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February 24, 2010

-VIA HAND DELIVERY -

Ms. Ann Cole
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

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Re: Docket No. 090505-EI

Dear Ms. Cole:

I am enclosing for filing in the above docket the original and (15) fifteen copies of the prefiled rebuttal testimony of Florida Power & Light Company witnesses W.E. Avera, G. J. Yupp, J. A. Stall and T. J. Keith.

If there are any questions regarding this transmittal, please contact me at 561-304-5639.

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Sincerely,

John T. Butler
for John T. Butler


Enclosures
cc: Counsel for parties of record (w/encl.)

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CERTIFICATE OF SERVICE
Docket No. 090505-EI

I HEREBY CERTIFY that a true and correct copy of the Florida Power & Light Company's Rebuttal Testimony of W. Avera, G. J. Yupp, J.A Stall and T.J. Keith has been furnished by hand delivery (*) or U.S Mail on the 24th day of February, 2010, to the following:

<p>Lisa Bennett, Esq.* Division of Legal Services Florida Public Service Commission 2540 Shumard Oak Blvd Tallahassee, Florida 32399-0850 LBENNETT@PSC.STATE.FL.US</p>	<p>J. R. Kelly, Esq. Charles J. Rehwinkel, Esq Charles Beck, Esq. Office of Public Counsel c/o The Florida Legislature 111 West Madison Street, Room 812 Tallahassee, Florida 32399 Kelly.jr@leg.state.fl.us rehwinkel.charles@leg.state.fl.us beck.charles@leg.state.fl.us</p>
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By: 
John T. Butler
Florida Bar No. 283479

**BEFORE THE FLORIDA
PUBLIC SERVICE COMMISSION**

**DOCKET NO. 090505-EI
FLORIDA POWER & LIGHT COMPANY**

FEBRUARY 24, 2010

**IN RE: REVIEW OF REPLACEMENT FUEL COSTS
ASSOCIATED WITH THE FEBRUARY 26, 2008
OUTAGE ON FLORIDA POWER & LIGHT'S
ELECTRICAL SYSTEM**

REBUTTAL TESTIMONY & EXHIBITS OF:

**J. A. STALL
G. J. YUPP
W. E. AVERA
T. J. KEITH**

SECRET NUMBER-DATE

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**REBUTTAL TESTIMONY OF
J.A. STALL**

DOCUMENT NO. DATE

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1 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

2 **FLORIDA POWER & LIGHT COMPANY**

3 **REBUTTAL TESTIMONY OF J.A. STALL**

4 **DOCKET NO. 090505-EI**

5 **February 24, 2010**

6

7 **Q. Please state your name and address.**

8 A. My name is J.A. (Art) Stall. My business address is 700 Universe Boulevard,
9 Juno Beach, Florida 33408.

10 **Q. Did you previously submit direct testimony in this proceeding?**

11 A. Yes.

12 **Q. What is the purpose of your rebuttal testimony?**

13 A. The purpose of my rebuttal testimony is twofold. First, I address claims made
14 in the direct testimony of Office of Public Counsel witness Dismukes
15 regarding the opportunity for a "moral hazard" if FPL's proposals in this
16 docket are adopted. Specifically, my testimony demonstrates that Dr.
17 Dismukes's assertions regarding a "moral hazard" with respect to the
18 operations of FPL's nuclear power plants are not valid. Second, I address the
19 position implicit in Dr. Dismukes's replacement power cost (RPC) calculation
20 that the full duration of the outages at Turkey Point Units 3 and 4 that were
21 initiated by the Flagami Transmission Event are attributable to that event and
22 thus should be used to measure the RPC that FPL refunds to customers. My
23 testimony demonstrates that a conservative measure of the outage time
24 resulting from the Flagami Transmission Event is 48 hours for each unit, and

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1 that the remaining outage time was the result of unrelated and unavoidable
2 events that do not reflect any inappropriate or imprudent actions on FPL's
3 part.

4 **Q. What is your response to Dr. Dismukes's assertion by adopting FPL's**
5 **proposals in this docket, a "moral hazard" will be created and FPL will**
6 **be incented to perform less efficiently if it can recover its replacement**
7 **power costs for the unplanned outages resulting from the Flagami**
8 **Transmission Event?**

9 A. With respect to FPL's nuclear operations, this assertion is flat wrong.

10
11 In every refueling outage at FPL's nuclear units, our employees are driven to
12 complete outages as safely and as quickly as possible. The planning of
13 schedules and work scope for planned outages are developed beginning at
14 the end of the previous outage. The scope of each outage is carefully
15 defined and refined. Every outage activity is planned down to the minute.
16 Our Nuclear Division has an entire, separate organization that has only one
17 responsibility – the safe and efficient performance of outages. Our
18 employees continuously critique our refueling outage performance, and
19 lessons learned are implemented across our nuclear fleet in future refueling
20 outages to further improve outage performance. FPL uses a series of
21 indicators to measure nuclear plant performance; outage performance is
22 among these key indicators.

23 **Q. Would FPL change its aggressive approach to performing refueling**
24 **outages safely and quickly if this Commission adopts FPL's system-**

1 **average approach to determining replacement power costs for the**
2 **Flagami Transmission Event?**

3 A. No. FPL's approach results from a strong and long-standing culture of
4 striving for excellence in nuclear operations, in order to operate the nuclear
5 units safely and make the benefits of their low fuel costs available to
6 customers as much of the time as possible. The specifics of how the
7 Commission would determine replacement power costs are not a factor in
8 how FPL approaches nuclear operations.

9 **Q. Would the U.S. Nuclear Regulatory Commission (NRC) permit refueling**
10 **outages to be performed in an unsafe manner?**

11 A. No. I have been dealing directly with the NRC for more than 30 years. FPL's
12 nuclear plants are authorized to operate pursuant to licenses granted by the
13 NRC. FPL operates its nuclear plants pursuant to a complex set of
14 requirements set forth in the NRC operating licenses and in applicable NRC
15 rules, regulations, and orders. The NRC has virtually unlimited authority to
16 take actions necessary to ensure protection of the public health and safety.
17 Thus, even if a licensee were inclined to allow its performance to lag in
18 response to a "moral hazard" (which is certainly not the case for FPL), this
19 intrusive regulatory regime would make it impossible for the licensee to do so
20 without a significant regulatory response from the NRC.

21
22 If the NRC were to have concerns regarding the performance of FPL's
23 nuclear power plants, it has a wide range of compliance tools and
24 enforcement mechanisms to compel compliance with NRC regulatory

1 requirements. Moreover, the NRC can exert significant leverage through
2 licensing activities at other plants in FPL's fleet.

3
4 In light of the NRC regulatory regime and the business construct around
5 outage performance at FPL and in the nuclear industry, the suggestion that
6 FPL's approach to planned refueling and maintenance outages and
7 unplanned outages would be changed based on a decision by the
8 Commission in this docket is absurd.

9
10 Dr. Dismukes's assertions regarding a theoretical "moral hazard" fail to
11 recognize these irrefutable facts as applied to nuclear plant operations.

12 **Q. What is the typical time required for restart of a nuclear unit from an**
13 **unplanned shutdown?**

14 A. Typically, a nuclear unit can be restarted from an unplanned shutdown within
15 48 hours.

16 **Q. What is the appropriate measure of the outage time that each Turkey**
17 **Point nuclear unit would have been offline following the Flagami**
18 **Transmission Event, in the absence of any complications or emergent**
19 **work?**

20 A. An appropriate measure of the outage time that each Turkey Point nuclear
21 unit would have been offline following the Flagami Transmission Event is 48
22 hours. Assuming no complications or emergent work, a nuclear unit can
23 typically be restarted 48 hours after an unscheduled plant shutdown.

1 **Q. Was FPL prudent in conducting the outages following the initial 48**
2 **hours after both Turkey Point units were shut down as a result of the**
3 **Flagami Transmission Event?**

4 A. Yes. The Unit 3 outage, including the repair of the Rod Position Indicator
5 (RPI) system, was prudently planned in advance and was well executed. The
6 RPI work was planned and staged, parts were procured, and work packages
7 were created assuming an unscheduled repair opportunity would arise.
8 These prudent planning activities resulted in a well-conducted repair and plant
9 restart. While the restart of Unit 4 was delayed by a manual reactor
10 shutdown, such activities are not unusual. The outage time beyond the 48
11 hour time frame was not the result of inappropriate or imprudent actions on
12 FPL's part.

13 **Q. Does this conclude your rebuttal testimony?**

14 A. Yes.

**REBUTTAL TESTIMONY OF
G.J. YUPP**

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1 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

2 **FLORIDA POWER & LIGHT COMPANY**

3 **REBUTTAL TESTIMONY OF GERARD J. YUPP**

4 **DOCKET NO. 090505-EI**

5 **February 24, 2010**

6
7 **Q. Please state your name and address.**

8 A. My name is Gerard J. Yupp. My business address is 700 Universe Boulevard,
9 Juno Beach, Florida, 33408.

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

11 A. I am employed by Florida Power & Light Company (FPL) as Senior Director of
12 Wholesale Operations in the Energy Marketing and Trading Division.

13 **Q. What is the purpose of your rebuttal testimony?**

14 A. The purpose of my rebuttal testimony is to respond to the assertion in the direct
15 testimony of David E. Dismukes, PH.D., on behalf of the Office of Public
16 Counsel (OPC), that FPL earned an estimated return on its Turkey Point
17 investments of approximately \$4.7 billion over the past 37 years. His testimony
18 fails to give a comparative figure representing the fuel savings that FPL's
19 customers have received from the operation of the Turkey Point nuclear units.
20 My rebuttal testimony shows that since 1990, FPL's customers have received
21 approximately \$7.7 billion in fuel savings (i.e., \$3 billion more than the estimated
22 return asserted by witness Dismukes over just half the time period).
23 Additionally, the Replacement Power Costs (RPC) calculation that witness
24 Dismukes provides in his testimony includes additional outage hours that were
25 not a result of the Flagami Transmission Event. My rebuttal testimony includes

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1 RPC calculations based on an outage time of 48 hours for Turkey Point Units 3
2 and 4.

3 **Q. Have you prepared or caused to be prepared under your supervision,
4 direction and control an exhibit in this proceeding?**

5 A. Yes, I am sponsoring the following exhibits:

- 6 • GJY-10: Turkey Point Fuel Savings (1990-2009)
- 7 • GJY-11: 48 Hour RPC Calculation vs. System Average Cost
- 8 • GJY-12: 48 Hour RPC Calculation vs. Nuclear Fuel Cost

9 **Q. Please describe how you calculated the Turkey Point nuclear fuel savings
10 shown on Exhibit GJY-10.**

11 A. The fuel savings provided by the Turkey Point nuclear units were calculated
12 using a four-step process. First, the annual combined net MWh of Turkey Point
13 Units 3 and 4 were multiplied by the actual annual percentage of natural gas
14 and heavy oil that FPL's system consumed during each year. The resulting
15 equivalent MWh for both natural gas and heavy oil were converted to MMBtu by
16 multiplying each by the actual heat rates for that fuel type as reported on FPL's
17 December Schedule A3 for each year. The equivalent MMBtu for both natural
18 gas and heavy oil were then multiplied by the actual fuel price for the respective
19 fuel type as reported on FPL's December Schedule A3 for each year, yielding
20 the respective equivalent annual costs for both natural gas and heavy oil. The
21 sum of the two components of the previous calculation represents the annual
22 natural gas and heavy oil fuel costs that FPL would have incurred to produce
23 the same net MWh produced by Turkey Point Units 3 and 4. Lastly, the
24 actual fuel costs for Turkey Point Units 3 and 4 were subtracted from the
25 equivalent natural gas and heavy oil fuel costs to yield net fuel savings on an

1 annual basis. Exhibit GJY-10 is comprised of three components: Turkey
2 Point Units 3 and 4 actual fuel costs (by year), equivalent natural gas/heavy
3 oil fuel costs (by year) and cumulative net fuel savings due to Turkey Point
4 Units 3 and 4 generation over the period January 1990 through December
5 2009.

6 **Q. What does Exhibit GJY-10 show?**

7 A. Exhibit GJY-10 shows that, since 1990, FPL's customers have saved
8 approximately \$7.7 billion in fuel costs as a result of the operation of Turkey
9 Point Units 3 and 4. This is approximately \$3 billion more than the return that
10 OPC witness Dismukes asserts FPL earned over the 37-year period that the
11 Turkey Point units have been in operation. While I have not calculated savings
12 for the period before 1990, customers clearly saved additional billions of dollars
13 over that period as well.

14 **Q. In Exhibits DED-7 and DED-8, witness Dismukes calculates the RPC for**
15 **the Flagami Transmission Event using the full duration of the outages at**
16 **Turkey Point Units 3 and 4. However, FPL witness Stall's rebuttal**
17 **testimony states that 48 hours is a conservative estimate of the time that**
18 **each unit would have been offline following the Flagami Transmission**
19 **Event in the absence of any complications or emergent work. What would**
20 **be the RPC under both FPL's system average approach and witness**
21 **Dismukes' approach of looking specifically to the avoided cost of nuclear**
22 **units, for an outage duration of 48 hours at Turkey Point Units 3 and 4?**

23 A. FPL's system average approach results in an RPC value of \$3,507,899.
24 Witness Dismukes' approach results in an RPC value of \$6,491,507. These
25 calculations are shown in Exhibits GJY-11 and GJY-12 respectively.

1 Q. Does this conclude your testimony?

2 A. Yes.

**REBUTTAL TESTIMONY OF
W.E. AVERA**

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1 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

2 **FLORIDA POWER & LIGHT COMPANY**

3 **REBUTTAL TESTIMONY OF WILLIAM E. AVERA**

4 **DOCKET NO. 090505-EI**

5 **February 24, 2010**

6

7 **Q. Please state your name and address.**

8 A. My name is William E. Avera, 3907 Red River, Austin, Texas, 78751.

9 **Q. Are you the same William E. Avera who previously filed direct testimony in**
10 **this docket?**

11 A. Yes.

12 **Q. What is the purpose of your rebuttal testimony?**

13 A. My testimony responds to the economic and regulatory policy arguments raised
14 in the testimony of David E. Dismukes, Ph.D., filed on behalf of the Office of
15 Public Counsel. I will demonstrate that his arguments regarding the proper
16 regulatory treatment of the Replacement Power Cost ("RPC") credit arising from
17 the February 26, 2008 transmission event at Florida Power & Light Company's
18 ("FPL" or "the Company") Flagami substation (the "Flagami Transmission Event")
19 are flawed in large part because they consistently ignore the fact that it was a
20 transmission-created outage, not a nuclear-created outage.

21 **Q. Please summarize the conclusions of your rebuttal testimony.**

22 A. Dr. Dismukes concludes his testimony with the statement, "the Company's
23 proposal does not reflect the actual replacement cost of energy associated with
24 the *transmission-created outage* of February 2008, and simply represents a

1 transfer of wealth from ratepayers to the Company and its shareholders.”
2 (Dismukes Direct, page 39, lines 15-18; emphasis supplied). Despite his
3 recognition that the Flagami Transmission Event had nothing to do with FPL’s
4 nuclear operations, his recommended calculation of RPC treats the outage as if
5 it were nuclear-created. Dr. Dismukes makes no claim that FPL was imprudent
6 in taking the Turkey Point units offline in response to the Flagami Transmission
7 Event or in restoring the units to service thereafter. Indeed, the testimony of FPL
8 witness J. A. (Art) Stall confirms that the shutdown of the Turkey Point nuclear
9 units in response to the Flagami Transmission Event was mandated by the
10 Nuclear Regulatory Commission (“NRC”) operating licenses for those units, and
11 that FPL brought the units back on line as safely and quickly as possible.

12

13 In contrast to Dr. Dismukes’ proposed calculation, FPL’s RPC calculation
14 identifies the cost attributable only to the transmission-created outage by using
15 system average fuel cost and standard generation recovery times. Separating
16 the low fuel cost and extended recovery times unique to nuclear units from the
17 RPC calculation is the fairest way to recognize FPL’s responsibility for the
18 transmission-created outage without penalizing FPL for the fact that the outage
19 happened to affect prudently operated nuclear units. Specifically linking the
20 RPC to the transmission-related outage and separating the nuclear-related costs
21 is sound economics and regulatory policy.

22

23 The arguments raised by Dr. Dismukes are largely based on his
24 misunderstanding of the logic of FPL’s RPC calculation. There is no “transfer of
25 wealth from ratepayers to the Company,” as claimed by Dr. Dismukes; rather,

1 FPL proposes that customers be fully relieved from paying costs that are
2 associated with the transmission-created outage for which FPL has agreed to
3 take responsibility. My rebuttal testimony explains the specific fallacies in Dr.
4 Dismukes' arguments:

- 5 ● Dr. Dismukes is wrong in his claim that FPL is asking customers to
6 subsidize its replacement costs to encourage new investment in nuclear,
7 solar, wind, and energy efficiency resources. FPL is not asking for any
8 subsidy whatsoever. FPL is instead arguing that tying transmission-
9 created outage costs to specific affected generation would undermine
10 existing incentives for low energy cost alternatives by exposing utilities to
11 disallowances even when they operate low-cost units prudently.
- 12 ● The RPC calculation proposed by Dr. Dismukes is identical to that which
13 would be made if the nuclear units had been taken off-line, and remained
14 offline for their full unplanned outage duration, solely due to imprudent
15 operation of the plants. He makes no attempt to recognize that Turkey
16 Point Units 3 and 4 were operated prudently and thus substantially
17 overstates the appropriate amount of RPC attributable to the Flagami
18 Transmission Event.
- 19 ● Dr. Dismukes incorrectly asserts that the Company's proposal is not
20 consistent with sound economic principles and regulatory policy. In fact,
21 separation of costs based on causation is sound economics and good
22 regulatory policy. Failing to distinguish between transmission-related
23 costs and generation-related costs would not be sound economics
24 because it undermines existing incentives in Florida to encourage energy
25 efficiency.

- 1 • Dr. Dismukes incorrectly claims that FPL's RPC proposal is "entirely
2 inconsistent with the efficiency principles of general equilibrium theory" by
3 not providing marginal cost-based price signals to customers as they
4 make electric-consumption decisions. (Dismukes Direct page 21, lines
5 13-14). He glosses over the fact that Florida's fuel adjustment
6 mechanism is deliberately structured to provide customers with a
7 levelized annual fuel price that is fundamentally (and appropriately)
8 different than a real-time price signal. In any event, FPL's RPC
9 calculation is most consistent with efficiency principles because it
10 provides for customers to pay the energy costs associated with the
11 electricity they use, reduced by the transmission-related costs for which
12 FPL has accepted responsibility.
- 13 • FPL's approach to RPC does not raise the issue of moral hazard
14 because the Company has accepted responsibility for the transmission-
15 created outage and will pay an economic penalty equal to the resulting
16 cost. This sends the appropriate price signal for management to take
17 prudent and cost-effective measures to maintain transmission system
18 reliability for the benefit of customers. In contrast, Dr. Dismukes'
19 proposal is opportunistic regulation that would penalize FPL
20 disproportionately because a prudently operated low fuel cost unit
21 happened to be impacted by a transmission-created outage.

1 **Dr. Dismukes' Calculation of RPC Wrongly Includes Generation-Related Outage**

2 **Costs**

3 **Q. How does Dr. Dismukes propose to calculate RPC from the Flagami**
4 **Transmission event?**

5 A. Dr. Dismukes proposes that the RPC be based on the fuel costs associated with
6 the nuclear units and time they were out of production. As shown in his example
7 (Dismukes Direct page 8 line 12 through page 9, line 4, and Exhibit DED-4), the
8 replacement power calculation focuses only on the lost production from the
9 nuclear plant. This is exactly the same as the calculation that would be done if
10 the nuclear plant had been removed from service due to imprudent plant
11 operations. Dr. Dismukes' failure to recognize this distinction opens the door to
12 opportunistic regulation, where the penalty would be unrepresentatively large
13 when low fuel cost generation happens to be impacted by the transmission-
14 created outage but unrepresentatively small if only high fuel cost generation
15 were affected. As will be discussed later in my rebuttal, Dr. Dismukes' approach
16 undermines the Florida policy to encourage generation alternatives that have low
17 fuel cost and environmental benefits.

18

19 **FPL's Calculation of the RPC Credit is More Consistent with Sound Economic**

20 **Principles and Regulatory Practices than Dr. Dismukes' Recommendation**

21 **Q. Is there any basis for Dr. Dismukes' claim that FPL is proposing "to**
22 **transfer close to \$14 million in consumer wealth to itself and its**
23 **shareholders" (Dismukes Direct, page 21, lines 5-7)?**

24 A. No. FPL's proposed RPC does not result in a transfer of wealth from customers
25 to shareholders. On the contrary, the Company has agreed to reimburse

1 customers for the transmission-related costs that resulted from what Dr.
2 Dismukes agreed was a transmission-created outage. The relevant regulatory
3 policy was cited in my direct testimony, "Under regulatory policy in Florida (as in
4 most states and federal jurisdictions), a utility is allowed to recover prudently
5 incurred fuel and purchased power costs without profit or loss." (Avera Direct,
6 page 6, lines 22-23 continuing to page 7, lines 1-2). The Company did not profit
7 from recovery of fuel costs and it should not suffer a loss beyond that necessary
8 to pay for costs associated with the transmission-created outage. FPL has
9 agreed to reimburse customers for costs from the transmission-created outage
10 of February 26, 2008.

11
12 There is no claim that the Company was imprudent in the operation of its
13 nuclear units. On the contrary, FPL witness J. A. Stall has confirmed that the
14 Turkey Point nuclear units were "prudently and properly taken off-line" following
15 the Flagami event. (Stall Direct, page 1, line 23). He further explains that after
16 the outage, "FPL then took prudent and conservative measures to investigate,
17 inspect, and analyze system components prior to safely restarting both units."
18 (Stall Direct, page 8, lines 6-8). Dr. Dismukes takes no exception to Mr. Stall's
19 testimony regarding the prudent operation of the nuclear units during and after
20 the Flagami Transmission Event.

21 **Q. Does Dr. Dismukes' methodology track marginal or opportunity costs**
22 **more closely than FPL's?**

23 **A.** No. Marginal cost is an instantaneous concept in real time. Florida's fuel
24 adjustment mechanism is not structured to send customers real-time price
25 signals of system cost. As FPL witness Terry J. Keith explains in his rebuttal

1 testimony, customers pay bills based on projected, levelized fuel factors that
2 average fuel costs over the course of a calendar year. Moreover, the true-up for
3 differences in actual costs due to an unanticipated event such as the Flagami
4 Transmission Event will be reflected in the levelized fuel factors one or two years
5 after they occur. Thus, regardless of the approach taken to calculating RPC for
6 an outage, the customers would not receive a meaningful price signal from the
7 RPC. I should also point out that Dr. Dismukes uses average nuclear fuel cost
8 just as the Company proposes to use average system fuel cost, so there are no
9 measures of marginal operating costs in either RPC calculation.

10
11 Nor is marginal-cost pricing necessarily the desired end result. It is worth noting
12 that the classic regulatory text cited by Dr. Dismukes (Dismukes Direct, page 24,
13 lines 20-25) begins its discussion of marginal cost pricing with a quotation from
14 William Vickery, the winner of the Nobel Prize in Economic Science, “the
15 principle of marginal cost pricing is not in practice to be followed absolutely and
16 at all events, but is a principle that is to be followed insofar as this is compatible
17 with other desirable objectives.” (James C. Bonbright, Albert L. Danielsen, and
18 David R. Kamerschen, *Principles of Public Utility Rates* (1988), page 410).
19 Here, the Commission has reasonably and appropriately decided that customers
20 benefit from having some predictability in the price that they pay for electricity,
21 even when fuel costs are volatile. That decision underlies the use of levelized
22 annual fuel factors, which allow customers to budget for their annual electric bills
23 in the upcoming year better than any system of real-time, marginal-cost pricing.

24

1 Finally, the separate identification of transmission-related cost apart from the
2 generation-related costs of an outage, as the Company recommends, is more
3 compatible with marginal cost principles than Dr. Dismukes' approach, which
4 lumps together the transmission-created costs with the generation costs that
5 happened to be impacted in a particular outage. Dr. Dismukes' approach is
6 contrary to Professor Vickery's admonition to consider other "desirable
7 objectives," because it would undermine Florida's policy of encouraging energy-
8 efficient generation, as will be demonstrated in the next section of my rebuttal
9 testimony.

10 **Q. Would the Company's approach to the RPC credit create an opportunity**
11 **for moral hazard as claimed by Dr. Dismukes? (Dismukes Direct, page 25,**
12 **lines 15-17).**

13 **A.** Of course not. Moral hazard arises when an economic agent is insulated from
14 the negative consequences of their actions. As defined by the same classic
15 regulatory policy text cited by Dr. Dismukes, "*Moral hazard* is the failure of a
16 person to behave in a fully responsible way *because* there are no penalties for
17 misbehavior." (James C. Bonbright, Albert L. Danielsen, and David R.
18 Kamerschen, *Principles of Public Utility Rates* (1988), page 40, emphasis in the
19 original).

20
21 FPL's pattern of taking responsibility for the impact of its actions on the welfare
22 of its customers stands in stark contrast to the alleged behavior of leading Wall
23 Street firms in the financial melt-down. FPL has agreed to compensate
24 customers for the RPC attributable to the Flagami Transmission Event. As Mr.
25 Stall explains, FPL took all reasonable and prudent actions to safely restore its

1 nuclear generation to service after the transmission-created outage. (Stall
2 Direct, page 8, lines 1-8). The Company's approach properly calculates a
3 penalty based on the costs attributable to the transmission-created outage rather
4 than focusing on the outage of prudently operated nuclear units. This approach
5 avoids the problem of insufficient penalties raised in the quote from Professors
6 Bonbright, Danielson, and Kamerschen cited by Dr. Dismukes. (Dismukes
7 Direct, page 24, lines 20-25).

8
9 **Dr. Dismukes' Calculation of RPC Credit Would Undermine The Policy of**
10 **Encouraging Low Fuel Cost Generation in Florida**

11 **Q. Dr. Dismukes urges the Commission to set the RPC refund at the "true**
12 **value of the February 2008 outages." (Dismukes Direct, page 26, lines 6-**
13 **7). Do you agree?**

14 **A. I completely agree with his statement, but strongly disagree with his application**
15 **of it. In my opinion, the Company's RPC approach properly reflects the "true**
16 **value of the February 2008 outages," because it is more indicative of the**
17 **transmission-related costs. In contrast, Dr. Dismukes' approach conflates the**
18 **transmission-related costs with generation-related costs. Besides departing**
19 **from the "true value" of the transmission-created costs, this approach exposes**
20 **utilities to future disallowances that, to use Dr. Dismukes' words, are "unknown,**
21 **speculative, and yet to be identified." (Dismukes Direct, page 26, lines 4-5,**
22 **emphasis in the original). His approach would expose utilities to open-ended**
23 **disallowances when their prudently operated fuel-efficient generation units are**
24 **impacted by a transmission-created outage. The greater the energy cost**

1 efficiency of a particular unit relative to the system average, the greater the
2 unwarranted disallowance penalty under Dr. Dismukes' approach.

3 **Q. Would Dr. Dismukes' approach be contrary to Florida policy to encourage**
4 **energy efficiency?**

5 A. Yes. Increasing exposure to uncertain and speculative risk of disallowance for
6 prudently operated low fuel cost generating units undermines the energy
7 efficiency policy that Florida leaders have determined is in the interest of
8 customers, the environment, and the economy. In fact, it would work directly
9 against the consistency in incentives that Dr. Dismukes recognizes is so
10 important (Dismukes Direct, page 34, lines 4-20).

11 **Q. Is the Company claiming that it would be unfair to credit customers with**
12 **the "full cost" of the outage since customers have received all of the**
13 **benefits of low nuclear costs, as asserted by Dr. Dismukes? (Dismukes**
14 **Direct, page 26, lines 13-19).**

15 A. No. As I have stated previously, FPL's RPC calculation does reflect the "full
16 cost" of the *transmission-created* outage that is the subject of this docket.

17 **Q. What are reasonable and relevant inferences from the episode of nuclear**
18 **plant disallowances discussed by Dr. Dismukes? (Dismukes Direct, page**
19 **30, lines 1-17, Exhibit DED-11).**

20 A. There are two relevant inferences. First, when there has been imprudence
21 found in the operation and construction of nuclear plants, there can be a specific
22 disallowance. When there is no finding of imprudence, there has been no
23 disallowance, as in the case of FPL's Turkey Point units. Second, Dr. Dismukes'
24 discussion supports my statement that, "FPL's customers have been well-served
25 by FPL's investment in Turkey Point Units 3 and 4." (Avera Direct, page 12,

1 lines 9-18). During the decades of the 1980s and 1990s, I participated in many
2 cases before state and federal regulatory agencies as well as in civil courts
3 involving the construction cost of nuclear plants. In that era, the cost and
4 performance of the FPL nuclear units set a performance standard in cost and
5 schedule of construction. I recall in many meetings of experts conducting
6 statistical studies to explain the construction time and cost of a plant, there was
7 discussion of developing some rationale to eliminate the FPL plants from the
8 benchmark sample because they “blew the curve.” Few, if any, nuclear units
9 completed by other utilities in the decades of the 1980s and 1990s compared
10 favorably in schedule and cost to the FPL units.

11 **Q. What then are the proper inferences to be drawn from the 2005 *Rand***
12 ***Journal of Economics* article cited by Dr. Dismukes? (Dismukes Direct,**
13 **page 31, lines 12- 27; page 32, lines 1-16).**

14 A. I take away the exact opposite conclusion from Dr. Dismukes. In rejecting the
15 hypothesis that disallowances were “opportunistic,” the article found that
16 “regulators appear to have been largely driven by the desire to punish specific
17 poorly managed utilities.” (Thomas P. Lyon and John W. Mayo, “Regulatory
18 opportunism and investment behavior: evidence from the U.S. electric utility
19 industry,” *RAND Journal of Economics* (Autumn 2005), page 628). In other
20 words, nuclear investment was disallowed when regulators found imprudence,
21 not “opportunistically” just to lower customers’ bills. In contrast, Dr. Dismukes is
22 recommending in this docket what amounts to a \$13,050,021 add-on
23 disallowance through the RPC credit, where there has been no claim of bad
24 management or imprudence related to nuclear operations. This would fall

1 squarely within the definition of “opportunistic” regulation of the type that the
2 article felt should be avoided.

3 **Q. Do the “other interesting questions” tested in the article discussed by Dr.**
4 **Dismukes (Dismukes Direct, page 32, lines 4-16) have any other relevance**
5 **for this case?**

6 A. No. The single question discussed by Dr. Dismukes is whether the Duff &
7 Phelps regulatory climate rating impacts capital investment by utilities. The
8 authors stated, “we expect investment to be negatively correlated with Duff &
9 Phelps rating.” (Lyon & Mayo, *id.* page 634). Their finding was a positive
10 correlation that was not statistically significant, so as Dr. Dismukes grants, “it is
11 impossible to discern any relationship between investor ratings of regulatory
12 commissions and the investment practices of their utilities.” (Dismukes Direct,
13 page 32, lines 14-16).

14
15 But Dr. Dismukes’ statement should not be taken to suggest that investor
16 rankings of regulatory commissions are irrelevant. For example, while the article
17 established no relationship between levels of investment and regulatory
18 rankings, it did not demonstrate that the risks associated with utilities operating
19 in jurisdictions with low regulatory ratings are not higher than for more supportive
20 commissions. Since required returns are a function of risk, customers in states
21 with less supportive regulatory policies could be expected to pay a penalty in the
22 form of higher capital costs.

1 Also, the Lyon & Mayo study involved Duff & Phelps rankings that were only
2 published from 1972 to 1991. (Lyon & Mayo, Id., page 633). Because there was
3 no statistical significant relationship in this study relating to plant investment by
4 utilities does not suggest that investors' evaluation of regulatory agencies does
5 not impact the cost and availability of capital, then or now.

6 **Q. Is there any finding in the *RAND Journal of Economics* article that runs
7 counter to Dr. Dismukes' position in this case?**

8 A. Yes. A primary finding of the article, which Dr. Dismukes chose not to discuss,
9 runs contrary to his opinions in this case. Lyons & Mayo found, "our results with
10 controls for nuclear construction consistently indicate that a firm that is
11 disallowed subsequently reduces its investment propensity significantly." (Lyon
12 & Mayo, Id. page 461). This suggests that nuclear disallowances did have the
13 consequence of reducing investment by the utilities that suffered the
14 disallowance. Granted, Florida was not one of the states where a disallowance
15 occurred in this study and the focus was on capital cost disallowances rather
16 than operating costs. But it is entirely rational for utilities to respond to economic
17 risks and penalties if nuclear and other energy-efficient generation sources are
18 operated prudently, but still remain subject to disallowances from an unrelated
19 transmission-created outage.

20 **Q. Is Dr. Dismukes correct to assert that there is "no relationship between the
21 proposed RPC credit in this proceeding and nuclear plant development
22 cost recovery" (Dismukes Direct, page 33, lines 12-24)?**

23 A. No. There are two important links between this case and Florida's nuclear
24 development cost recovery policy. First, that policy confirms the importance to
25 Florida of encouraging the development of nuclear power in the state. As stated

1 by Dr. Dismukes, "The Commission, and the Florida Legislature, have clearly
2 defined a strong and supportive policy for nuclear power plant development."
3 (Dismukes Direct, page 33, lines 19-21). Second, the effectiveness of this policy
4 will be undermined by the potential for opportunistic disallowances due to
5 transmission-created outages of the kind proposed by Dr. Dismukes, when there
6 has been no finding of imprudence in nuclear operations. The *RAND Journal*
7 discussed above confirmed that disallowances can have a chilling effect on
8 future investment in nuclear generation.

9 **Q. Do you agree with Dr. Dismukes that "consistency is more important to
10 nuclear and renewable power cost recovery than setting policy in a one-
11 time opportunistic fashion (Dismukes Direct, page 34, lines 4-7)?**

12 **A.** Completely. A consistent policy is far superior to opportunistic treatment. That
13 is why the Company's RPC approach of isolating transmission-related costs is
14 more effective regulatory policy than Dr. Dismukes' approach, which would
15 penalize a utility opportunistically if transmission events cause a prudently
16 operated nuclear unit to come offline.

17
18 Dr. Dismukes is completely off base in suggesting that the company is
19 requesting "shareholder subsidies." (Dismukes Direct, page 34, line 10). FPL is
20 requesting no subsidy in this case. Rather, it is proposing a method for
21 calculating transmission-related costs for a transmission-created outage that can
22 be applied consistently through time, in a manner that is fair to the Company
23 and its customers and avoids undermining incentives now in place for what Dr.
24 Dismukes recognizes as "the challenge in the development of high capital cost

1 power generation assets such as nuclear, solar, and offshore wind.” (Dismukes
2 Direct, page 34, lines 8-9).

3 **Q. Dr. Dismukes claims that in competitive markets replacement power for**
4 **nuclear plant outages would “typically be borne by the nuclear plant**
5 **operator and its shareholders,” citing the recent charge reported by FPL**
6 **Group for the Seabrook nuclear plant. (Dismukes Direct, page 35, lines 11-**
7 **17). Does this example support his RPC calculation?**

8 A. No. The Seabrook outage was the result of operating problems at the plant and
9 was not a transmission-created outage like the Flagami Transmission Event.
10 (FPL Group *Form 8K, Exhibit 99* (filed with the U.S. Securities and Exchange
11 Commission, December 23, 2009) page 1). Also, a nuclear plant that sells its
12 power into a competitive market does not have its profits limited by regulatory
13 authorities and can benefit handsomely from the spread between its generating
14 costs and market prices for power when the plant is operating. In this way, high
15 profits from when the plant operates can make up for replacement power when
16 the plant fails to operate. In contrast, the Company’s profit on its investment in
17 Turkey Point nuclear units is limited to a fair rate of return and recovered in base
18 rates, while it recovers fuel cost without profit. I would also note that Dr.
19 Dismukes recognizes that the obligation to pay for replacement power is
20 dependent on the contracts and other arrangements underlying power sales
21 agreements. (Dismukes Direct, page 35, footnote 31). In my experience with
22 merchant plant contracts, there are usually specific limitations on the obligations
23 of plant owners and operators to pay replacement power costs, and there is
24 often a test of whether the plant operator could have reasonably prevented the
25 outage, a benchmark not unlike prudence standard for regulated plants.

1 **Q. Dr. Dismukes observes that there are a number of issues that may impede**
2 **the development of renewable resources such as solar and wind energy.**
3 **(Dismukes Direct, page 35, lines 19-21; page 36, lines 1-24; page 37, lines**
4 **1-7). Is this a reasonable justification for his opportunistic calculation of**
5 **RPC?**

6 A. Certainly not. The fact that there are many economic and political challenges
7 facing renewable development in Florida does not justify ignoring the effect that
8 Dr. Dismukes' proposed RPC calculation would have in undermining existing
9 incentives and making new incentives less effective. Dr. Dismukes refers to the
10 relatively small amount at issue in the case compared to the massive investment
11 required for nuclear plants and renewable options. However, there is no dollar
12 limit to disallowances under his RPC approach. This open-ended and uncertain
13 exposure would be a real disincentive to nuclear and renewable generation and
14 would undermine present and future state and federal incentives.

15 **Q. Does adopting the Company's transmission-related cost approach to RPC**
16 **in this case open the door to future claims for renewable energy**
17 **subsidies, as claimed by Dr. Dismukes (Dismukes Direct, page 38, lines 1-**
18 **19)?**

19 A. No. The Company is not proposing that the RPC credit or any other aspect of
20 the fuel adjustment clause be used to subsidize nuclear or renewable energy.
21 Rather, FPL's approach is true to the sound economic principle and accepted
22 regulatory policy underlying cost-based rates.

1 **Q. Does the Company's approach lessen the consequences of supporting**
2 **reliability or undermine distributed energy resources, as claimed by Dr.**
3 **Dismukes (Dismukes Direct, page 38, lines 21-25; page 39, lines 1-9)?**

4 **A. No.** Under the Company's proposal, the price of transmission reliability is set
5 consistent with its cost so that economically rational decisions can be made
6 regarding investments in reliability and distributed energy resources. A stable
7 and consistent price is more conducive to rational economic choices over
8 reliability investments than the opportunistic and fluctuating penalty that would
9 result from Dr. Dismukes' approach.

10 **Q. Does this conclude your rebuttal testimony?**

11 **A. Yes.**

**REBUTTAL TESTIMONY OF
T.J. KEITH**

DOCUMENT NO. DATE

**01260-10 2/24/10
FPSC - COMMISSION CLERK**

1 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

2 **FLORIDA POWER & LIGHT COMPANY**

3 **REBUTTAL TESTIMONY OF TERRY J. KEITH**

4 **DOCKET NO. 090505-EI**

5 **February 24, 2010**

6
7 **Q. Please state your name and address.**

8 A. My name is Terry J. Keith and my business address is 9250 West Flagler Street,
9 Miami, Florida 33174.

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

11 A. I am employed by Florida Power & Light Company ("FPL" or "the Company") as
12 Director, Cost Recovery Clauses in the Regulatory Affairs Department.

13 **Q. Have you previously testified in this docket?**

14 A. Yes, I have.

15 **Q. What is the purpose of your testimony?**

16 A. The purpose of my testimony is to respond to the testimony of David E.
17 Dismukes, who is appearing on behalf of the Office of Public Counsel ("OPC")
18 related to FPL's proposed replacement power cost ("RPC") credit associated with
19 the Flagami Transmission Event on February 26, 2008.

20 **Q. Please summarize your testimony.**

21 A. My rebuttal testimony responds to three points in Dr. Dismukes' testimony.
22 First, he asserts that the RPC for the Flagami Transmission Event should be
23 calculated on the basis of 100% of the time that Turkey Point Units 3 and 4 were
24 offline following that event, without presenting any evidence that FPL was
25 imprudent with respect to the events that extended the outages of those units

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1 beyond the time required for a normal restart following an unplanned shutdown.
2 My testimony shows that the Commission's practice has been to limit
3 disallowances of replacement power costs to the portion of outages that are
4 directly associated with imprudent actions. While FPL does not admit
5 imprudence or any other improper action or failure with respect to the Flagami
6 Transmission Event, FPL has agreed to bear the replacement power cost
7 attributable to that Event. See Proposed Resolution of Issues Dated December
8 4, 2009 and approved by the Commission January 26, 2010.

9
10 Second, Dr. Dismukes asserts that FPL's RPC proposal would interfere with price
11 signals that customers would otherwise receive concerning the cost of the fuel for
12 the electricity that they are consuming. My testimony demonstrates that Florida's
13 Fuel Adjustment Clause (FAC) process does not lend itself to real-time price
14 signals for customers, because the FAC factors paid by customers are leveled
15 over the calendar year and are based on projections and prior period cost
16 adjustments.

17
18 Finally, I explain why Dr. Dismukes' statement that FPL's customers pay a
19 considerable amount for nuclear power plants in base rates is misleading and
20 ignores both the enormous fuel savings that FPL's customers receive from the
21 operation of Turkey Point Units 3 and 4, as well as the fact that FPL's total bill is
22 among the lowest of peer utilities.

23 **Q. Dr. Dismukes recommends that FPL refund \$15,974,055 to customers,**
24 **which reflects the full period of time that Turkey Point Units 3 and 4 were**

1 **offline following the Flagami Transmission Event. Do you believe that his**
2 **recommendation is consistent with Commission practice?**

3 **A.** No. The Commission has limited disallowances of RPC to the portion of outages
4 that are directly associated with imprudent actions. For example, On March 29,
5 1989, FPL agreed with the Nuclear Regulatory Commission ("NRC") to take
6 Turkey Point Unit 3 offline because FPL's nuclear unit operators failed to pass
7 NRC licensing requalification exams. In Order No. 23232, issued on July 20,
8 1990, the Commission required the refund of RPC for Turkey Point Unit 3 during
9 the period March 29 through April 1, 1989, stating that this outage time was the
10 responsibility of FPL's management because operator training is directly a
11 management function. The three days for which FPL was ordered to refund RPC
12 were part of a much longer series of outages extending throughout the Spring of
13 1989, but the Commission only disallowed RPC associated specifically with the
14 requalification exam. Order No. 23232 states:

15 "However, the outage concurred with a previously scheduled outage for
16 equipment safeguards testing that was set to begin on April 1, 1989.
17 During this planned outage, FPL identified and performed essential
18 repairs. Thus, even though management was responsible for the outage,
19 replacement fuel costs were prudently incurred commencing April 1.
20 Therefore, only replacement fuel costs for the period March 29 through
21 April 1, 1989, should be disallowed.

22 Applying that same principle here, FPL would not be responsible to refund RPC
23 for the full period of the Turkey Point Units 3 and 4 outages following the Flagami
24 Transmission Event, even under Dr. Dismukes' theory on how RPC should be
25 calculated. Rather, as explained in the rebuttal testimony of FPL witness Stall,

1 Turkey Point Units 3 and 4 would be able to return to service in 48 hours
2 following an unplanned shutdown, assuming no complications or emergent
3 work. Thus, 48 hours is the appropriate measure of outage time that each
4 Turkey Point nuclear unit would have been offline following the Flagami
5 Transmission Event and under Order No. 23232 that is the maximum
6 duration over which RPC could be calculated.

7 **Q. Dr. Dismukes's testimony on Page 23, Lines 15 – 23, implies that the Fuel**
8 **Adjustment Clause is structured such that customers receive real-time**
9 **price signals that drive their consumption decisions. Do you agree with this**
10 **assertion?**

11 **A.** No. Florida IOUs calculate and set their fuel factors annually, on a levelized
12 basis that does not vary throughout the calendar year. This process provides
13 customers the opportunity to plan with greater certainty their level of expenditures
14 for electricity during a given 12 month period. Fuel factors are calculated based
15 on prior period true-up adjustments, which span portions of two calendar years,
16 and on approximately 18 months of cost projections. These projected costs must
17 be approved by the Commission before cost recovery commences. This process
18 provides customers with more predictable and stable electricity rates throughout
19 the year, but as a result customers are not charged (and hence cannot
20 meaningfully respond to) instantaneous fuel price changes due to the levelization
21 and time lag built into the process. The current FAC process strikes the right
22 balance between customer and shareholder interest without penalizing either.

23 **Q. Is Dr. Dismukes' testimony criticizing the use of adjustment clauses**
24 **(Dismukes testimony p. 28, line 14, through p. 29, line 31) relevant to**
25 **calculation of the RPC credit in this docket?**

1 A. No. This testimony is not relevant to this proceeding and it is incorrect as a matter
2 of policy. As this Commission has recognized on a number of occasions, fuel
3 adjustment clauses (FAC) benefit customers as well as the Company. This is
4 because the FAC enables the Company to recoup increased costs quickly, but it
5 also enables a refund of fuel savings as quickly as possible. Mr. Dismukes'
6 testimony concerning the deficiencies associated with the FAC ignores the
7 benefits of such clauses. Even the National Regulatory Research Institute
8 (NRRI) article quoted by Mr. Dismukes on page 29 of his testimony
9 acknowledges the benefits of clauses in reducing regulatory lag and more
10 promptly reflecting upward or downward adjustments in customer bills for costs
11 that are: "(1) largely outside the control of a utility, (2) unpredictable and volatile,
12 and (3) substantial and recurring." (page 8, "How Should Regulators View Cost
13 Trackers?", Ken Costello, National Regulatory Research Institute).

14
15 Indeed, Mr. Costello's primary concern in the NRRI article cited by Mr. Dismukes
16 is not with fuel cost adjustment mechanisms, but with the use of adjustment
17 mechanisms for costs that are of a smaller magnitude and more predictable
18 nature than fuel costs. Mr. Costello acknowledges the benefits of cost
19 adjustment mechanisms for costs, such as fuel costs, that absent a prompt
20 opportunity for review and recovery outside of a base rate proceeding, would
21 have serious earnings effects on a utility given the magnitude of a cost increase
22 relative to the utility's operating revenues. Considering that the utility's fuel costs
23 for 2009 were more than 6 times FPL's net income for the year, it is obvious that
24 large swings in fuel costs on the scale that we have seen in recent years could
25 significantly affect FPL's earnings absent the opportunity for prompt review and

1 recovery without the time and expense that a base rate proceeding would involve.

2

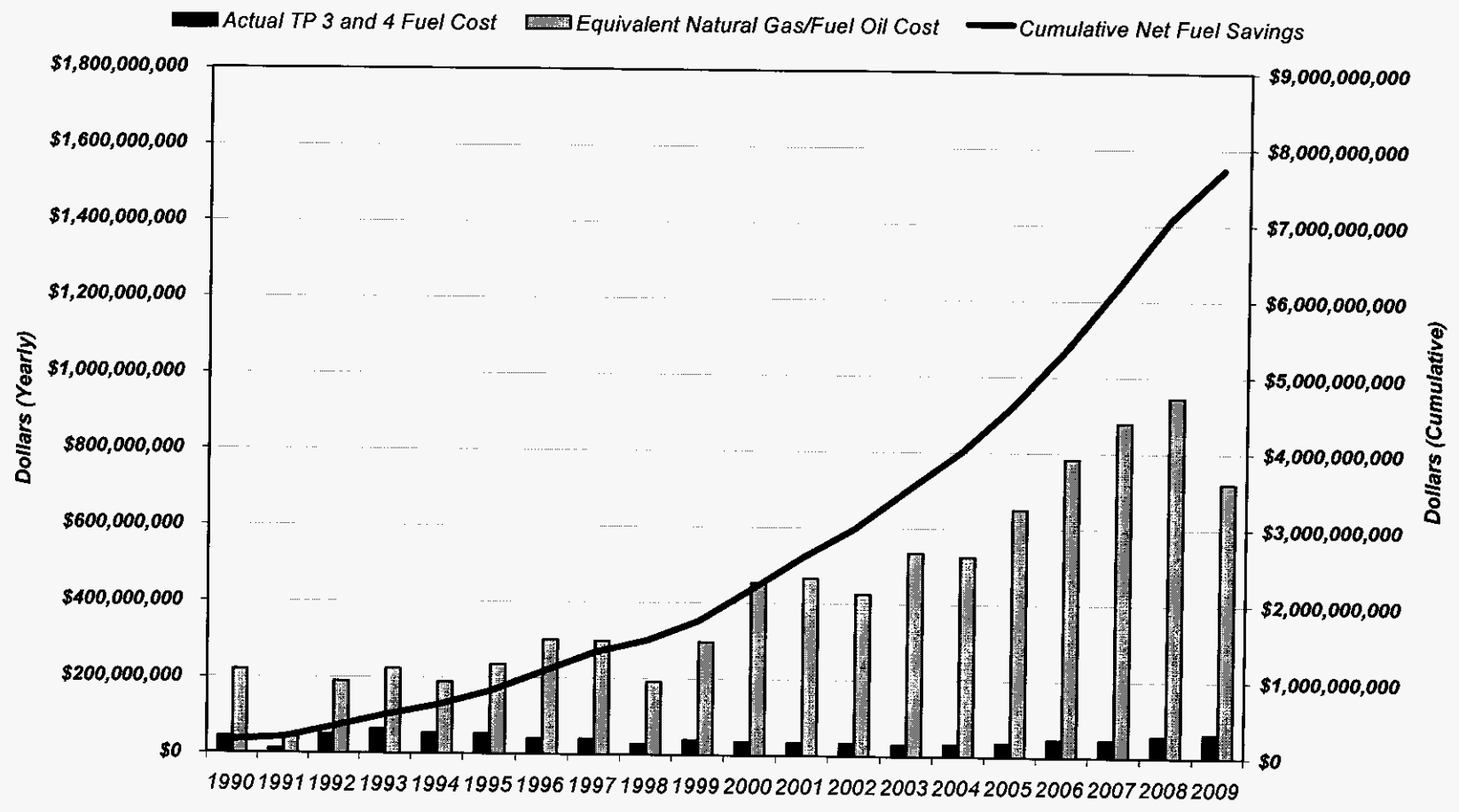
3 **Q. Dr. Dismukes states on page 27, Lines 17 and 18, that “FPL’s customers**
4 **pay (on average, total customers) a considerable amount in base rates**
5 **relative to other peer utilities.” Is this a relevant comparison for evaluating**
6 **the benefits that FPL’s nuclear units provide to customers?**

7 A. No. To start with, it ignores the enormous fuel savings that FPL witness Yupp’s
8 rebuttal testimony demonstrates customers receive from the operation of Turkey
9 Point Units 3 and 4. To get a true measure of what customers pay, one should
10 look at the customers’ total bill. Based on information from the Florida Municipal
11 Electric Association and JEA, FPL’s residential monthly 1,000 kWh bill for
12 January 2010 was the lowest of all the Florida investor-owned utilities (“IOUs”),
13 municipal utilities, and electric cooperatives, and was 28% below the average of
14 Florida utilities. Based on data from the Edison Electric Institute, FPL’s
15 residential monthly 1,000 kWh bill for July 2009 was 10% lower than the IOU
16 national average. FPL’s residential 1,000 kWh bill for February 2010 is again the
17 lowest among the Florida IOUs.

18 **Q. Does this conclude your testimony?**

19 A. Yes, it does.

Turkey Point Units 3 and 4 Fuel Cost vs. Natural Gas/Fuel Oil Cost Equivalent January 1990 through December 2009



Docket No. 090505-EI
 Turkey Point Fuel Savings (1990-2009)
 Exhibit GJY-10, Page 1 of 1

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FPL's peaking units ran for approximately 8 hours and 10 minutes after the Flagami Transmission Event. The \$1,992,270 calculated in Exhibit GJY-6 represents the replacement fuel costs for the first 8 hours and 10 minutes. In order to calculate replacement fuel costs for a total outage duration of 48 hours, replacement fuel costs must be calculated for an additional 39 hours and 50 minutes. FPL's Blended Marginal Cost for February 2008 (shown in Exhibit GJY-7) is multiplied times the equivalent MWh of lost nuclear production for 39 hours and 50 minutes:

Equivalent MWh of Lost Nuclear Production:

$1,434 \text{ MW} * 39 \text{ hours and } 50 \text{ minutes} = 57,121 \text{ MWh}$

Fuel Cost for 39 Hours and 50 Minutes:

$57,121 \text{ MWh} * \$77.55/\text{MWh} = \$4,429,734$

The total fuel cost for the 48-hour period is the sum of the peaking units cost plus the cost of the fuel during the additional 39 hours and 50 minutes.

Total Replacement Fuel Cost:

$\$1,992,270 + \$4,429,734 = \$6,422,004$

Using FPL's system average cost approach, the net replacement costs are as follows:

Total MWh for 48 Hours:

$1,434 \text{ MW} * 48 \text{ Hours (Total Outage Duration)} = 68,832 \text{ MWh}$

Fuel Costs using System Average Approach:

$68,832 \text{ MWh} * \$51.32/\text{MWh (Adjusted System Average Cost, Exhibit GJY-7)} = \$3,532,458$

Net Replacement Power Costs:

$\$6,422,004 - \$3,532,458 = \$2,889,546$

Total RPC:

Net Replacement Power Costs + Net Purchased Power Costs (Exhibit GJY-9)

$\$2,889,546 + 618,353 = \$3,507,899$

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FPL's peaking units ran for approximately 8 hours and 10 minutes after the Flagami Transmission Event. The \$1,992,270 calculated in Exhibit GJY-6 represents the replacement fuel costs for the first 8 hours and 10 minutes. In order to calculate replacement fuel costs for a total outage duration of 48 hours, replacement fuel costs must be calculated for an additional 39 hours and 50 minutes. FPL's Blended Marginal Cost for February 2008 (shown in Exhibit GJY-7) is multiplied times the equivalent MWh of lost nuclear production for 39 hours and 50 minutes:

Equivalent MWh of Lost Nuclear Production:

1,434 MW * 39 hours and 50 minutes = 57,121 MWh

Fuel Cost for 39 Hours and 50 Minutes:

57,121 MWh * \$77.55/MWh = \$4,429,734

The total fuel cost for the 48-hour period is the sum of the peaking units cost plus the cost of the fuel during the additional 39 hours and 50 minutes.

Total Replacement Fuel Cost:

\$1,992,270 + \$4,429,734 = \$6,422,004

Using the avoided cost of nuclear units, the net replacement costs are as follows:

Total MWh for 48 Hours:

Unit 3: 717 MW * 48 Hours = 34,416 MWh

Unit 4: 717 MW * 48 Hours = 34,416 MWh

Nuclear Fuel Costs:

34,416 MWh * \$4.98/MWh (Turkey Point Unit 3 Cost – Schedule A4) = \$171,392

34,416 MWh * \$4.35/MWh (Turkey Point Unit 4 Cost – Schedule A4) = \$149,710

Total Nuclear Fuel Costs = \$171,392 + \$149,710 = \$321,102

Net Replacement Power Costs:

\$6,422,004 - \$321,102 = \$6,100,902

Total RPC:

Net Replacement Power Costs + Net Purchased Power Costs

\$6,100,902 + \$390,605 = \$6,491,507

Note: Under this methodology, net purchased power costs should be calculated versus FPL's marginal units at the time of the event, not versus nuclear fuel costs. At the time of the event, FPL's system marginal cost was approximately \$95/MWh. If Turkey Point Units 3 and 4 remained on-line, FPL's marginal units would have been producing power at approximately \$95/MWh to meet load. Therefore, the net impact of FPL's off-system purchases should be calculated as follows:

Total Purchased Power Costs – (Total MWh Purchased * System Marginal Cost)

\$885,935 – (5,214 MWh * \$95/MWh) = \$390,605

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