits to peninsular Florida
14 while preserving the long term benefits from the economies of scale of GREC
15 for GRU's customers.

16

17 **Q. Is it necessary for the PSC to always make a positive finding on each of the**
18 **individual criteria?**

19 A. No. Historically the PSC has either placed very little weight on a criterion or
20 has found that there was not a requirement for that criterion. A finding from
21 FCS's need determination (Order 11611, issued in February 1983) relative to the
22 need for adequate electricity at a reasonable cost follows:

23

1 *[T]he proposed plant will have essentially no impact on the need for an*
2 *adequate supply of electricity at a reasonable cost. (P4)*

3

4 Findings from the Pasco County need determination (Order 17752, June 1987)
5 follow:

6

7 *[W]e would be unable to make the economic judgement necessary to determine*
8 *if the second and third criteria of reasonable cost and cost-effectiveness have*
9 *been met. (P2)*

10

11 *We, therefore, make no specific finding on this statutory criteria nor do we find*
12 *it necessary to apply any other specific [criteria] in making our determination*
13 *of need. (P2)*

14

15 GREC will provide adequate electricity at a reasonable cost. This is especially
16 true when considering the statutory, regulatory, and policy requirements for
17 renewables. GREC is certainly the lowest cost renewable alternative and is
18 lower in cost than conventional alternatives over the life of the GREC contract
19 other than coal without consideration of carbon.

20

1 **Whether the Proposed Alternative is the Most Cost-Effective Alternative Available**

2 **Q. How has the PSC applied the criterion as to whether the proposed**
3 **alternative is the most cost-effective alternative available?**

4 A. The PSC has applied this criterion in the context of the issues, statutes,
5 regulations, and policies in place at the time. In addition, the PSC has looked to
6 peninsular Florida in making its determination rather than only the applicant
7 utility. Finally, in some cases, the PSC has not even found it necessary to make
8 a positive finding on this criterion in granting a determination of need. Many of
9 the findings from above need determination orders relate to this criterion.

10

11 **Q. Please elaborate on your statement that the PSC has applied this criterion**
12 **in the context of the issues, statutes, regulations, and policies in place at the**
13 **time.**

14 A. The current utility environment requires, encourages, and promotes renewables
15 and CO₂ emission reductions, even though these are not the least-cost
16 alternatives. Besides the statutory changes to 403.519 F.S. relative to
17 renewables, there have been other statutes enacted promoting renewables and
18 CO₂ emissions reduction.

19

20 In 2005, F.S. 366.91 was enacted finding *that it is the public interest to promote*
21 *the development of renewable energy resources in this state. Renewable energy*
22 *resources have the potential to help diversify fuel types to meet Florida's*
23 *growing dependency on natural gas for electric production, minimize the*
24 *volatility of fuel cost, encourage investment within the state, improve*

1 *environmental conditions, and make Florida a leader in new and innovative*
2 *technologies.*

3
4 In 2006, F.S. 366.92 was enacted *to promote the development of renewable*
5 *energy facilities; diversify the types of fuel used to generate electricity in*
6 *Florida; lessen Florida's dependence on natural gas and fuel oil for the*
7 *production of electricity; minimize the volatility of fuel costs; encourage*
8 *investment within the state; improve environmental conditions; and, at the same*
9 *time, minimize the costs of power supply to electric utilities and their customers.*

10
11 In 2008, F.S. 366.92 was amended to require the Commission to develop a
12 proposed renewable portfolio standard (RPS) rule and present a draft to the
13 legislature for legislative consideration by February 1, 2009. The Commission
14 developed the proposed RPS, but the legislature failed to act.

15
16 In 2008, the Florida Climate Protection Act was also enacted which authorized
17 the Department of Environmental Protection (DEP) to develop a cap and trade
18 program for CO₂ also to be presented to the legislature for enactment after
19 January 1, 2010. After several workshops, the DEP is not currently working on
20 the development of the program while awaiting federal legislation.

21
22 Prior to the above legislation, Governor Crist issued Executive Order No. 07-
23 127 in 2007 establishing greenhouse gas emissions reduction targets of 80
24 percent of 1990 levels by 2050 and an RPS of a least 20 percent.

1 **Q. Are there any direct indications that the Commission is making policy**
2 **decisions considering CO₂ emissions reductions?**

3 A. Yes. One such decision was the recent setting of conservation goals for the
4 investor-owned utilities based on the E-TRC test, which explicitly included
5 consideration of potential costs imposed by carbon regulation in the cost-
6 effectiveness evaluation of conservation programs.

7

8 The need determination for GREC should be made within the context of these
9 issues, statutes, regulations, and policies because of the environmental attributes
10 GREC provides.

11

12 **Q. How has the Commission considered the cost of potential CO₂ emissions**
13 **regulation in applying the criterion as to whether the proposed plant is the**
14 **most cost-effective alternative available?**

15 A. One of the recent need determinations was the 2007 denial of the need for the
16 Glades Power Park Units 1 and 2, which were proposed coal-fueled units. In
17 denying the need (Order PSC-07-0557-FOF-EI, issued in July 2007), the
18 Commission noted the following:

19

20 *“FPL has failed to demonstrate that the proposed plants are the most cost-*
21 *effective alternative available, taking into account the fixed costs that would be*
22 *added to base rates for the construction of the plants, the uncertainty associated*
23 *with future natural gas and coal prices, and the uncertainty associated with*
24 *currently emerging energy policy decisions at the state and federal level.” (P 4)*

1 The cost-effectiveness analysis in the Glades application included 16 scenarios
2 including the projected cost of CO₂ emissions. The coal units were only lower
3 in cost in 7 of the 16 scenarios when CO₂ costs were considered. In the Glades
4 case, inclusion of CO₂ emission costs made a number of the scenarios not cost-
5 effective. For GREC, including CO₂ emissions costs makes all the scenarios
6 cost-effective. It would certainly be inconsistent for the PSC not to take into
7 account the scenarios including CO₂ emissions costs.

8
9 Other findings from the Glades need determination that relate to cost-
10 effectiveness follow:

11
12 *The Legislature did not assign the weight that this Commission is to give each of*
13 *these factors. (P 2.*

14
15 *The Commission's decision on a need determination petition must be based on a*
16 *case-by-case review of facts (P 3)*

17
18 *Finally, we recognize that, in light of the inherent variability of necessary*
19 *assumptions about fuel costs, capital costs, and other resource planning*
20 *matters, uncertainty about cost-effectiveness alone will not necessarily control*
21 *the outcome of every need determination decision. (P 4)*

22
23 As indicated in the findings of the other need determinations provided, the PSC
24 has not constrained cost-effectiveness to strictly the applicant utility. Besides

1 consideration of potential CO₂ emissions costs, the cost-effectiveness of GREC
2 should include the economy of scale benefits provided to peninsular Florida
3 during the first ten years of operation.

4

5 **Need for Fuel Diversity and Supply Reliability**

6 **Q. Please comment on the PSC's application of the need criterion for fuel**
7 **diversity and supply reliability.**

8 A. The PSC took into account the need for fuel diversity and supply reliability long
9 before it became a statutory criterion for determination of need. As presented in
10 the previous need determination order findings, the PSC has often placed great
11 weight on this criterion even to the extent that other criteria were weighted to a
12 lesser degree or not at all. The earlier findings from Orders 10320-A, 10108,
13 and 11611 present the PSC's historical considerations relative to fuel diversity
14 and supply reliability.

15

16 The need for GRU to diversify its fuel mix and its associated advantages of
17 reducing GRU's exposure to the costs of potential CO₂ emissions regulation is
18 one of GRU's most important reasons for seeking the determination of need for
19 GREC.

20

21

1 **Whether Renewable Energy Sources and Technologies, as Well as Conservation**
2 **Measures, Are Utilized to the Extent Reasonably Available to the Applicant**

3 **Q. Please comment on the PSC's application of the need criterion of whether**
4 **renewable energy sources and technologies as well as conservation**
5 **measures are utilized to the extent reasonably available to the applicant.**

6 A. GREC is the first renewable generating unit to seek a need determination since
7 this criterion was added to 403.519 F.S. The PSC found that the other
8 applicants for need determinations that have been filed since this revision to the
9 statute met this criterion through their existing renewable and conservation
10 programs. When the utility is proposing a renewable project, such as GREC, the
11 utility is obviously promoting the State's need for renewable energy that this
12 criterion is intended to promote, as well as the pro-renewable policies set forth
13 in Sections 366.91 and 366.92, Florida Statutes. The only possible question
14 about a proposed renewable power plant is whether it is the most cost-effective
15 renewable alternative available. In this case, as explained by Mr. Regan, GREC
16 is the most cost-effective renewable alternative available to GRU.
17 GRU certainly meets any test of utilizing renewable energy and conservation
18 measures to the extent reasonably available. GRU's renewable projects include
19 their feed-in-tariff for solar photovoltaics and the very significant biomass
20 contribution from GREC. GRU has also developed their conservation programs
21 very aggressively based on the total resource cost test. The success of GRU's
22 renewable and conservation programs are responsible for reducing GRU's loads
23 and deferring the need for new capacity for reserve margin purposes.

24

1 **Conservation Measures Taken by or Reasonably Available to the Applicant or Its**
2 **Members Which Might Mitigate the Need for the Proposed Plant**

3 **Q. Please comment on the PSC's consideration as to whether the conservation**
4 **measures taken by or reasonably available to the applicant or its members**
5 **which might mitigate the need for the proposed plant.**

6 A. The PSC has generally determined that there are not sufficient conservation
7 measures available to applicants to mitigate the need for the proposed plants.
8 The PSC has generally made that determination based on its review of the
9 applicant's evaluation of the cost-effectiveness of additional conservation
10 measures. In other instances, the PSC has found that this criterion is not
11 applicable as shown in Pasco County's need determination (Order 17752, issued
12 June 1987) as follows:

13
14 *We do not believe that conservation of electrical energy is directly at issue in*
15 *this case. We, therefore, make no specific finding on this statutory criteria nor*
16 *do we find it necessary to apply any other specific [criteria] in making our*
17 *determination of need. (P2)*

18
19 **Q. How does GREC relate to this criterion?**

20 A. As discussed regarding the previous criterion, GRU uses the TRC test to
21 determine cost-effectiveness of conservation program. Because GRU uses the
22 TRC test to identify and implement energy conservation programs, there are no
23 additional conservation measures reasonably available to GRU that could
24 mitigate the need for GREC.

1 **Other Matters Within the PSC's Jurisdiction**

2 **Q. Please comment on the PSC's consideration of other matters within its**
3 **jurisdiction with respect to need determinations.**

4 A. This criterion is very broad. The PSC has historically considered additional
5 factors in its need determination proceedings where appropriate. Examples
6 include the consideration of FEECA's conservation and oil reduction goals in
7 need determinations as shown in my discussion of previous need determination
8 orders, such as those for Stanton Unit 1, St. John's River Power Park Units 1
9 and 2, the Florida Crushed Stone facility, and others. Other examples include
10 the consideration of CO₂ emissions costs as was done in the Glades need
11 determination (Order PSC-07-0557-FOF-EI, issued in July 2007). Obviously
12 this is a criterion that is not required to be considered by the PSC and has not
13 been considered in many need determinations.

14
15 **Q. What, if any, other matters within its jurisdiction should the PSC consider**
16 **with respect to GREC?**

17 A. Relative to other matters within its jurisdiction, the PSC should consider
18 GREC's contribution to meeting the pro-renewable energy policies set forth in
19 Sections 366.91 and 366.92, Florida Statutes. These sections set forth several
20 specific objectives that GREC will promote, including diversifying the fuel mix
21 of Florida's electricity supply, reducing the State's dependence on natural gas
22 and fuel oil, minimizing the volatility of fuel cost, encouraging investment in
23 Florida, and improving environmental conditions by reducing emissions

1 produced by conventional electricity generation. GREC promotes these policy
2 objectives not only for Gainesville, but also for Florida as a whole.

3

4

Summary and Conclusions

5 **Q. Please summarize the conclusions of your testimony.**

6 **A.** Since 1981, I have testified in 12 need determinations before the PSC. After
7 reviewing the PSC's historical application of the statutory need criteria,
8 including other matters within its jurisdiction as those have evolved over the
9 past 30 years, I conclude that the PSC should grant the requested affirmative
10 determination of need for GREC.

11 **• Reliability and Integrity**

12 The PSC has historically approved need determinations when the
13 capacity of the unit was not needed for several years – in some instances
14 more than a decade – in the future. In those instances, the units were
15 found to contribute to the reliability and integrity of the utility's system
16 as well as peninsular Florida. Such is the case with GREC.

17 **• Adequate Electricity at a Reasonable Cost**

18 The PSC has historically approved need determinations to obtain long-
19 term savings and other benefits, even though costs to customers were
20 projected to increase when the unit first commenced operation. Such is
21 the case with GREC.

22 **• Most Cost-Effective Alternative**

23 The PSC has historically considered the issues, statutes, regulations, and
24 policies at the time of the need determination and approved the most

1 cost-effective alternative in light of the situation. Such is the case with
2 GREC in that it is the most cost-effective renewable alternative available
3 to meet GRU's needs.

4 ● **Fuel Diversity and Supply Reliability**

5 GREC supplies GRU and peninsular Florida with fuel diversity and
6 supply reliability.

7 ● **Utilization of Renewables and Conservation**

8 With the addition of GREC, GRU will be using all reasonable
9 renewables and is using all reasonable conservation through the
10 utilization of the TRC test.

11 ● **Conservation Which Might Mitigate GREC**

12 GRU is already utilizing all reasonable conservation measures through
13 use of the TRC test.

14 ● **Other Matters Within Its Jurisdiction**

15 The PSC should apply 366.91 and 366.92 F.S., which establish Florida's
16 policy to promote renewable energy in its consideration of the need for
17 GREC.

18
19 My discussion of the PSC's decisions since 1981 demonstrates that the PSC has
20 determined need for proposed power plants that did not satisfy all of the
21 statutory criteria. The PSC's determination of need is not predicated on
22 satisfying each and every criterion, but may be granted if any of the need criteria
23 are met.

24

1 Consistent with its precedents, the PSC should conclude that GREC satisfies all
2 of the statutory criteria, and accordingly, the PSC should grant the requested
3 determination of need for GREC.

4

5 **Q. Does this conclude your supplemental testimony?**

6 **A. Yes.**

7

Project Manager

*Project Management,
Integrated Resource
Planning,
Permitting and
Licensing,
Feasibility Studies and
Project Development*

Education

B.S., Electrical Engineering,
University of Missouri –
Columbia, 1974

Professional Registration

Professional Engineer: Missouri,
1982

Total Years Experience

1976 – present

Joined Black & Veatch

1976

Professional Associations

MoKan American Nuclear
Society, Past President
Institute of Electrical and
Electronics Engineers, Senior
Member, Treasurer University of
Missouri Engineering Alumni
Board of Directors

Mr. Rollins provides project management expertise and is responsible for the management of system planning and feasibility studies encompassing the areas of integrated resource planning, load forecasting, generation planning, cogeneration, site selection and other special studies.

Mr. Rollins specializes in generation planning and project development. He is responsible for numerous power supply studies incorporating integrated planning techniques. Mr. Rollins was responsible for the development of Black & Veatch's POWRPRO chronological production costing program and POWROPT optimal generation expansion program. He specializes in power market analysis and project feasibility studies. Mr. Rollins extends his expertise in generation system planning to the area of the need for power certification of power plants.

Mr. Rollins has broad expertise in planning and project development that enables him to assist clients in the development of expansion plans and specific projects in a realistic manner that incorporates the required balance between engineering and cost considerations, as well as sociopolitical and licensing considerations. With this experience, Mr. Rollins has successfully helped utility and developer clients add value to their systems and projects throughout his career.

Mr. Rollins has presented expert testimony on several occasions before the Alaska, Florida, Indiana and Missouri Public Service Commissions. He has published numerous papers on strategic planning and cogeneration. In addition, he is a Past Chairman of the Mo-Kan section of the American Nuclear Society and a Senior Member of IEEE.

Representative Project Experience

Conservation Goals Dockets, JEA, OUC, and FPUC, Florida

In 2009, Mr. Rollins served as Project Manager for JEA, Orlando Utilities Commission (OUC), and Florida Public Utilities Company (FPUC) for the Conservation Goals Dockets before the Florida Public Service Commission (FPSC). Every five years the FPUC sets conservation goals for utilities subject to the Florida Energy Efficiency and Conservation Act. The FPSC sets goals for residential and commercial sectors for the reduction in summer and winter peak demand and energy. Mr. Rollins was responsible for preparing testimony for the Conservation Goals Docket for each of the three utilities. In addition, he was responsible for providing responses to interrogatories and production of document requests propounded by the FPSC and numerous intervenors. The utilities were responsible for providing technical, economic, and achievable conservation potential as part of their testimony. Mr. Rollins served as an expert witness during the four day evidentiary hearing.

Railbelt Integrated Resource Plan, Alaska Energy Authority, Alaska

In 2009, Mr. Rollins served as Project Manager for the Railbelt Integrated Resource Plan (RIRP) conducted for the Alaska Energy Authority (AEA).

The RIRP was developed for the six interconnected utilities of the Alaska Railbelt consisting of Anchorage Municipal Power & Light (ML&P), Chugach Electric Association (Chugach), City of Seward Electric System (SES), Golden Valley Electric Association (GVEA), Homer Electric Association (HEA), and Matanuska Electric Association (MEA). The RIRP was conducted with all six interconnected utilities considered as one integrated utility. The RIRP evaluated numerous conventional alternatives including simple cycle combustion turbine plants, combined cycle units, and pulverized coal units. Renewable energy alternatives considered included large and small hydroelectric, wind, geothermal, municipal solid waste, and tidal. Combined heat and power and small modular nuclear units were also considered. The supply side alternatives were fully integrated with an evaluation of cost effective demand-side management/energy efficiency programs. Extensive transmission system analysis was also conducted.

Need for Power Certification, JEA, Florida

In 2008, Mr. Rollins served as Project Manager for the preparation of a Need for Power Application for JEA's Greenland Energy Center Combined Cycle Conversion. The combined cycle conversion was to convert to simple cycle 7 FA combustion turbines to combined cycle. The application was submitted to the Florida Public Service Commission under the Florida Electrical Power Plant Siting Act. The Need for Power Application evaluated the Greenland Energy Center combined cycle conversion against other self-build alternatives including renewable alternatives and demand-side management alternatives. The Florida Public Service Commission unanimously approved the need for the Greenland Combined Cycle conversion in February 2008.

Need for Power Certification, Orlando Utilities Commission, Florida

In 2006, Mr. Rollins served as Project Manager for the preparation of a Need for Power Application for the Orlando Utilities Commission's Stanton Energy Center Unit B. Stanton B was a proposed IGCC unit to be constructed at Stanton Energy Center in Orlando, Fla. The application was submitted to the Florida Public Service Commission under the Florida Electrical Power Plant Siting Act. The Need for Power Application evaluated Stanton B against other self-build alternatives and demand-side management alternatives. The Florida Public Service Commission unanimously approved the need for Stanton B.

Need for Power Certification, Florida Municipal Power Agency, Florida

In 2005, Mr. Rollins served as Project Manager for the preparation of a Need for Power Application for Florida Municipal Power Agency's (FMPA's) Treasure Coast Energy Center (TCEC) Unit 1. TCEC Unit 1 was a proposed 1x1 F-class combined-cycle unit to be constructed on a greenfield site in Ft. Pierce, Fla. The application was submitted to the Florida Public Service Commission under the Florida Electrical Power Plant Siting Act. The Need for Power Application evaluated TCEC Unit 1 against other self-build alternatives, purchase power from a request for proposals (RFP) process and demand-side management alternatives. The Florida Public Service Commission unanimously approved the need for TCEC Unit 1.

Integrated Resource Plan, City of Tallahassee, Florida

As Project Manager from 2005 to 2006, Mr. Rollins provided an integrated resource plan (IRP) for the City of Tallahassee. The IRP involves extensive evaluation of gas- and coal-fueled alternatives. More than 140 demand-side management (DSM) measures were evaluated. The IRP includes extensive evaluation of the impacts from the Clean Air Interstate Rule (CAIR) and Clean Air Mercury Rule (CAMR). Biomass generation was evaluated as part of the IRP. Extensive probabilistic risk analysis also was conducted.

Integrated Resource Plan, JEA, Florida

Mr. Rollins managed an integrated resource plan (IRP) in conjunction with JEA. He served as the Project Manager. The IRP involved extensive evaluation of gas- and coal-fueled alternatives, including the development of site-specific estimates. Requirements for the Clean Air Interstate Rule (CAIR) and Clean Air Mercury Rule (CAMR) were included in determining air quality-control additions necessary for existing units. Demand-side management (DSM) evaluation made use of previous work conducted by Black & Veatch as part of JEA's Conservation Goal Docket before the Florida Public Service Commission.

Integrated Resource Plan Review, City of Lakeland, Florida

As Project Manager, Mr. Rollins managed the review of the development of the City of Lakeland's integrated resource plan (IRP). The review encompasses all aspects of the IRP, including load forecast, fuel forecast, development of supply-side alternatives, life extension and expansion planning. In addition, Black & Veatch evaluated demand-side management alternatives for the City of Lakeland.

Expert Testimony, Indiana Municipal Power Agency

Serving as Project Manager, Mr. Rollins presented expert testimony before the Indiana Utility Regulatory Commission for the issuance of a Certificate of Public Convenience and Necessity. The testimony covered the technical and economic feasibility for three coal-generating unit projects in which the Indiana Municipal Power Agency planned to participate.

St. Johns River Power Park Annual Report, JEA, Florida

Mr. Rollins, Project Manager, oversaw the preparation of the annual report on the operation and maintenance of St. Johns River Power Park, which consisted of two 675 MW pulverized coal units burning a mix of coal and petroleum coke. The units were jointly owned by Florida Power & Light Company and JEA. The annual operation and maintenance report was required to be submitted to the bond trustee under JEA's bond covenants.

Ten-Year Site Plan, Orlando Utilities Commission, Florida

Mr. Rollins managed the preparation of the Ten-Year Site Plan for the Orlando Utilities Commission as required by the Florida Public Service Commission. Mr. Rollins served in the capacity of Project Manager, and the Ten-Year Site Plan was an integrated resource expansion plan for the utility,

including load forecast, fuel price forecast, demand-side management and generation expansion.

Stock Island Combustion Turbine Unit 4 Development and Licensing, Florida Municipal Power Agency

Serving as Project Manager in 2004, Mr. Rollins managed the development of the project description, conceptual design, development of lease and operating agreements, and permitting and licensing of a LM6000 simple-cycle combustion turbine located at Key West, Fla. In addition, studies of the method of project execution, either EPC or traditional design and construction management, were developed along with a detailed schedule and cost estimate.

Combined Cycle Site Selection Study, Florida Municipal Power Agency

In 2004, Mr. Rollins managed the site selection study for a 1x1 F-class combined-cycle plant for Florida Municipal Power Agency (FMPA). The site selection study initially evaluated four FMPA-member generation sites. From those four sites, two were selected for detailed evaluation. The site selection study evaluated fatal flaws and permitting requirements, natural gas supply, water supply, wastewater disposal and transmission interconnection requirements. The study also evaluated construction and operating costs differences between the two sites, the ability to deliver power to the East system and weighed the associated economic impacts of wheeling costs to get power to the East system. The study recommended selection of a site in St. Lucie County. The unit was constructed on the site and entered commercial operation in 2008.

Independent Assessment, Edwards & Angell, Florida

As Project Manager in 2003, Mr. Rollins managed an independent assessment of the current state and cost for the completion of a combined-cycle repowering project in Lake Worth, Fla., for Edwards & Angell, the City of Lake Worth's bond attorney. The study involved developing an estimate to complete the project as a simple-cycle combustion turbine and providing consultation on the development of a new natural gas transportation agreement and a memorandum of understanding between the existing owner, AES, and the new purchaser of the project, Florida Municipal Power Agency. The assignment also involved a review and advisement on numerous other project agreements.

Cane Island 4 Feasibility Study, Florida Municipal Power Agency

Mr. Rollins managed a feasibility study for the installation of a 1 x 1 F-class combined-cycle plant at the existing Cane Island Power Park. Serving as the Project Manager, Mr. Rollins saw that the study addressed site arrangement, the availability of cooling water and the disposal of wastewater.