

JEFF ATWATER
President of the Senate



J.R. Kelly
Public Counsel

STATE OF FLORIDA
OFFICE OF PUBLIC COUNSEL

c/o THE FLORIDA LEGISLATURE
111 WEST MADISON ST.
ROOM 812
TALLAHASSEE, FLORIDA 32399-1400
1-800-540-7039

EMAIL: OPC_WEBSITE@LEG.STATE.FL.US
WWW.FLORIDAOPC.GOV

LARRY CRETUL
Speaker of the
House of Representatives



June 21, 2010

Ann Cole, Director
Division of the Commission Clerk &
Administrative Services
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

RECEIVED-PPSC
10 JUN 21 PM 3:55
COMMISSION
CLERK

Re: Docket No.: 090368-EI


Dear Ms. Cole:

Enclosed for filing on behalf of the Office of Public Counsel is the original and fifteen (15) copies of the Direct Testimony of Kenneth J. Slater and Patricia Merchant.

Please indicate the time and date of receipt on the enclosed duplicate of this letter and return it to our office.

Respectfully submitted,

J.R. KELLY
PUBLIC COUNSEL


Patricia A. Christensen
Associate Public Counsel
Office of Public Counsel
c/o The Florida Legislature
111 West Madison Street
Room 812
Tallahassee, FL 32399-1400

Attorney for the Citizens
of the State of Florida

COM 5
APA 1
ECR 6
GCL 1
RAD 1
SSC
ADM
OPC
CLK C.R.P.R.

DOCUMENT NUMBER DATE
05152 JUN 21 09
FPSC-COMMISSION CLERK

090368-EI

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing Testimony of
Kenneth Slater and Patricia Merchant has been furnished U.S. Mail to the following parties on
this 21st day of June, 2010.

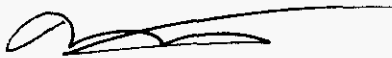
Keino Young
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Paula K. Brown
TECO
P.O. Box 111
Tampa, FL 33601-0111

James Beasley
Jeffry Wahlen
Ausley Law Firm
P.O. Box 391
Tallahassee, FL 32302

John W. McWhirter, Jr.
c/o McWhirter Law Firm
P.O. Box 3350
Tampa, Florida 33601

Vicki Gordon Kaufman
Jon C. Moyle, Jr.
118 North Gadsden Street
Tallahassee, FL 32301



Patricia A. Christensen
Associate Public Counsel

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Review of the continuing need and
Cost associated with Tampa Electric
Company's 5 Combustion Turbines and
Big Bend Rail Facility.

Docket No. 090368-EI

Filed: June 21, 2010

DIRECT TESTIMONY

OF

KENNETH J. SLATER

On Behalf of the Citizens of the State of Florida

J.R. Kelly
Public Counsel

Office of Public Counsel
c/o The Florida Legislature
111 West Madison Street
Room 812
Tallahassee, FL 32399-1400

Attorney for the Citizens
Of the State of Florida

DOCUMENT NO. DATE
05152-106210
FPSC - COMMISSION CLERK

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Review of the continuing need and
Cost associated with Tampa Electric
Company's 5 Combustion Turbines and
Big Bend Rail Facility.

Docket No. 090368-EI

Filed: June 21, 2010

DIRECT TESTIMONY

OF

KENNETH J. SLATER

On Behalf of the Citizens of the State of Florida

J.R. Kelly
Public Counsel

Office of Public Counsel
c/o The Florida Legislature
111 West Madison Street
Room 812
Tallahassee, FL 32399-1400

Attorney for the Citizens
Of the State of Florida

1
2 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

3
4 In re: Review of the continuing need
5 and cost associated with Tampa Electric
6 Company's 5 Combustion Turbines
7 and Big Bend Rail Facility
8
9

Docket No. 090368-EI

Filed: June 21, 2010

10 **DIRECT TESTIMONY OF KENNETH J. SLATER**

11 **ON BEHALF OF**

12 **OFFICE OF PUBLIC COUNSEL**

13
14 **I. INTRODUCTION AND QUALIFICATIONS**

15
16 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

17 **A.** My name is Kenneth J. Slater. My business address is P.O. Box 550189, Atlanta,
18 Georgia 30355.

19
20 **Q. BY WHOM AND IN WHAT CAPACITY ARE YOU EMPLOYED?**

21 **A.** I am President of Slater Consulting, which I founded in August 1990. The firm is a small
22 engineering-economic and management consultancy with particular expertise in energy
23 and public utility matters. The services that the firm offers to various participants in the
24 utility business include analysis of supply/demand options, reliability, operating
25 situations and events, new technologies and industry developments, strategic decisions,
26 public policy matters and ratemaking issues.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

Q. WHAT IS YOUR EDUCATIONAL BACKGROUND?

A. I obtained a Bachelor of Science degree in Pure Mathematics and Physics in 1960 and a Bachelor of Engineering degree in Electrical Engineering in 1962, both at the University of Sydney, Australia. I also received a Master of Applied Science degree in Management Sciences at the University of Waterloo in Ontario, Canada in 1974.

Q. PLEASE PROVIDE A BRIEF DESCRIPTION OF YOUR PROFESSIONAL EXPERIENCE.

A. Since 1957, I have been employed in the electric and gas utility industries in Australia, Canada, and the United States. In Australia, from 1957 to 1969, I was employed by the Electricity Commission of New South Wales ("ECNSW"), a mostly coal-fired electric utility and the largest electric utility in Australia. At ECNSW, I worked in the construction, planning and operation of that system's generating plants and transmission network and, in my final position, was responsible for the day-to-day operation of one of the six regions comprising that system.

From 1969 until 1983, I worked in the Canadian utility industry, initially at Ontario Hydro, one of North America's largest electric utilities, where I headed the Production Development Section of the utility's Operating Department. There I developed computer models, including one that for more than 20 years produced the daily generation dispatch schedules for all of the Ontario Hydro generating resources (hydraulic, pumped storage and nuclear plants, coal, oil and gas-fired units). Another of the models that I developed at Ontario Hydro was the original version of PROMOD (a

1 utility planning and reliability program) which was used within Ontario Hydro for
2 coordination and optimization of production planning and resource management, as well
3 as evaluating purchase and sale opportunities, fuel supplies and important outages.

4 Following Ontario Hydro, I became Manager of Engineering at the Ontario
5 Energy Board (Ontario's utility regulatory commission) and later I started my own
6 consulting practice. I consulted widely in Canada and the United States and for a year
7 was the Research Director for a Royal Commission on Electric Power Planning in
8 Ontario. During this time I continued my work on Electric Power System models
9 including being a major developer of PROMOD III[®] (which has now become PROMOD
10 IV[®]), a widely used and recognized electric utility planning and reliability program. I
11 believe this model is well known to this Commission.

12 In 1983, I joined Energy Management Associates, Inc. ("EMA") in Atlanta, where
13 I was Senior Vice President and Chief Engineer. EMA provided industry specific
14 software and consulting services to the electricity and gas supply industries. At EMA,
15 after initially contributing to the firm's utility software development functions, I became
16 the head of its consulting practice. In this position, I lead and made significant
17 contributions to a number of consulting engagements related to valuation or analysis of
18 power supplies and power supply contracts, supply/demand planning, damages
19 assessments, operating reserve requirements, replacement power cost calculations, utility
20 merger valuations, operational integration of utility systems, power pooling, system
21 reliability, ratemaking, power dispatching and gas supply studies. At EMA, in addition
22 to continuing my work on the PROMOD III modeling program, I also designed a gas
23 supply model for gas distribution utilities called SENDOUT[®].

1 I left EMA in 1990 to found Slater Consulting, which I have already described.

2 A copy of my resume is included as Exhibit KJS-1.

3
4 **Q. HAVE YOU TESTIFIED AS AN EXPERT WITNESS IN THE PAST?**

5 **A.** Yes. I have provided expert testimony in regulatory proceedings in California, Delaware,
6 Florida, Georgia, Idaho, Indiana, Iowa, Louisiana, New Mexico, New York, North
7 Carolina, Nova Scotia, Oklahoma, Ontario, Pennsylvania, Prince Edward Island, South
8 Carolina, Texas, Virginia and Wisconsin, and at the Federal Energy Regulatory
9 Commission. As well as providing opinion to the Surface Transportation Board, I have
10 appeared in United States Federal Court, Federal Bankruptcy Court, State Courts in
11 Florida, Missouri, Nebraska, Texas and Virginia, and in civil arbitration proceedings in
12 Georgia, Louisiana, Nevada, New England, New York, Pennsylvania and Texas. I have
13 also served on many occasions as an expert examiner for a Royal Commission in Ontario,
14 which was enquiring into the electric power planning in the Province of Ontario. A list
15 of my testimony since 1983 is attached to this testimony as an exhibit. See Exhibit KJS-
16 2.

17
18 **II. PURPOSE OF TESTIMONY**

19
20 **Q. FOR WHOM DO YOU APPEAR IN THIS PROCEEDING?**

21 **A.** I am appearing for the Citizens of Florida, through the Office of Public Counsel
22

23 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

1 A. In Order No. PSC-09-0283-EI, this Commission set conditions, the fulfillment of which
2 was required for Tampa Electric Company (“TECO”) to recover the amounts at issue in
3 this proceeding. With regard to the five CTs, the Commission required that the CTs be in
4 commercial operation by December 31, 2009, and that they must be needed for load
5 generation.

6 The five CTs entered commercial operation between April 20 and August 26 of
7 last year, satisfying the first condition. I have been asked by the Office of Public
8 Council to provide my analysis and opinion as to whether the second condition has been
9 met.

10

11 **Q. ISN'T THAT SIMPLY A MATTER OF WHETHER THE FIVE CTS FIT WITHIN**
12 **TECO'S 20% RESERVE MARGIN TARGET?**

13 A. At first sight, one would have thought that the 20% reserve margin would be used to
14 decide the issue. However, both Staff and TECO have advanced other reasons beyond
15 the capacity requirement for a 20% reserve margin as to why the five CTs should be
16 considered “needed for load generation.”

17 These reasons include:

- 18 (i) provision of reserves during outage of Big Bend Unit 1 over winter peak period;
19 (ii) provision of Black-Start capability;
20 (iii) provision of quick-start reserve capability which is less disruptive than using load
21 interruptibility;
22 (iv) dual fuel capability saves gas during shortages; and
23 (v) lower heat rate than other TECO peaking units results in fuel savings.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

Q. DID THE COMMISSION PROVIDE ANY INSIGHT INTO WHAT IT MEANT BY “NEEDED FOR LOAD GENERATION?”

A. Yes. Regarding the “needed for load generation” requirement, Order No. PSC-09-0283-El states at page 6:

TECO shall only move forward with the units if the capacity is needed. This condition will help ensure that TECO will only move forward with its plans for the CTs if it is justified in terms of load requirements.

It appears from this statement that the Commission considered “need” for the CTs to be related only to “load requirements.” There is no mention of black start capability, quick start reserves versus load interruptibility, one-time outages over the winter peak period, dual fuel capability or fuel savings.

III. THE 20% RESERVE MARGIN CRITERION

Q. WHAT IS THE ORIGIN OF THE 20% RESERVE MARGIN REQUIREMENT FOR FLORIDA’S INVESTOR OWNED UTILITIES?

A. The 20% reserve margin requirement for the Florida IOUs resulted from Docket No. 981890-EU, (In re: Generic Investigation into the Aggregate Electric Utility Reserve Margins Planned for Peninsular Florida.)

I gave testimony in this proceeding and recall that there were probably four issues which were of considerable concern. These were the load excursions due to abnormal weather, the uncertain reliability of demand-side resources, the reliance to be placed on other resources (such as interstate purchases) which were not represented by actual

1 generating units in peninsular Florida, and the inability of the Florida Regional
2 Reliability Council's reliability studies to properly account for these matters. My own
3 testimony discussed these and other matters as well as the reliability impacts of a robust
4 competitive wholesale power market.

5 At the time Docket No. 981890-EU was opened, the Florida IOUs were each
6 planning for a 15% reserve margin. That is each utility was planning to have "installed"
7 capacity resources (generating units, purchased power agreements) with a total MW
8 capacity, at the time of the forecast annual peak load, 15% greater than the peak firm
9 load. Firm load is total MW load less the forecasted MW of interruptibility from
10 demand-side programs.

11 There was no conclusive investigation completed under this Docket. The IOUs
12 offered to increase their reserve margin contributions from 15% to 20%. The offer was
13 accepted, and the matter ended.

14
15 **Q. AGAINST WHAT EVENTS IS THE 20% RESERVE MARGIN SUPPOSED TO**
16 **PROTECT?**

17 **A.** The 20% reserve margin results from a forecast calculation using installed capacity (as
18 opposed to available capacity), forecast normal weather peak load (as opposed to actual
19 load), and expected interruptibility from demand-side programs. Thus, the 20% reserve
20 margin is meant to take care of generating unit outages, unavailability of PPAs,
21 unexpected load additions, weather induced load excursions and unreliability of demand-
22 side resources. In addition, the reserve margin provides capacity to perform
23 generation/load regulation.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21

IV. RECENT TECO RESERVE MARGIN PLANNING

Q. FOR WHAT LEVEL OF RESERVES HAS TECO BEEN PLANNING IN THE YEARS PRIOR TO THE YEARS IN WHICH THE FIVE NEW CTS HAVE BECOME AS ISSUE?

A. From TECO’s Ten Year Site Plans (“TYSPs”), I have constructed Exhibit KJS-3, for the years 2005 through 2010, to show TECO’s planned reserve levels. From this exhibit, it is easy to see that in the 2005 through 2007 TYSPs, TECO had planned to have an installed reserve margin close to, but not significantly less than 20% for all years covered by those site plans.

Q. FOR WHAT LEVEL OF RESERVES IS TECO PLANNING FOR FUTURE YEARS IN WHICH THE FIVE NEW CTS ARE INSTALLED?

A. In Exhibit KJS-3, it is again easy to see that in the 2008 through 2010 TYSPs, TECO has returned to the 20% reserve margin target as soon as the excess reserves from the installation of the five new CTs has been absorbed by forecast load growth. According to the 2010 TYSP, the reserve margin will not be returned to the 20% level until 2013.

Q. WAS TECO IN NEED OF EXTRA RESERVES IN THE SUMMERS OF 2009 THROUGH 2012?

1 A. Not that I have been able to discern. There is nothing about their loads and resources
2 which appear to create a need for additional reserves in the summers of 2009 through
3 2012.

4
5 **Q. DID TECO NEED TO PLAN FOR THE INSTALLATION OF ANY OF THE FIVE**
6 **CTS IN ORDER TO MEET THEIR 20% PLANNED RESERVE MARGIN**
7 **TARGET FOR 2009 OR 2010?**

8 A. In TECO's 2008 TYSP, the 20% reserve margin for the summer of 2009 could have been
9 met without any of the five CTs being installed. The 23.2% reserve margin (984 MW)
10 shown in Exhibit KJS-3 for the year 2009 under the 2008 TYSP would have been
11 reduced to 870 MW (20.5%) if the first two of the five new CTs, which were scheduled
12 to go into service in May 2009, were deferred.

13 For the year 2010, under the same 2008 TYSP, the planned 23.6% reserve margin
14 (1027 MW) was based on the planned installation of all five new CTs. If only two of
15 these CTs were scheduled to be installed in 2009, the 2010 planned reserve margin would
16 have been reduced to 19.7%, sufficient to satisfy the 20% target.

17 Under the 2009 TYSP for the year 2009, had TECO even deferred installing the
18 first two CTs of the five CTs, this would have only reduced the 25.6% reserve margin to
19 22.8%. For the year 2010, the five new CTs underlying the 24.9% reserve margin (1032
20 MW) could have been reduced to one CT and the forecast reserve margin would have
21 been reduced to only 19.5% (808 MW) which is effectively sufficient to satisfy the 20%
22 target.

1 Therefore, under the 20% reserve margin criterion, no CT's were needed to be
2 installed for 2009 summer load requirements. For summer 2010 load requirements, only
3 one or two CTs were needed.

4
5 **V. COVERAGE FOR THE BIG BEND UNIT 1 SCR OUTAGE**

6
7 **Q. DID TECO NEED THE NEW CTS TO SERVE ITS FORECAST LOAD DURING**
8 **THE BIG BEND UNIT 1 SCR OUTAGE?**

9 **A.** No. Over each of three successive winter peak periods, 2007-2008, 2008-2009 and 2009-
10 2010, TECO had an outage of a 400 MW Big Bend unit for SCR installation. It was only
11 during the last of these that TECO was able to make use of the new CTs as part of its
12 capacity mix for the winter peak period. Without the availability of the new CTs, during
13 the winter peak periods of 2007-2008 and 2008-2009 TECO was still able to plan for
14 satisfactory amounts of capacity to serve its load.

15 As can be seen in Exhibit KJS-4, the plans for the three winter peak periods, in
16 successive TYSPs provided similar amounts of capacity. The presence or absence of the
17 new CTs does not appear to have impacted TECOs ability to plan coverage for the
18 outages.

19
20 **Q. DIDN'T TECO EXPERIENCE A LOAD SPIKE DUE TO ABNORMALLY COLD**
21 **WEATHER IN JANUARY 2010 THAT WAS GREATER THAN THE FORECAST**
22 **LOAD?**

1 A. Yes, they did. But, such a load spike is one of the events for which the 20% reserve
2 margin is planned.

3

4 VI. BLACK START CAPABILITY

5

6 Q. WHAT IS A BLACK START?

7 A. A black start occurs when, due to a malfunction, the power system is completely shut
8 down ("black") over a significant area, and must be restarted. Such a restart includes
9 opening circuit breakers to disconnect load, restarting large generating units, re-
10 energizing transmission lines and distribution equipment and then reconnecting load.
11 The difficulty is that for most generating units, a significant power supply from the
12 system is needed in order to run auxiliary equipment during the start-up process until the
13 unit is producing enough output to supply its own auxiliaries.

14 Therefore, a utility's black start plans must include the designation and use of a
15 generating unit or plant which has the ability to start quickly without a power supply
16 from the system, and which also has sufficient capability to start a large fossil unit.
17 Generally, a hydro plant, a large diesel unit or plant, or a CT unit, all of which can be
18 started from a small on-site engine-driven generator, battery supply or a combination of
19 battery supply and compressed air, is chosen to provide this black start capability.

20 NERC requires that there be sufficient black start capability to initiate restoration
21 of the power system.

22

23 Q. HOW MANY OF THE FIVE NEW CTS ARE NEEDED FOR BLACK START
24 PURPOSES?

1 A. At the most, one. In answer to Interrogatory No. 14 from OPC, concerning prior
2 arrangements for providing black start capability for the Tampa Electric system, TECO
3 has replied in part:

4 *Until September 2008, Big Bend CT Unit 1 was Tampa Electric's black*
5 *start unit . . .*

6 From this it is clear that black start requirements are not particularly onerous and one CT
7 is capable of filling the role for TECO. This was confirmed later in Tampa Electric's
8 reply to OPC Interrogatory No.14, where it was stated:

9 *. . . and on July 2, 2009, Bayside Aero Diesel (sic) was designated as Tampa*
10 *Electric's black start unit.*

11 Based on TECO's response, it has designated only one unit as its black start unit, which
12 could have been the first of the five CTs installed. Clearly, the need for black start
13 capability cannot be greater than just the first of the five new CTs, Bayside CT 6.

14
15 **Q. IS BIG BEND CT 4 DESIGNATED AS A BLACK START UNIT?**

16 A. No.

17 TECO's reply to OPC's Interrogatory No 14, which was attributed to Mr.
18 Hornick, makes no mention of Big Bend CT 4 being of any importance regarding black
19 start capability. However, at page 26 of his testimony, TECO's witness Mr. Hornick
20 states:

21 *Postponement of Big Bend CT 4 was not a realistic or reliable option*
22 *because postponement would have left Big Bend Station without black*
23 *start capability,*

1 At the very least this statement in Mr. Hornick's testimony is a gross exaggeration of the
2 value to TECO of black start capability in excess of NERC's requirement.

3
4 **VII. QUICK START RESERVE CAPABILITY**

5
6 **Q. PLEASE EXPLAIN SPINNING AND QUICK START RESERVES?**

7 **A.** In order to function properly, a power system needs to have operating reserve generating
8 capacity available to it that is not presently loaded, but which can very quickly provide
9 generation. The system needs a portion of that capacity to be already connected to the
10 system and capable of providing immediate output. We call this "spinning reserve,"
11 because it is generating capacity already synchronized to the system, spinning with it and
12 ready for loading.

13 A different portion of that operating reserve capacity is needed to be available
14 within 5 or 10 minutes. (Florida uses 10 minutes). (See Mr. Hornick's testimony at page
15 28.) This portion includes spinning reserve, and also includes capacity which is not
16 running, but which can be started and loaded within 10 minutes. This generating capacity
17 that can be started and loaded within 10 minutes is called Quick Start capacity. Load
18 which can be interrupted within 10 minutes is also treated as quick start capacity.

19
20 **Q. DOES TECO NEED THE QUICK START RESERVE CAPABILITY OF THE**
21 **NEW CTS?**

22 **A.** No.

23 Tampa Electric's witness Mark Hornick has presented two facets of TECO's
24 perceived need for the quick start capability of the new CTs. (See Mark Hornick

1 testimony at page 28 and top of page 29.) First, he sees the quick start capability as a
2 replacement for other forms of reserve required to be available within 10 minutes. That
3 is, a replacement for spinning reserve and the interruption of interruptible customers.
4 Second, he sees the quick start capability as a way to relieve the interruptible customers
5 of the disruption of being interrupted. The 10 minute reserve requirement that TECO is
6 required to contribute to the Florida interconnection is only about 86 MW (See 2010
7 TYSP page 56). Since TECO must also provide on-line spinning reserve capacity for
8 regulation, it is difficult to see how the quick start capability of more than one of the new
9 60 MW CTs can be useful. And, since TECO possesses more than 140 MW of
10 interruptible load (see reply to OPC Interrogatory No 10), even that quick start capability
11 is not needed.

12 As to TECO's argument regarding relieving the interruptible customers of the
13 burden of interruption (for which they receive discounted rates), it is instructive to look at
14 the responses to OPC's Interrogatories 9 and 10. From these responses, we can see that
15 in the five years (2004 through 2008) prior to the installation of the new CTs, the
16 interruptible customers were interrupted a total of only 8 times, averaging less than 45
17 minutes each time. The total of 6 hours of interrupted service over the five year period is
18 not burdensome especially given the discounted rates received. Even under the 2009
19 TYSP, with the addition of only one or two CTs, and with the January 2010 load spike,
20 the history of interruption would not have increased significantly. Thus, this is not a
21 burden that needed to be removed.

22 To require customers to pay even more money for CTs that are not needed to
23 meet the load requirement, so that certain customers who receive discounted rates to be

1 interrupted are not interrupted, is illogical and unfair. Interruptible customers receive
2 discounted rates to make available megawatts that can be freed up in case of extreme load
3 requirements or generation shortages, so that the system does not need to be built to cover
4 these unusual events.

5
6 **VIII. DUEL FUEL CAPABILITY OF BIG BEND CT**

7
8 **Q. IS DUEL FUEL CAPABILITY OF A NEW CT NEEDED BY THE TECO**
9 **SYSTEM?**

10 **A.** While I believe that it is beneficial for the Tampa Electric system to have the capability to
11 run some of its CT capacity on oil during times of natural gas shortages, I don't believe
12 that one can say that TECO needed the Big Bend No. 4 CT to provide this capability. At
13 Polk, there is 300 MW of modern oil-fired CT capacity, six times the capacity of the Big
14 Bend CT.

15
16 **IX. CT FUEL SAVINGS**

17
18 **Q. DOES TECO CLAIM THAT THE NEW CTS PROVIDE FUEL SAVINGS?**

19 **A.** Yes. In his testimony (see page 27) TECO witness Mark Hornick claims that in 2009 and
20 2010, the five new CTs provided fuel cost savings of \$4 million.

21 It is my experience that the addition of some extra new peaking capacity to a
22 power system almost always results in a reduction to that system's fuel cost. In this case
23 TECO is claiming only \$4 million in fuel savings during 2009 and 2010, even though this

1 period included the unusually cold weather in January which caused a significant spike in
2 TECO's load.

3 To put this \$4 million into perspective, it is only about 2% of the more than \$200
4 million capital cost of the CTs. (See Hornick testimony at page 30.) Further, it is very
5 much smaller than the annual cost to TECO's rate payers of having these five new CTs
6 on the system. In my opinion, it is most unlikely that any analysis could show that fuel
7 savings from these CTs would ever be more than a small fraction of the cost of having
8 them. There is no need for TECO to have installed the five CTs in order to save fuel
9 costs.

10
11 **X. CONCLUSIONS**

12
13 **Q. WHAT HAVE YOU CONCLUDED FROM YOUR ANALYSIS OF THE NEED**
14 **FOR THE FIVE CTS?**

15 **A.** I have concluded that there are only two reasons why the five new CTs could be needed
16 by TECO. The main reason is to maintain installed capacity reserves at the 20% level. A
17 second reason is the long-term replacement of the black start capability previously
18 provided by Big Bend CT No 1.

19 As I have discussed above, only one or two of the five CTs was needed to meet a
20 planned 20% installed capacity reserve requirement for the years 2009 and 2010. And, as
21 I have also discussed above, only one CT was needed to provide black start capability.
22 Further, I have shown that none of the other reasons advanced by Staff and TECO as to
23 why the CTs were "needed for load generation" can be recognized as real needs.

1 Therefore, I have concluded that, at least three of the five new aero-derivative CTs have
2 not been needed for load generation.

3

4 **Q. DOES THAT CONCLUDE YOUR TESTIMONY?**

5 **A. Yes, it does.**

6

7

Technical Qualifications
and
Professional Experience

Kenneth John Slater

EDUCATION

B.Sc., Pure Mathematics and Physics, Sydney University, 1960
B.E., Electrical Engineering, Sydney University, 1962
M.A.Sc., Management Sciences, University of Waterloo, 1974

PROFESSIONAL AFFILIATIONS

Association of Professional Engineers of Ontario
- Registered Professional Engineer
Institute of Electrical and Electronics Engineers
- Life Member
- Member of Power Engineering Society
- Past member of Power System Engineering Committee
- Past member of System Economics subcommittee and working group

PROFESSIONAL EXPERIENCE

1990 - In August 1990, Mr. Slater founded Slater Consulting in Atlanta, where he is President and heads a small group of eight experienced consultants providing specialized consulting services and expert testimony for a variety of participants in the electricity industry. These participants include utilities, qualifying facilities, wholesale generators, customers, investors, suppliers, regulators and independent system operators.

Slater Consulting assignments, led by Mr. Slater, have included:

- Assistance to legal counsel for creditors of a bankrupt utility.
- Analysis and testimony for Texas – New Mexico Power Company regarding prudent alternatives to their decision to build TNP ONE Unit 2.

Docket No. 090368
Qualifications and Experience
Exhibit KJS-1
Page 2 of 11

- Assistance and analysis for a utility and its legal counsel during litigation regarding damages sustained because of interference in a proposed merger of that utility with another utility.
- Analyses and testimony before the New York PSC for Sithe Energies, Inc., in certification proceedings and in numerous avoided cost and buy-back rate proceedings.
- Analyses and testimony for the Independent Power Producers of New York in QF curtailment, buy-back rate and back-up rate proceedings before the New York PSC.
- Analysis and testimony for Southwestern Public Service Co. at FERC and before the New Mexico Public Service Commission regarding the lack of production cost savings from the proposed merger of Central & South West Utilities with El Paso Electric Company.
- Analyses and testimony before the Public Service Commission for Independent Power Producers in Florida regarding QF curtailment.
- Analyses and testimony in Civil Court cases for Independent Power Producers in Florida regarding the correct implementation of contractual dispatchability provisions.
- Testimony before regulatory commissions in New York, Pennsylvania, Texas, Florida and Louisiana regarding various aspects of emerging competition.
- Analyses and testimony before the Georgia Public Service Commission on behalf of Mid-Georgia Co-gen and others regarding avoided costs on the Georgia Power / Southern Company system.
- Retrospective analysis and testimony before the Georgia Public Service Commission on behalf of Georgia Power Company regarding the Prudence of Georgia Power's 1978-1980 investment in the Rocky Mountain pumped storage plant.
- Testimony before the regulatory commissions of Texas, Virginia and Wisconsin regarding the fair allocation of utility revenue requirements to individual customer classes.

Docket No. 090368
Qualifications and Experience
Exhibit KJS-1
Page 3 of 11

- Testimony before the United States Bankruptcy Court regarding the value of the non-nuclear assets of Cajun Electric Power Co-operative, Inc.
- Analyses for various generating companies and investors of the future dispatch and associated energy revenues for numerous generating resources in the Eastern United States.
- Operational planning analyses for various generating companies regarding numerous existing and new generating resources in the Eastern United States.
- Analyses and testimony regarding QF avoided costs before State Regulatory Commissions in North Carolina and South Carolina.
- Analyses and testimony in Courts and before arbitrators for the non-operating owners of the South Texas Nuclear Project, the Cooper nuclear unit in Nebraska, and the Millstone 3 nuclear unit in Connecticut concerning the replacement power costs during extended outages
- Analyses and testimony at FERC on behalf of Arkansas Electric Energy Consumers, Inc. regarding the Entergy System Agreement.
- Analyses and testimony at the arbitration of disputes arising out of power purchase arrangements in Nevada, Georgia and Texas.
- Analyses and testimony on behalf of Union Pacific Railroad regarding alleged inadequate deliveries of coal to generating plants and associated damages.
- Analyses and testimony before State Regulatory Commissions regarding the need for generation facilities in Florida and Wisconsin
- Analyses and testimony at FERC on behalf of Calpine Corporation regarding Southern Company affiliate PPAs.
- Representations, analyses and testimony in United States Bankruptcy Court on behalf of the Official Committee of Equity Holders in the bankruptcy of Mirant Corporation.

In connection with these and other assignments, Mr. Slater has appeared as an expert in regulatory proceedings in Delaware, Florida, Georgia, Louisiana, New Mexico, New York, North Carolina, Oklahoma, Pennsylvania, South Carolina, Virginia, Wisconsin and Texas, and at the Federal Energy Regulatory Commission. He has also appeared in United States Federal Court, United States Bankruptcy Court, state courts in Missouri, Virginia, Texas and Florida, and civil arbitration proceedings in Georgia, Nevada, New England, Pennsylvania and Texas.

1983-90

As Vice President and Chief Engineer for Energy Management Associates, Inc., in Atlanta, Mr. Slater was responsible for giving technical direction for the development and maintenance of Energy Management Associates, Inc.'s state-of-the-art software products. As Senior Vice President and Chief Engineer, Mr. Slater was head of Energy Management Associates, Inc.'s utility consulting practice. He led or made significant contributions to a number of important consulting engagements, including:

- Study and regulatory testimony concerning the value to the Idaho Power Company system of the interruptibility provisions in F.M.C.'s supply contract.
- Generation planning studies for Cincinnati Gas and Electric Company, San Diego Gas & Electric Company and the City of Austin Electric Utility Department.
- Assistance to legal counsel during regulatory litigation regarding the hostile takeover of a major Canadian gas utility holding company (union Enterprises), including definition and examination of issues, selection of witnesses, and analysis of the opposing case.
- Development and demonstration of a method for the allocation of Inland Power Pool's operating reserve requirement among its members.
- Analysis of replacement power costs during the outage of Niagara Mohawk Power Corporation's Nine Mile Point #1 nuclear unit.

Docket No. 090368
Qualifications and Experience
Exhibit KJS-1
Page 5 of 11

- Reserve margin assessments for Public Service Company of Indiana, Alleghany Power System Inc., Iowa Electric Light & Power Company, San Diego Gas & Electric Company, and El Paso Electric Company.
- Examination of the gas supply situation in Southern California and regulatory testimony regarding “unbundling” of storage service.
- Evaluation of the operational, planning and financial impacts of merging two large Eastern U.S. electric utilities.
- Study and regulatory testimony regarding the value and appropriate level of interruptible demand for the Union Gas system.
- Evaluation of the benefits of increased operational integration of a group of electric utilities.
- Assistance for Tucson Electric Power Co. and its legal counsel during arbitration of its dispute with San Diego Gas and Electric Company regarding the operation of a large power sale agreement.
- Analysis of the economics of a third A/C transmission line linking California and Oregon.
- A seminar on “Power Pooling and Inter-Utility Interconnections” for the management of the Central Electricity Generating Board and other parties involved in U.K. privatisation.
- Determination of the benefits of pool membership for two electric utilities in the Northeast U.S..
- Assistance for Riley Stoker Corporation and its legal counsel with the arbitration of direct and consequential damages arising out of the late completion and early poor performance of two major coal-fired generating units. The work included case examination and development, detailed reconstruction of events, analysis of all financial and economic consequences of project delay and performance with separation of fault, analysis of opponent’s case and assistance with cross-examination,

direct and rebuttal testimony, and assistance with oral and written argument.

Mr. Slater's consulting assignments included the areas of power system planning, operations, reliability, economics, ratemaking and assessment of the worth of unconventional resources. He appeared as an expert witness in regulatory hearings in Idaho, Iowa, Indiana, Florida, California, Texas, Ontario and Nova Scotia and in civil arbitration proceedings in Louisiana and Pennsylvania.

Mr. Slater continued to contribute to the development of E.M.A.'s utility software products. His contributions included further capabilities for the PROMOD model and being a principal developer of SENDOUT[®], E.M.A.'s proprietary supply model for gas utilities.

1976-83

As President of Slater Energy Consultants, Inc., in Toronto, Mr. Slater performed or made major contributions to a number of important assignments at the forefront of the electrical energy industry. These included:

- The Export of Electrical Power
....a study for the Ontario Ministry of Industry and Tourism.
- Load Management Studies
....for the Detroit Edison Company.
- California Utilities Increased Integration Study
....for San Diego Gas & Electric Company, Southern California Edison Company, Los Angeles Department of Water and Power, and Pacific Gas and Electric Company.
- Bradley-Milton 500kV Transmission Lines
....a study for the Ontario Ministry of Energy and the Interested Citizens Group (Halton Hills).
- Solar Energy and the Conventional Energy Industries
....a study for the Canadian Ministry of Energy, Mines and Resources.
- The Expert Examiner for the Ontario Royal Commission on Electric Power Planning during hearings into Priority Projects.

- Various Studies into Unconventional Electrical Resources
....for the P.E.I. Institute of Man and Resources and the P.E.I. Energy Corporation.
- Analysis and Expert Testimony in Support of Lower Demand Rates for Lake Ontario Steel Company, Ivaco Industries Limited and Atlas Steels.
- Claims for Consequential Damages of the Roseton Boiler Implosions
....for Consolidated Edison Company, Central Hudson Power Company and Niagara Mohawk Power Corporation.
- A study of the Potential for Megawatt Scale Wind Power Plants in Electrical Utilities
....for the Canadian Ministry of Energy, Mines and Resources.

These studies have included the need to create special and unique power system models and solution techniques and have addressed significant issues of major importance in the electrical supply industry. Mr. Slater also has carried out assignments for the following clients:

Nova Scotia Power Corporation.
The Government of Prince Edward Island.
The New Brunswick Electric Power Commission.
Ontario Energy Corporation.
Ontario Energy Board.
Go-Home Lake Cottagers Associations.
Saskatchewan Power Corporation.
FMC Corporation.
FMC of Canada Limited.
ERCO Industries Limited.
Canadian Occidental Petroleum Ltd.
State Energy Commission (Western Australia).
Toronto District Heating Corporation.

In connection with his consulting activities, Mr. Slater gave expert testimony in the state of Idaho and in the provinces of Ontario and Prince Edward Island.

Mr. Slater also was a principal developer of PROMOD III[®], a proprietary electric utility production cost and reliability model owned by Energy Management Associates, Inc. This model was

used by over seventy utilities in Canada, the United States, Japan and Australia. Its wide acceptance made it the "Industry Standard" in the U.S..

1975-76 For 12 months, Mr. Slater was a private consultant contracted to the Royal Commission on Electric Power Planning, in Ontario, as its Research Director. During this time, he directed and participated in various studies of different aspects of electricity supply. He was also a member of the panel of expert examiners in a number of the Royal Commission's public hearings.

1974-75 As Manager of Engineering at the Ontario Energy Board, Mr. Slater was heavily involved in public hearings into Ontario Hydro's System Expansion Plans and Financial Policies, and into Ontario Hydro's Bulk Power Rates.

During this time, he provided much of the power system engineering input necessary for the start-up and formulation of the public hearing process related to Ontario Hydro. He also provided the engineering input for the regulation of Ontario's three major investor owned gas utilities.

1969-74 As Engineer, and then Senior Engineer, heading the Production Development Section of Ontario Hydro's Operating Department, Mr. Slater was engaged in developing computational procedures and computer programs for Production Economics and Resource Management.

Major contributions included (1) the development and implementation of the computer program which, for more than 20 years, produced the daily generation schedule for the Ontario Hydro System, (2) the formulation of a Stochastic System Model to coordinate and optimize the production planning, maintenance planning, interchange planning and resource management of the Ontario Hydro System, and (3) the development of PROMOD, a Probabilistic Production Cost and Reliability model, the first version of the "core" of the Stochastic Model in (2) above.

As a member of the project group implementing the Operating Department's Data Acquisition and Computer System, he headed a work unit responsible for providing the application programs

Docket No. 090368
Qualifications and Experience
Exhibit KJS-1
Page 9 of 11

related to generation scheduling, power interchange and resource management. Also, he held responsibilities in the areas of policy determination, analytical techniques and the planning of future applications.

1967-69 As Assistant Engineer Area Operation/Sydney West (Professional Engineer, Grade 3) with the Electricity Commission of New South Wales, Mr. Slater was responsible for the day-to-day operation of the Sydney West Area (approximately 20% of the State System).

He supervised the day-to-day work of more than 18 operators as they provided safe working conditions for Commission staff and others on system apparatus, and as they provided safe, secure, reliable and economic operation of this portion of the State System.

He performed the liaison function with head office staff, other divisions and customers on all operating activities, directed the performance of complicated operating procedures and trained both regular and emergency operators.

While he was in this and his previous position, Mr. Slater was responsible for the design and manufacture of the live line testing devices used by the Commissions' operators and linemen.

As well, he assumed responsibility for the preparation and execution of "black start" exercises and for the arrangement and detailing of complicated switching for major rearrangements and commissionings on the State System. He also developed original computer applications.

1962-67 Mr. Slater was a Professional Engineer Grades 1 and 2 at The Electricity Commission of New South Wales, engaged in a variety of functions within the areas of Power Station Construction, Generation Planning, System Operation and Load Dispatch.

1957-62 Mr. Slater was a Junior Professional Officer at the Electricity Commission of New South Wales attending university and undergoing on-the-job training in power station and substation design, construction, protection, maintenance, and operation.

PUBLICATIONS & PRESENTATIONS

- “Meeting System Demand”
Canada-USSR Electric Power Working Group Electrical Seminar,
Montreal, March, 1973.
- “Stochastic Model for Use in Determining Optimal Power System Operating Strategies.”
Power Devices and Systems Group, Electrical Engineering Department,
University of Toronto – 1973.
- “Economy-Security Functions in Power System Operations”
IEEE Power System Economic Subcommittee Work Group Paper
IEEE T.P.A.S. Sept/Oct 1975 p. 1618.
- “A Large Hydro-Thermal Scheduling Model”
TIMS/ORSA
Miami, November 1976.
- “Generation System Modeling for Planning and Operations”
Atlantic Regional Thermal Conference
Charlottetown, June 1978.
- “The Feasibility of Electricity Export from CANDU Nuclear Generation”
Canadian Nuclear Association
Ottawa, June 1978.
- “Evaluation of the Worth of System Scale Wind Generation to the Prince Edward Island Electrical Grid.”
IEEE Canadian Conference
Toronto, Ontario 1979.
- “The Results of a Study Examining the Possible Impact of Solar Space Heating on the Electrical Utility in New Brunswick.”
The Potential Impacts of the Deployment of Solar Heating on Electrical Utilities – A workshop sponsored by the Canadian Department of Energy, Mines and Resources
Ottawa, May 1980.
- “Reliability Indices: Their Meaning and Differences”
Planmetrics/Energy Management Associates, Inc. 8th Annual National Utilities Conference
Chicago, May 1980.

“Description and Bibliography of Major Economy-Security Functions

Part I - Description

Part II - Bibliography (1959-1972)

Part III - Bibliography (1973-1979)”

IEEE Power System Economics Subcommittee Working Group
Papers (3).

IEEE TPAS January 1981, p.211, p.214, p. 224.

“PROMOD III[®] Evaluation of the Worth of Grid Connected WECS.”

Fifth Annual Wind Energy Symposium, Ryerson Polytechnical Institute
Toronto, December 1982.

“Probabilistic Simulation in Power System Production Models”

China-U.S.A. Power System Meeting, Electrical Power Research Institute
of China

Tianjin, China, June 1985.

“Computer Modeling of Wheeling Arrangements”

Electricity Consumers Resource Council Seminar
Washington, D.C., September 1985.

“Power Systems Reliability Improvement Benefits – A Framework for Analysis”

ASME Energy-Sources Technology Conference
Dallas, February 1987.

Kenneth J. Slater

List of Expert Testimony (1983-2010)

1. Idaho Public Utilities Commission Case No. U-10006-185
Re: Value of Interruptibility Provisions in FMC Power Supply Contract
For: FMC Corporation

2. Idaho Public Utilities Commission Case No. U-10006-197
Re: Idaho Power Company Generation Planning
For: FMC Corporation

3. Iowa State Commerce Commission Docket No. RPU-83-23
Re: Appropriate Generation Reserve Margin for Iowa Electric Light and Power Company
For: Iowa Electric Light and Power Company

4. Idaho Public Utilities Commission Case No. U-10006-265
Re: Usefulness of Power Supply Models
For: FMC Corporation

5. Idaho Public Utilities Commission Case No. U-10006-265A
Re: Value of Interruptibility of FMC Load
For: FMC Corporation

6. Florida Public Service Commission Case No. 830470-EI
Re: Ratemaking Treatment for New Generation Asset (Crystal River 5) and Reasonableness of Certain FPC PROMOD III® Analyses
For: Florida Power Corporation

7. Indiana Public Service Commission Cause No. 37414
Re: Appropriate Reserve Margin
For: Public Service Company of Indiana

8. American Arbitration Association Case 71 199 0072 84
Cajun Electric Power Cooperative, Inc., and Riley Stoker Corporation
Re: Project delay, Operational Problems and Replacement Power Costs
For: Riley Stoker Corporation

9. Ontario Energy Board
Takeover of Union Gas Corporation by Unicorp Canada Corporation
Re: Utility Management
For: Unicorp Canada Corporation

10. Florida Public Service Commission Case No. 870220-EI
Re: Ratemaking Treatment for Nuclear Generation Asset,
(Crystal River 3)
For: Florida Power Corporation

11. California Public Utilities Commission Docket No. I 87-03-036
Re: Unbundling of Gas Storage Service
For: San Diego Gas & Electric Company

12. Texas Public Utility Commission Docket No. 8363
Re: Generation Reliability
For: El Paso Electric Company

13. Nova Scotia Board of Commissioners of Public Utilities
- Application of Nova Scotia Power Corporation for Approval to Change Rates.
{Approximately 1989}
Re: Rate Design Issues
For: Nova Scotia Power Corporation

14. Texas Public Utility Commission Docket No. 8702 et al
Re: "Used and Useful" & Generation Planning
For: Gulf States Utilities Company

15. Ontario Energy Board
 - Re: Value of Interruptible Customers
 - For: Union Gas Corporation

16. Texas Public Utility Commission No. 9945
 - Re: Generation Reliability
 - For: El Paso Electric Company

17. Texas Public Utility Commission Docket No. 10200
 - Re: Generation Alternatives to TNP One Unit 2
 - For: Texas - New Mexico Power Company

18. American Arbitration Association Case 55 110 0044 91
 - P. J. Dick Contracting Company v's D/R Hydro Company and Voith Hydro, Inc.
 - Re: Performance of Hydro-Electric Turbines
 - For: P. J. Dick Contracting Company

19. New York Public Service Commission Case No. 92-E-0814 et al
 - Re: Need to Curtail Qualifying Facilities
 - For: Independent Power Producers of New York

20. New York Public Service Commission Case No. 92-T-0114
 - Re: Avoided Production Costs
 - For: Sithe Energies, Inc.

21. New York Public Service Commission Cases 93-E-0376 and 93-E-0378.
 - Re: Calculation of Avoided Energy Costs
 - For: Sithe Energies, Inc.

22. New York Public Service Commission Case No. 94-E-0098 et al
 - Re: Setting of Buyback Rate
 - For: Independent Power Producers of New York

23. New York Public Service Commission Case No. 94-E-0334
 - Re: Calculation of Avoided Energy Costs
 - For: Sithe Energies, Inc.

24. Texas Public Utility Commission Docket No. 11735
Re: Revenue Requirement Allocation
For: Association for Equitable Rates

25. Florida Public Service Commission Case No. 930548-EG et al
Re: Integrated Resource Planning
For: Competitive Energy Producers Association

26. Georgia Public Service Commission Docket No. 4900-U
Re: Avoided Costs
For: Mid-Georgia Cogen L.P.

27. Georgia Public Service Commission Docket No. 4822-U
Re: Avoided Costs
For: North Canadian Power Corporation and International Power Systems Incorporated

28. FERC Docket No. EC94-7-000
Re: CSW/El Paso Electric merger related system production savings
For: Southwestern Public Service Company

29. Texas Public Utility Commission Docket No. 12065
Re: Backup power rates
For: Texas - New Mexico Power Company

30. New Mexico Public Service Commission Case No. 2575
Re: CSW/El Paso Electric merger related system production savings
For: Southwestern Public Service Company

31. New York Public Service Commission Cases 93-E-0912 and 93-E-1075
Re: Calculation of Fuel Targets and Avoided Energy Costs
For: Sithe Energies, Inc.

32. New York Public Service Commission Cases 94-E-0614 & 95-E-0172

Re: Backup power rates
For: Independent Power Producers of New York

33. Florida Public Service Commission Docket No. 941101-EQ

Re: Need to Curtail Qualifying Facilities
For: Orlando CoGen Limited, L. P.

34. District Court of Harris County, Texas, 11th. Judicial District, Case No. 94-007946
City of Austin and City of San Antonio v's Houston Lighting & Power Company

Re: Replacement Power Cost Damages
For: The City of Austin

35. South Carolina Public Service Commission Docket No. 95-1192-E

Re: Avoided Costs
For: Consolidated Hydro Southeast, Inc.

36. Circuit Court of the City of Richmond, Virginia Case No. LA 2266-4
Gordonsville Energy, L.P. v's Virginia Electric and Power Company

Re: Virginia Power Damages due to NUG outage.
For: Gordonsville Energy, L.P.

37. United States Bankruptcy Court, District of New Jersey, Case No. 95-28703
Kamine/Besicorp Allegany, L.P. v's Rochester Gas & Electric Corporation

Re: Value of Plant Output
For: Kamine/Besicorp Allegany, L.P.

38. Texas Public Utility Commission Docket No. 15638

Re: Texas Utilities' Transmission and Ancillary Service Rates
For: Texas-New Mexico Power Company

39. Texas Public Utility Commission Docket No. 15639

Re: H L & P's Transmission and Ancillary Service Rates
For: Texas-New Mexico Power Company

40. New York Public Service Commission Case 96-E-0891

Re: Retail Service Competition

For: Independent Power Producers of New York

41. United States District Court, Western District of Pennsylvania,
Civil Action No. 95-0658
Washington Power Company, L.P. v's Allegheny Power System, Inc. et al.
Champion Processing, Inc., et al v's Allegheny Power System, Inc. et al.
Re: Non-performance of contract terms and associated damages
For: Washington Power Company, LP- Champion Processing, Inc., et al

42. American Arbitration Association, Case 79 Y 199 00070 95
Las Vegas Cogeneration L.P. v's Nevada Power Co.
Re: Curtailment of contract deliveries and associated damages
For: Las Vegas Cogeneration L.P.

43. United States Bankruptcy Court, Middle District of Louisiana, Case No. 94-11474
United States District Court, Middle District of Louisiana, Case No. 94-2763
Cajun Electric Power Co-operative, Inc. Debtor
Re: Value of non-nuclear assets of Cajun Electric Power Co-operative
For: Enron Capital & Trade Resources

44. Louisiana Public Service Commission Docket U-21453
Re: Retail Service Competition
For: Alliance for Lower Electric Rates Today

45. Georgia Public Service Commission Docket No. 6739-U
Re: Prudence of investment in Rocky Mountain pumped storage
plant
For: Georgia Power Company

46. Pennsylvania Public Utility Commission Docket No. P-00971265
Re: Market prices for retail generation services
For: Enron Energy Services Power Inc.

47. State Corporation Commission of Virginia Case No. PUE960296
Re: Revenue Requirement Allocation
For: Coalition for Equitable Rates

48. Public Service Commission of Wisconsin Docket 6630-UR-110
Re: Revenue Requirement Allocation

For: Coalition for Equitable Rates

49. District Court of Lancaster County, Nebraska, Docket 528, Page 69
City of Lincoln d/b/a Lincoln Electric System v's Nebraska Public Power District
Re: Replacement Power Cost Damages
For: Lincoln Electric System
50. District Court of Lake County, Florida, (1999)
NCP Lake Power/Lake Cogen, Ltd. v's Florida Power Corporation
Re: Breach of Contract and associated damages
For: NCP Lake Power/Lake Cogen, Ltd.
51. Fourth Judicial Circuit Court, in and for Duval County, Florida, Case 97-07037-CA
Cedar Bay Generating Company, L.P. v's Florida Power & Light Company
Re: Breach of Contract and associated damages
For: Cedar Bay Generating Company, L.P.
52. Arbitration
Massachusetts Municipal Wholesale Electric Company, et al
v's The Connecticut Light and Power Company
and Western Massachusetts Electric Company
New England Power Company v's The Connecticut Light and Power Company
and Western Massachusetts Electric Company
Re: Replacement power costs for the outage of Millstone 3 nuclear unit
For: The Non-operating Co-owners of Millstone 3
53. Florida Public Service Commission Docket No. 981890-EU
Re: Peninsula Florida Generation Reserve Margins
For: Duke Energy
54. United States District Court For The District Of Nebraska, Case 9:98CV345
Entergy Services, Inc. and Entergy Arkansas, Inc.
vs Union Pacific Railroad Company
Re: Replacement Power Costs
For: Union Pacific Railroad
55. Florida Public Service Commission Docket No. 001748-EC

Re: Petition for Determination of Need for the Osprey Energy Center
For: Calpine Construction Finance Company, L.P.

56. New Orleans City Council No. UD99-2

Re: Customer Complaints of Overcharging by Entergy New Orleans
For: Reverend C. S. Gordon, Jr. et al

57. United States District Court for the Northern District of California, San Jose Division
Case Number C 99-21242 SW PVT ENE

ABB Power T&D Company v. Alstom Esca Corporation

Re: Intellectual Property Dispute
For: Alstom Esca Corp.

58. United States District Court For The District Of Kansas, Civil Action 00-2043CM
Western Resources, Inc. v. Union Pacific Railroad Company and The Burlington
Northern And Santa FE Railway Company

Re: Replacement Power Costs and other damages
For: Union Pacific Railroad

59. United States District Court For The Southern District of New York, Case No 01
Civ. 1893 (JGK) (HP)

Consolidated Edison, Inc. v. Northeast Utilities

Re: Failed Merger
For: Northeast Utilities.

60. New York Public Service Commission Case 01-E-1847

Re: NMPC Standby Service Rates
For: Independent Power Producers of New York

61. Wisconsin Public Service Commission Docket Nos. 05-AE-109, 05-CE-117,
05-CE-130, 6650-CG-211, 137-CE-104

Re: CPCN for Port Washington CC's
For: PGE National Energy Group

62. Florida Public Service Commission Docket Nos. 020262-EI and 020262-EI

Re: Petitions to determine the need for additional power plant by
Florida Power & Light Company
For: Florida Partnership for Affordable Competitive Energy

63. North Carolina Utilities Commission Docket No. E-100, SUB 96

Re: Biennial Determination of Avoided Cost Rates for QFs.
For: Cogentrix Energy, Inc.

64. Arbitration

Morgan Stanley Capital Group v's Cobb Electric Membership Corporation, and
Snapping Shoals Electric Membership Corporation

Re: Disputed electricity trades.
For: Cobb & Snapping Shoals EMCs.

65. FERC Docket No. EL01-88-000

Re: Entergy System Agreement
For: Arkansas Electric Energy Consumers, Inc.

66. FERC Docket No. ER03-713-000

Re: Southern Power Company affiliate PPAs
For: Calpine Corporation

67. Circuit Court of Jackson County, Missouri, Case No. 01CV207987

KCPL v's Bibb & Associates, Inc. et al.
Re: Damages resulting from explosion
For: Defendants

68. Commercial Arbitration No. 71 198 00323 01-The American Arbitration Association
Brazos Electric Power Cooperative, Inc. v's Tenaska IV Texas Partners, Ltd.

Re: Disputes arising out of a Power Purchase Agreement
For: Tenaska IV Texas Partners, Ltd.

69. United States Bankruptcy Court for the Northern District of Texas, Fort Worth
Division

- Chapter 11 Case. Case No. 03-46590 (DML) 11 Jointly Administered
Re: Mirant Corporation, et al, Debtors
For: Official Committee of Equity Holders
70. Oklahoma Corporation Commission Docket No. PUD 200200038
Re: Purchase Power Rates for a Cogeneration Facility
For: Lawton Cogeneration LLC
71. FERC Docket No. ER03-180-000 et al
Re: Market Based Rate Authority
For: Enron Power Marketing et al
72. United States District Court for the Southern District of OHIO
Civil Action 2 :04-cv-905
Re: Emission Impacts resulting from Boiler Component Replacements
For: Dayton Power & Light Co. et al
73. AAA Arbitration No. 13-198-02918-08
Re: Impacts of Unreliability
For: Project Orange Associates
74. District Court of Chambers County, Texas. Cause No. 20666
Re: Customer Complaints of Overcharging by Entergy Gulf States and
Entergy Texas
For: Reverend C. S. Gordon, Jr. et al

PLANNED SUMMER RESERVE MARGINS

Year	2005 TYSP		2006 TYSP		2007 TYSP		2008 TYSP		2009 TYSP		2010 TYSP		Year
	Forecast Peak Load	Installed Reserves	Forecast Peak Load	Installed Reserves	Forecast Peak Load	Installed Reserves	Forecast Peak Load	Installed Reserves	Forecast Peak Load	Installed Reserves	Forecast Peak Load	Installed Reserves	
	MW	% of Peak	MW	% of Peak	MW	% of Peak	MW	% of Peak	MW	% of Peak	MW	% of Peak	
2005	3797	20.1											2005
2006	3922	20.1	3905	20.3									2006
2007	4040	20.0	4029	23.3	4057	21.7							2007
2008	4161	19.9	4159	19.7	4176	21.7	4149	19.9					2008
2009	4295	19.9	4277	24.6	4299	20.9	4245	23.2	4095	25.6			2009
2010	4432	22.9	4400	24.6	4421	19.9	4356	23.6	4149	24.9	3925	31.3	2010
2011	4508	20.8	4453	21.3	4472	22.1	4396	22.4	4136	21.2	3867	29.1	2011
2012	4666	19.8	4583	21.4	4599	19.8	4519	21.4	4194	19.3	3890	23.8	2012
2013	4790	21.9	4693	23.8	4720	20.5	4628	23.0	4240	20.1	3912	20.0	2013
2014	4908	22.2	4805	20.9	4841	21.2	4747	19.9	4292	20.0	3932	20.8	2014
2015			4943	19.9	4991	20.5	4880	20.1	4360	20.7	3960	20.0	2015
2016					5114	20.5	5018	19.8	4431	20.7	3994	19.8	2016
2017							5162	21.3	4428	20.8	3954	21.0	2017
2018									4504	31.1	3996	19.7	2018
2019											4038	24.5	2019

Source: 2005-2010 TECO Ten Year Site Plans

PLANNED WINTER RESERVE MARGINS

Year	2005 TYSP		2006 TYSP		2007 TYSP		2008 TYSP		2009 TYSP		2010 TYSP		Year
	Installed % of Peak	After maint % of Peak	Installed % of Peak	After maint % of Peak	Installed % of Peak	After maint % of Peak	Installed % of Peak	After maint % of Peak	Installed % of Peak	After maint % of Peak	Installed % of Peak	After maint % of Peak	
2004-05	23.8	23.8											2004-05
2005-06	19.8	19.8	21.4	21.4									2005-06
2006-07	24.5	24.5	21.4	21.4	22.3	22.3							2006-07
2007-08	30.0	20.1	30.1	20.1	29.8	19.9	28.7	19.5					2007-08
2008-09	30.1	20.8	29.8	21.1	29.0	20.3	28.7	19.7	31.7	22.5			2008-09
2009-10	29.8	20.7	30.4	21.4	28.7	19.8	29.4	20.6	35.0	19.7	41.9	32.0	2009-10
2010-11	20.7	20.7	26.3	26.3	21.2	21.2	25.6	25.6	32.6	32.6	42.1	42.1	2010-11
2011-12	21.8	21.8	22.7	22.7	23.0	23.0	24.0	24.0	28.5	28.5	39.2	39.2	2011-12
2012-13	19.7	19.7	27.5	27.5	23.8	23.8	28.5	28.5	21.5	21.5	23.7	23.7	2012-13
2013-14	20.4	20.4	24.6	24.6	20.8	20.8	25.4	25.4	28.3	28.3	29.1	29.1	2013-14
2014-15			19.6	19.6	20.1	20.1	21.9	21.9	27.7	27.7	29.6	29.6	2014-15
2015-16					19.7	19.7	21.8	21.8	27.8	27.8	28.1	28.1	2015-16
2016-17							27.6	27.6	28.4	28.4	28.5	28.5	2016-17
2017-18									28.3	28.3	29.6	29.6	2017-18
2018-19											25.3	25.3	2018-19

Source: 2005-2010 TECO Ten Year Site Plans

090368-EI

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing Testimony of Kenneth Slater has been furnished U.S. Mail to the following parties on this 21st day of June, 2010.

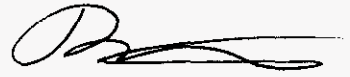
Keino Young
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Paula K. Brown
TECO
P.O. Box 111
Tampa, FL 33601-0111

James Beasley
Jeffrey Wahlen
Ausley Law Firm
P.O. Box 391
Tallahassee, FL 32302

John W. McWhirter, Jr.
c/o McWhirter Law Firm
P.O. Box 3350
Tampa, Florida 33601

Vicki Gordon Kaufman
Jon C. Moyle, Jr.
118 North Gadsden Street
Tallahassee, FL 32301



Patricia A. Christensen
Associate Public Counsel