

ORIGINAL



TAMPA ELECTRIC

TAMPA ELECTRIC COMPANY

BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 992014-EI

TESTIMONY
AND EXHIBIT OF

HOWARD T. BRYANT

DOCUMENT NUMBER-DATE

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EPSC-RECORDS/REPORTING

1 BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

2 PREPARED DIRECT TESTIMONY

3 OF

4 HOWARD T. BRYANT

5
6
7 Q. Please state your name, address, occupation and employer.

8
9 A. My name is Howard T. Bryant. My business address is 702
10 North Franklin Street, Tampa, Florida 33602. I am the
11 Manager of Energy Management and Forecasting for Tampa
12 Electric Company ("Tampa Electric" or "company").

13
14 Q. Please provide a brief outline of your educational
15 background and business experience.

16
17 A. I graduated from the University of Florida in June 1973
18 with a Bachelor of Science degree in Business
19 Administration. I have been employed at Tampa Electric
20 since August 1981. My work has included various
21 positions in Customer Relations, Energy Conservation
22 Services, Demand Side Management ("DSM") Planning and
23 Energy Management and Forecasting.

24 In my current position, I am responsible for the
25 company's conservation, load management and load

1 forecasting activities. This responsibility includes
2 ongoing management of Energy Conservation Cost Recovery
3 ("ECCR") expenditures and cost recovery, goals setting,
4 program design initiatives and program monitoring and
5 evaluation.

6
7 Q. Mr. Bryant, have you previously testified before the
8 Florida Public Service Commission ("Commission")?
9

10 A. Yes. I have testified before this Commission on
11 conservation and load management activities, DSM goals
12 setting and DSM plan approval dockets and ECCR dockets
13 since 1993.
14

15 Q. What is the purpose of your testimony in this proceeding?
16

17 A. The purpose of my testimony is to demonstrate that Tampa
18 Electric has evaluated and taken all reasonably available
19 cost-effective conservation measures for the 2000 through
20 2009 period. I will identify the origin of those
21 measures evaluated and present the Commission's ruling as
22 to the measures' appropriateness.
23

24 Q. Have you prepared an exhibit in support of your
25 testimony?

1 A. Yes, under my direction and supervision I have prepared
2 an exhibit entitled, "Exhibit of Howard T. Bryant." It
3 consists of one document and has been identified as
4 Exhibit No. _____ (HTB-1).
5

6 Q. Has Tampa Electric taken all reasonably available cost-
7 effective conservation measures to mitigate a portion of
8 the need for some of the proposed activities for the
9 period 2000 through 2009?
10

11 A. Yes.
12

13 Q. Mr. Bryant, for the period 2000 through 2009, how did
14 Tampa Electric determine the measures to be evaluated for
15 cost-effectiveness?
16

17 A. In Docket No. 971007-EG, Adoption of Numeric Conservation
18 Goals by Tampa Electric Company, Tampa Electric chose a
19 multi-faceted approach toward measure identification for
20 purposes of calculating cost-effectiveness and ultimately
21 setting numeric conservation goals. The identification
22 approach consisted of: 1) approximately 265 measures from
23 the previous goals docket (Docket No. 930551-EG) that
24 were brought into the process by the Commission Staff at
25 the January 7, 1998 workshop; 2) all measures currently

1 offered in existing DSM programs offered by Tampa
2 Electric; 3) measures identified in the last goals docket
3 as having potential inclusion in the State building code
4 but, to-date, yet to be codified; and 4) measures
5 suggested by interested parties for which Florida-
6 specific data was available. The ultimate list of
7 measures evaluated by Tampa Electric is found in Document
8 No. 1 of my Exhibit.

9
10 Q. How were the measures determined to be cost-effective?

11
12 A. Rule 25-17.008, F.A.C., is the Commission's prescribed
13 cost-effectiveness methodology that describes three
14 separate tests for determining cost-effectiveness,
15 specifically, the Rate Impact Measure ("RIM") Test, the
16 Total Resource Cost ("TRC") Test and the Participants'
17 Test. By application of this methodology, measures that
18 passed the RIM, TRC and Participants' tests were used in
19 determining Tampa Electric's proposed numeric goals for
20 the 2000 through 2009 period.

21
22 Q. What was the Commission's decision on Tampa Electric's
23 proposed goals?

24
25 A. In Docket No. 971007-EG, Order No. PSC-99-1942-FOF-EG,

1 issued October 1, 1999, the Commission found that Tampa
2 Electric's proposed DSM goals and the method employed by
3 the company to establish those goals to be appropriate.
4 That decision by the Commission solidified the fact that
5 Tampa Electric considered and evaluated all reasonably
6 available cost-effective conservation measures for the
7 2000 through 2009 period.

8
9 Q. How will the cost-effective measures that comprise Tampa
10 Electric's DSM goals be delivered to the marketplace?

11
12 A. Rule 25-17.0021(4), F.A.C., requires a utility to file
13 its DSM plan designed to meet the utility's approved
14 goals within 90 days of a final order establishing goals.
15 Tampa Electric has complied with the rule by filing a
16 specific plan outlining cost-effective programs that
17 contain the measures utilized to establish the DSM goals.
18 This plan was filed in Docket No. 991791-EG on December
19 29, 1999.

20
21 Q. Please characterize how the participation projections of
22 the various programs containing the cost-effective
23 measures to be delivered to the marketplace were
24 determined?

25

1 A. Tampa Electric relied upon several factors to establish
2 appropriate participation rates for the DSM programs
3 contained in our plan. For example, some measures are
4 relatively new to the marketplace and their adoption
5 rates to-date have been moderate. For these types of
6 measures, an aggressive approach has been designed for
7 their programs in order to achieve greater penetrations.
8 However, from the early 1980s, Tampa Electric has
9 aggressively promoted conservation programs to our
10 customers. This is evidenced by the fact that Tampa
11 Electric was the only investor-owned utility to meet its
12 Florida Energy Efficiency and Conservation Act ("FEECA")
13 goals by the end of the decade. The company's early
14 success created a mature market with respect to certain
15 conservation measures and it is becoming increasingly
16 difficult to secure the next incremental participant.
17 For these programs where the company's early success has
18 created a mature market, some potential still exists
19 (i.e., heat pumps and load control measures). To the
20 extent these measures can continue to be delivered to the
21 marketplace cost-effectively, their contributions to goal
22 achievement were identified. Tampa Electric believes the
23 Commission will find the company's overall plan to be
24 comprehensive and capable of delivering the
25 accomplishment of the company's approved goals.

1 Q. Mr. Bryant, how often are DSM goals established for
2 utilities?

3
4 A. Rule 25-17.0021(2), F.A.C., requires the Commission to
5 establish ten-year DSM goals every five years.
6 Essentially, this allows for a midstream "lock" at the
7 appropriateness of previously established ten-year goals
8 and provides an opportunity for modifications to be made
9 where necessary.

10
11 Q. Will Tampa Electric's DSM plan that is designed to meet
12 Commission-approved goals remain static during the five-
13 year period?

14
15 A. No, quite the contrary. On an annual basis, Tampa
16 Electric evaluates the cost-effectiveness and saturation
17 levels of all its DSM programs while maintaining a
18 surveillance for any new measures that have proven to be
19 commercially available in the marketplace. Additionally,
20 the company is engaged in ongoing research and
21 development activities that strive to identify measure
22 applications with Florida-specific climatological and
23 economic data. To the extent that any discoveries may be
24 ready for program inclusion, the company moves forward
25 with program development. Clearly, this dynamic, annual

1 DSM planning process undertaken by Tampa Electric
2 demonstrates a continuing commitment to deliver cost-
3 effective conservation measures to the marketplace.
4

5 Q. How does Tampa Electric's Clean Air Act Compliance Plan
6 ("Compliance Plan") impact the company's conservation
7 activities?
8

9 A. With the Compliance Plan proposed by Tampa Electric, the
10 company expects the next avoided unit to be a combustion
11 turbine ("CT") resource with similar characteristics
12 (cost per kW for construction, unit fuel cost, in-service
13 date, etc.) as to those associated with the current CT
14 resource utilized in the recent DSM goals setting docket
15 (Docket No. 971007-EG) and DSM plan development docket
16 (Docket No. 991791-EG). Therefore, the conservation
17 activities will experience a very minimal impact if any
18 at all.
19

20 Q. Does this conclude your testimony?
21

22 A. Yes, it does.
23
24
25

TAMPA ELECTRIC COMPANY
DOCKET NO. 992014-EI
WITNESS:HOWARD T. BRYANT
EXHIBIT NO. _____ (HTB-1)

TAMPA ELECTRIC COMPANY
EXHIBIT OF HOWARD T. BRYANT

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DSM MEASURE EVALUATION LIST

TAMPA ELECTRIC COMPANY
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EXHIBIT NO. _____ (HTB-1)
DOCUMENT NO. 1

RESIDENTIAL NEW CONSTRUCTION

FROM COMMISSION WORKSHOP - JANUARY 7, 1998

CW-1	HIGH EFFICIENCY CLOTHES WASHER
FR-1	BEST CURRENT FREEZER (FROST-FREE)
FR-2	BEST CURRENT FREEZER (MANUAL)
LT-1	COMPACT FLUORESCENT
LT-2	EFFICIENT INCANDESCENT
LT-3	HIGH PRESSURE SODIUM (OUTDOOR)
PP-3	DLC OF POOL PUMPS
RF-1	BEST CURRENT REFRIGERATOR (FROST-FREE)
RF-2	BEST CURRENT REFRIGERATOR (MANUAL)
RSC-1	HIGH EFFICIENCY AIR SOURCE HEAT PUMP
RSC-2	GROUND SOURCE HEAT PUMP
RSC-3	TWO SPEED HEAT PUMP
RSC-7A	SETBACK/PROGRAMMABLE THERMOSTAT
RSC-7B	SETBACK/PROGRAMMABLE THERMOSTAT
RSC-8A	LOAD CONTROL FOR RESIDENTIAL ELECTRIC HEAT
RSC-8B	LOAD CONTROL FOR RESIDENTIAL ELECTRIC HEAT
RSC-21A	HIGH EFFICIENCY CENTRAL AC
RSC-22A	TWO SPEED CENTRAL AC
RSC-24A	HIGH EFFICIENCY ROOM AC
RSC-26A	DLC OF CENTRAL AC
RSC-26B	DLC OF CENTRAL AC
WH-1	HIGH EFFICIENCY ELECTRIC RESISTANCE WATER HEATER
WH-2	INTEGRAL HEAT PUMP WATER HEATER
WH-3	SOLAR WATER HEATER
WH-4	HEAT RECOVERY WATER HEATER (DESUPERHEATER)
WH-5	ADD-ON HEAT PUMP WATER HEATER
WH-6	DHW HEATER TANK INSULATION
WH-10	DLC OF ELECTRIC WATER HEATER

ADDITIONAL RESIDENTIAL NEW CONSTRUCTION

LT-4	MOTION DETECTORS FOR OUTDOOR LIGHTING
RSC-05A	REDUCED DUCT LEAKAGE
RSC-05B	REDUCED DUCT LEAKAGE
RSC-19A	REFLECTIVE ROOF COATINGS
RSC-19B	REFLECTIVE ROOF COATINGS
RSC-29	RESIDENTIAL HIGH EFFICIENCY HEAT PUMP
WH-8	DHW HEAT TRAP
WH-9	LOW FLOW SHOWERHEAD
TECO	LOAD MANAGEMENT

COMMERCIAL NEW CONSTRUCTION

FROM COMMISSION WORKSHOP - JANUARY 7, 1998

CD-18	CONVECTION OVENS
CD-19	ENERGY EFFICIENT ELECTRIC FRYERS
LD-25	COMPACT FLOURESCENT LAMPS (15/18/27W)
LD-26	TWO LAMP COMPACT FLOURESCENT (18W)
SCD-1	HIGH EFFICIENCY CHILLER
SCD-2	HIGH EFFICIENCY CHILLER W/ASD
SCD-3	HIGH EFFICIENCY DX AC
SCD-4	HIGH EFFICIENCY ROOM AC UNITS

COMMERCIAL NEW CONSTRUCTION

FROM COMMISSION WORKSHOP - JANUARY 7, 1998 (CONT.)

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SCD-5 COOL STORAGE
VD-8 HIGH EFFICIENCY MOTORS-CHILLERS
VD-9 HIGH EFFICIENCY MOTORS-DX AC
WD-11 HEAT PUMP WATER HEATER
WD-12 SOLAR WATER HEATER
WD-13 HEAT RECOVERY WATER HEATER

ADDITIONAL COMMERCIAL NEW CONSTRUCTION

LD-5 8'-60W FLOUR LAMPS/ELECTRONIC BALLASTS (#1)
LD-8 T8 LAMPS/ELECTRONIC BALLASTS (#2)
LD-11 REFL/DELAMP INSTALL 8'-75W FLOUR LAMPS/EE BALLAST
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LD-21 HIGH PRESSURE SODIUM (70/100/150/250W)
LD-22 HIGH PRESSURE SODIUM (70/100/150/250W -W/ES BALLAST)
LD-23 HIGH PRESSURE SODIUM (35W)
LD-27 ENERGY MANAGEMENT SYSTEM FOR LIGHTING
LD-28 OCCUPANCY SENSORS
LD-29 DAYLIGHTING DESIGN
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RD-2 MULTIPLEX AIR-COOLED/AMBIENT SUBCOOLING
RD-3 MULTIPLEX AIR-COOLED/MECHANICAL SUBCOOLING
RD-4 MULTIPLEX AIR-COOLED/AMBIENT & MECHANICAL SUBCOOL
RD-5 MULTIPLEX AIR-COOLED/EXTERNAL LIQUID SUCTION HX
RD-6 OPEN DRIVE REFRIGERATION SYSTEM (ASD)
RD-7 ANTI-CONDENSATE HEATER CONTROLS
RD-8 HIGH R-VALUE GLASS DOORS
RD-9 REFRIGERATION ENERGY MANAGEMENT SYSTEM (EMS)
RD-10 DUAL PATH AIR CONDITIONING
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SCD-12 HVAC AIR DUCT/WATER PIPE INSULATION-CHILLER
SCD-13 HVAC AIR DUCT/WATER PIPE INSULATION-DX AC
SCD-16 TEMPERATURE SETUP/SETBACK-CHILLER
SCD-17 TEMPERATURE SETUP/SETBACK-DX AC
SCD-18 ROOF INSULATION-CHILLER
SCD-19 ROOF INSULATION-DX AC
SCD-26 LIGHT COLORED ROOFS-CHILLER
SCD-27 LIGHT COLORED ROOFS-DX AC
VD-1 LEAK FREE DUCTS DX AC
VD-4 ASD VENTILATION CONTROL W/AV-DX AC
VD-5 ASD VENTILATION CONTROL W/AV-CHILLERS
VD-6 TIME/PROGRAM VENTILATION CONTROL-CHILLERS
VD-7 TIME/PROGRAM VENTILATION CONTROL-DX AC
VD-10 SEPARATE MAKEUP AIR/EXHAUST HOODS-CHILLERS
VD-11 SEPARATE MAKEUP AIR/EXHAUST HOODS-DX AC
WD-14 DHW HEATER INSULATION
TECO COMMERCIAL /INDUSTRIAL LOAD MANAGEMENT
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RESIDENTIAL EXISTING CONSTRUCTION

FROM COMMISSION WORKSHOP - JANUARY 7, 1998

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PP-3	DLC OF POOL PUMPS
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RSC-05A	REDUCED DUCT LEAKAGE
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RSC-07A	SETBACK/PROGRAMMABLE THERMOSTAT
RSC-07B	SETBACK/PROGRAMMABLE THERMOSTAT
RSC-8A	LOAD CONTROL FOR RESIDENTIAL ELECTRIC HEAT
RSC-8B	LOAD CONTROL FOR RESIDENTIAL ELECTRIC HEAT
RSC-10A	CEILING INSULATION (R0-R19)
RSC-10B	CEILING INSULATION (R0-R19)
RSC-11A	CEILING INSULATION (R11-R30)
RSC-11B	CEILING INSULATION (R11-R30)
RSC-12A	CEILING INSULATION (R19-R30)
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RSC-13A	CEILING INSULATION (R30-R38)
RSC-13B	CEILING INSULATION (R30-R38)
RSC-15A	WEATHERSTRIP/CAULK W/BLOWER DOOR
RSC-15B	WEATHERSTRIP/CAULK W/BLOWER DOOR
RSC-16A	WINDOW FILM/REFLECTIVE GLASS
RSC-16B	WINDOW FILM/REFLECTIVE GLASS
RSC-17A	LOW EMISSIVTY GLASS
RSC-17B	LOW EMISSIVTY GLASS
RSC-18A	SHADE SCREENS
RSC-18B	SHADE SCREENS
RSC-21A	HIGH EFFICIENCY CENTRAL AC
RSC-22A	TWO SPEED CENTRAL AC
RSC-24A	HIGH EFFICIENCY ROOM AC
RSC-25A	AIR CONDITIONING/HEAT PUMP MAINTENANCE
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RSC-26A	DLC OF CENTRAL AC
RSC-26B	DLC OF CENTRAL AC
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WH-5	ADD-ON HEAT PUMP WATER HEATER
WH-6	DHW HEATER TANK INSULATION
WH-7	DHW PIPE INSULATION
WH-8	DHW HEAT TRAP
WH-9	LOW FLOW SHOWERHEAD
WH-10	DLC OF ELECTRIC WATER HEATER

ADDITIONAL RESIDENTIAL EXISTING CONSTRUCTION

LT-4 MOTION DETECTORS FOR OUTDOOR LIGHTING
RSC-19A REFLECTIVE ROOF COATINGS
RSC-19B REFLECTIVE ROOF COATINGS
RSC-23A WHOLE HOUSE FANS
RSC-23B WHOLE HOUSE FANS
RSC-29 RESIDENTIAL HIGH EFFICIENCY HEAT PUMP
TECO CEILING INSULATION
TECO DUCT REPAIR
TECO HEATING AND COOLING SEER12
TECO LOAD MANAGEMENT

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COMMERCIAL EXISTING CONSTRUCTION

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LD-4 4'-34W FLOUR LAMPS/ELECTRONIC BALLASTS (#2)
LD-5 8'-60W FLOUR LAMPS/ELECTRONIC BALLASTS (#1)
LD-6 8'-60W FLOUR LAMPS/ELECTRONIC BALLASTS (#2)
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SCD-1 HIGH EFFICIENCY CHILLER
SCD-2 HIGH EFFICIENCY CHILLER W/ASD
SCD-3 HIGH EFFICIENCY DX AC
SCD-4 HIGH EFFICIENCY ROOM AC UNITS
SCD-5 COOL STORAGE

COMMERCIAL EXISTING CONSTRUCTION

FROM COMMISSION WORKSHOP - JANUARY 7, 1998 (CONT.)

TAMPA ELECTRIC COMPANY
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SCD-8 2-SPEED MOTOR FOR COOLING TOWER
SCD-9 SPEED CONTROL FOR COOLING TOWER
SCD-10 A/C MAINTENANCE-CHILLER
SCD-11 A/C MAINTENANCE-DX AC
SCD-12 HVAC AIR DUCT/WATER PIPE INSULATION-CHILLER
SCD-13 HVAC AIR DUCT/WATER PIPE INSULATION-DX AC
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VD-1 LEAK FREE DUCTS DX AC
VD-8 HIGH EFFICIENCY MOTORS-CHILLERS
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VD-10 SEPARATE MAKEUP AIR/EXHAUST HOODS-CHILLERS
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WD-12 SOLAR WATER HEATER
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WD-14 DHW HEATER INSULATION
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WD-16 LOW FLOW VARIABLE FLOW SHOWERHEAD
WD-17 DWH RECIRCULATION PUMPS

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SCD-17 TEMPERATURE SETUP/SETBACK-DX AC
SCD-26 LIGHT COLORED ROOFS-CHILLER
SCD-27 LIGHT COLORED ROOFS-DX AC
VD-3 VAV SYSTEMS W/INLET VANES-DX AC
VD-4 ASD VENTILATION CONTROL W/VAV-DX AC
VD-5 ASD VENTILATION CONTROL W/VAV-CHILLERS
VD-6 TIME/PROGRAM VENTILATION CONTROL-CHILLERS
VD-7 TIME/PROGRAM VENTILATION CONTROL-DX AC
TECO COMMERCIAL /INDUSTRIAL LOAD MANAGEMENT
TECO COMMERCIAL /INDUSTRIAL INDOOR LIGHTING
TECO DX AC REPLACEMENT
TECO STANDBY GENERATOR

CUE MEASURES EVALUATED

TAMPA ELECTRIC COMPANY
DOCKET NO. 992014-EI
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EXHIBIT NO. _____ (HTB-1)
DOCUMENT NO. 1

RESIDENTIAL

PP-1 HIGH EFFICIENCY POOL PUMP
PP-2 DOWN-SIZED POOL PUMPS W/OVERSIZED PLUMBING
RSC-06A REDUCED DUCT HEAT TRANSFER - NEW CONSTRUCTION
RSC-06B REDUCED DUCT HEAT TRANSFER - NEW CONSTRUCTION
RSC-09A CEILING INSULATION - NEW CONSTRUCTION
RSC-09B CEILING INSULATION - NEW CONSTRUCTION
RSC-28A CEILING FANS
RSC-28B CEILING FANS

COMMERCIAL

LD-3 MOTION DETECTORS FOR OUTDOOR LIGHTING
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RD-2 MULTIPLEX AIR-COOLED/AMBIENT SUBCOOLING
RD-3 MULTIPLEX AIR-COOLED/MECHANICAL SUBCOOLING
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SCD-19 ROOF INSULATION-DX AC
SCD-20 WALL INSULATION-CHILLER
SCD-21 WALL INSULATION-DX AC
SCD-22 WINDOW FILM-CHILLER
SCD-23 WINDOW FILM-DX AC
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SCD-25 SPECIALLY SELECTIVE WINDOWS-DX AC
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