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DEAN CANNON
Speaker of the
House of Representatives



July 10, 2012

Ann Cole
Commission Clerk and
Administrative Services
Room 100, Easley Building
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

RECEIVED-FPSC
12 JUL 10 PM 3:44
COMMISSION
CLERK

Re: Docket No. 120009-EI

Dear Ms. Cole:

On June 19, 2012, our office filed, subject to a claim of confidentiality that Florida Power & Light Company (FPL) submitted on the same date, the prefiled testimony and exhibits of OPC witnesses Dr. William Jacobs and Mr. Brian Smith. Because FPL had not screened the prefiled testimony to identify the precise portions to which its claim relates, we did not provide "public" versions of the testimony and exhibits at the time of the initial filing.

On July 6, 2012, FPL filed its "Request for Confidential Classification of Exhibit WRJ(FPL)-3 to the Testimony of William Jacobs (Request)." In its Request, FPL identified specific portions of Exhibit WRJ(FPL)-3 to the testimony of Dr. Jacobs that FPL asserts to be confidential. FPL provided with its Request a redacted version of Dr. Jacobs' Exhibit WJR(FPL)-3. Within its pleading, FPL stated that it does not regard any other portion of the prefiled testimony and exhibits of Dr. Jacobs and Mr. Smith as confidential.

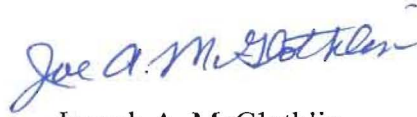
Accordingly, OPC is filing today the public versions of the testimony and exhibits of Dr. Jacobs and Mr. Smith. The testimony and exhibits are being filed pursuant to the memorandum of understanding between OPC and FPSC-CLK dated October 26, 2011. The public version of Dr. Jacobs' Exhibit WRJ(FPL)-3 reflects the same redactions as Exhibit B to FPL's request. As FPL has asserted no other claim of confidentiality relating to Dr. Jacobs' and Mr. Smith's testimony and exhibits, the other pages are not subject to the procedures governing confidentiality and contain no redactions.

AFD-4
IDM-1
ENG-1
ECO-1
COM 5
APA 1
ECR 1
GCL 1
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CLK CtRep-1

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FPSC-COMMISSION CLERK

Please contact me if you have any questions or need additional information. Thank you for your assistance.

Yours truly,

A handwritten signature in blue ink that reads "Joe A. McGlothlin". The signature is written in a cursive style with a horizontal line under the "i" in "McGlothlin".

Joseph A. McGlothlin
Associate Public Counsel

JAM:bsr

cc: Lisa Bennett
Keino Young
Michael Lawson

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In Re: Nuclear Cost Recovery)
Clause.)
_____ /

Docket No. 120009-EI
FILED: June 19, 2012

(PUBLIC VERSION)

DIRECT TESTIMONY

OF

BRIAN D. SMITH

ON BEHALF OF THE CITIZENS OF

THE STATE OF FLORIDA

REVIEW OF FLORIDA POWER AND LIGHT COMPANY'S

NUCLEAR COST RECOVERY RULE FILING

REDACTED

DOCUMENT NO. DATE

04592-12 7/10/12
FPSC - COMMISSION CLERK

1 **DIRECT TESTIMONY**

2 **Of**

3 **BRIAN D. SMITH**

4 On Behalf of the Office of Public Counsel

5 Before the

6 Florida Public Service Commission

7 Docket No. 120009-EI

8 **I. INTRODUCTION**

9 **Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.**

10 A. My name is Brian D. Smith. I am a Senior Project Manager at GDS Associates, Inc. My
11 business address is 1850 Parkway Place, Suite 800, Marietta, Georgia 30067.

12
13 **Q. PLEASE SUMMARIZE YOUR EDUCATION AND EXPERIENCE.**

14 A. I received a Bachelor of Industrial Engineering in 1981 from the Georgia Institute of
15 Technology. I am a registered professional engineer in the state of Florida, and I have
16 thirty years of experience in electric utility planning activities. This includes time spent
17 working for municipal utility planning departments as well as my association with GDS
18 where I have worked as a power supply and utility system simulation consultant. I have
19 been responsible for the development and analysis of integrated resource plans and for
20 computer simulation of utility production operations and financial operations. Particular
21 emphasis has been on economic feasibility studies of alternative power supply resources.
22 My resume is included as Exhibit No. __ (BDS(FPL)-1).

1 **I. SUMMARY OF TESTIMONY**

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

3 A. My testimony collaborates with that of Dr. William Jacobs. In his testimony, Dr. Jacobs
4 points out that the majority of the increase from last year in the cost at completion of its
5 nuclear uprate projects is related to the Turkey Point uprate activities. He also observes
6 that FPL's projected cost, measured in \$/kW, of its Turkey Point uprate project now is
7 considerably higher than FPL's own estimate of the corresponding cost of a new nuclear
8 unit. At Dr. Jacobs' request, and using the composite feasibility analysis of FPL's
9 Extended Power Urate projects that FPL is sponsoring in this docket as a starting point,
10 I have performed an analysis to determine whether each of the Turkey Point and St. Lucie
11 EPU activities shows net benefits to customers when their respective costs and benefits
12 are gauged separately.

13
14 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

15 A. To assess the impact on customers of the soaring Turkey Point uprate costs that Dr.
16 Jacobs describes in his testimony, I analyzed the respective cost-effectiveness of the
17 Turkey Point and St. Lucie uprate projects using FPL's own values for plant-related costs
18 and total (fuel and other) savings. As a simplifying assumption that I believe to be
19 conservative (that is, favorable to FPL's Turkey Point uprate project), I allocated the
20 "savings" component equally between the two plants. I then related the savings for each
21 plant to the estimated "to go" costs for each plant that FPL provided. I calculated the
22 results for each of the seven scenarios of future fuel and environmental compliance costs
23 that FPL examined in its composite exercise. The results of my study are that in six of

1 the seven scenarios, including the medium fuel price scenario that FPL regards as its base
2 case, the Turkey Point uprate shows a substantial net *cost* to customers. In the base case
3 scenario, the costs exceed savings by approximately \$200 million (net present value).
4 The results of my analysis are displayed on Exhibit No. ___BDS(FPL)-2.
5

6 **Q. WHY DO YOU BELIEVE YOUR 50/50 ALLOCATION OF SAVINGS TO THE**
7 **ST. LUCIE AND TURKEY POINT PLANTS IS CONSERVATIVE AND**
8 **FAVORABLE TO THE TURKEY POINT UPRATE ACTIVITY?**

9 A. Both plants generate electricity with nuclear fuel. The incremental EPU capacity at each
10 plant does not vary significantly. A review of excerpts from FPL's publicly available
11 unit and fuel data discloses some slight differences in heat rates and fuel costs; however,
12 those differences are immaterial, and in any event pale in relation to another factor that
13 would tilt the share of savings away from Turkey Point were I to take it into account.
14

15 **Q. WHAT IS THAT FACTOR?**

16 A. The savings that each plant's uprate capacity can produce, which take the form
17 principally of fuel savings, are a function of the quantity of megawatt hours of
18 inexpensive energy it generates over time. Turkey Point is older than St. Lucie. Turkey
19 Point will operate 14 fewer unit years than will St. Lucie, based on the duration of
20 operating licenses. To assume the plants will generate equal savings in light of this
21 important differential is extremely conservative in terms of the quantity of savings that I
22 allocated to Turkey Point.
23

1 **Q. PLEASE DESCRIBE YOUR ANALYSIS MORE FULLY.**

2 A. In the testimony that I filed in Docket No. 110009-EI, I explained that the cumulative
3 present value of revenue requirements (CPVRR) associated with a recent or current
4 expenditure can conservatively be estimated to equal the expenditure itself. Based on
5 that principle, I have produced an analysis which breaks down the total EPU savings that
6 are presented in FPL's Exhibit SRS-8 into savings associated with the separate Turkey
7 Point and St. Lucie components. FPL's analysis, the results of which are summarized on
8 Exhibit SRS-8, estimates the CPVRR of net savings associated with both Turkey Point
9 and St. Lucie over a range of scenarios. Exhibit SRS-8 shows the CPVRR for cases that
10 (1) include the EPU projects, and (2) do not include the EPU project. The differences in
11 CPVRR between the cases are the savings, or costs, associated with each scenario. The
12 savings shown for each scenario can be expressed as the CPVRR of incremental EPU
13 Project costs minus the CPVRR of EPU Project benefits associated with each scenario.
14 In Exhibit SRS-8, a negative value indicates savings, or that the CPVRR for the case with
15 the EPU project is less than the CPVRR for the case without the EPU project. The
16 values shown in Exhibit SRS-8 could be derived using the following equation:

17 (Equation 1) Total CPVRR of EPU Incremental Costs – Total CPVRR of EPU Benefits
18 = Total EPU Project Savings

19
20 **Q. HOW DID YOU USE FPL'S EXHIBIT SRS-8?**

21 A. In order to allocate the Project Savings between Turkey Point and St. Lucie, I developed
22 the following two equations:

1 (Equation 2) Turkey Point CPVRR of EPU Incremental Costs – Turkey Point CPVRR
2 of EPU Benefits = Turkey Point EPU Project Savings

3 (Equation 3) St. Lucie CPVRR of EPU Incremental Costs – St. Lucie CPVRR of EPU
4 Benefits = St. Lucie EPU Project Savings

5
6 **Q. HOW DID YOU TREAT THE SUBJECT OF PAST EXPENDITURES IN YOUR**
7 **ANALYSIS?**

8 A. In its exhibit, FPL excluded past expenditures from the comparison of costs and benefits.
9 I did not modify FPL’s methodology in this regard for purposes of my analysis.

10
11 **Q. PLEASE CONTINUE.**

12 A. For the Medium Fuel/Env II scenario (“base case”), assuming that the CPVRR of EPU
13 Incremental costs can be conservatively represented by the to-go costs, and using the
14 Total Cost Difference values from Exhibit SRS-8 as well as to-go costs for St. Lucie and
15 Turkey Point that were provided in response to Interrogatory No. 19 in OPC’s Fifth Set
16 of Interrogatories, equations (2) and (3) can be represented as shown below:

17 (Equation 4) \$ 1,141.97 Million – Turkey Point CPVRR of EPU Benefits = Turkey
18 Point EPU Project Savings = x

19 (Equation 5) \$446.75 Million – St. Lucie CPVRR of EPU Benefits = St. Lucie EPU
20 Project Savings = y

21

1 From Exhibit SRS-8, we know that FPL has estimated the sum of x and y, for the base
2 case, to equal -\$296 million (representing \$296 million of overall net savings). That
3 relationship can be expressed as equation (6) shown below:

4 (6) $x + y = -\$296 \text{ million}$

5 For my calculations, I have assumed that the Turkey Point CPVRR of EPU Benefits is
6 equal to the St. Lucie CPVRR of EPU Benefits. Under that assumption, and using the
7 relationship shown in equation (6), it is possible to subtract equation (5) from equation
8 (4) and solve for x and y. (I have shown the algebraic solution in my Exhibit No.
9 ___(BDS-3).) Doing so results in an x (Turkey Point) value of \$199.61 million (where a
10 positive value indicates net costs) and a y (St. Lucie) value of -\$495.61 million (where a
11 negative value indicates net savings). Under the assumptions described above, the
12 Turkey Point EPU Project shows a net cost to ratepayers of \$199.61 million, and the St.
13 Lucie EPU Project shows a net benefit of \$495.61 million. On Exhibit No. _ BDS(FPL)-2
14 I have produced net results for each scenario that was shown on Exhibit SRS-8.

15
16 **Q. DOES THAT CONCLUDE YOUR TESTIMONY?**

17 **A. Yes, it does.**

CERTIFICATE OF SERVICE

Docket No. 120009-EI

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by
U. S. Mail to the following parties on this 9th day of July, 2012.

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Joseph A. McGlothlin
Associate Public Counsel

Brian D. Smith
Senior Project Manager

GDS Associates, Inc.
Page 1 of 4

EDUCATION: Bachelor of Industrial Engineering
Georgia Institute of Technology, 1981

PROFESSIONAL REGISTRATION: Registered Professional Engineer - State of Florida

PROFESSIONAL MEMBERSHIP: Institute of Industrial Engineers

EXPERIENCE:

Mr. Smith has thirty years experience in electric utility planning including time spent as a staff member of municipal utility planning departments prior to his association with GDS as a power supply and system simulation consultant. He has been responsible for the development and analysis of integrated resource plans and for computer simulation of utility production operations and financial operations. Particular emphasis has been on economic feasibility studies of alternative power supply resources and projections of wholesale supplier rates based on cost of service as well as market forecasts. Mr. Smith has also been involved in the auditing of incremental energy cost billing calculations for retail customers.

1987 to Present – GDS Associates, Inc.

As Senior Project Manager in GDS' Modeling department, responsibilities include data research, database preparation, and computer simulation of investor-owned and cooperative utility systems using integrated planning software (including resource expansion optimization). He is also responsible for projecting regional market prices that are used for project justification

Mr. Smith has modeled the production systems and construction programs of investor-owned and cooperative utilities using either industry standard planning software or detailed spreadsheet models. Industry standard planning software utilized for project work includes Strategist, PROMOD, and MarketPower.

1985 to 1987 – Municipal Electric Authority of Georgia - Atlanta, Georgia

As Generation Planning Engineer, was responsible for production costing simulation PROMOD, for operations budgeting. Was a member of team responsible for customizing and installing PROSCREEN II (now Strategist) system. Participated in joint planning activities with other regional utilities.

1981 to 1985 – Jacksonville Electric Authority - Jacksonville, Florida

As Generation Planning Engineer, was responsible for production costing simulation, using PROMOD, for budgeting purposes and analysis of alternative power resources. Participated in development of PC based corporate financial model. As Load Research Engineer, was responsible for sample design, coordination of data collection equipment installation and removal, and statistical analysis of electric consumption data. Analysis contributed to cost of service studies and energy management program evaluation.

Specific Project Experience Includes:

Brian D. Smith
Senior Project Manager

GDS Associates, Inc.
Page 2 of 4

East Texas Electric Cooperative, Inc. – Participated in preparation of Request for Proposals for power supply resources. Coordinated communications with potential RFP respondents and conducted evaluation of submitted proposals.

Produced periodic projections of wholesale rates of investor-owned utility power suppliers using Strategist. Conducted economic feasibility analysis of load transfers from one electric reliability council to another. Prepared loan application for construction financing requirements.

Kansas Electric Power Cooperative, Inc. – Modeled production and financial systems to support financial forecast. Assisted in preparation of RFPs for power supply, evaluated responses to RFPs, participated in regulatory review and approval process. Evaluated impacts on members associated with reductions in sales.

North Carolina Electric Membership Corporation - Member of project team assembled to evaluate alternative uses of power resources. Responsibilities included data research, database preparation and computer simulation of investor-owned utilities, as well as cooperative utility system, using a customized PROSCREEN II integrated planning system.

Participated in audit of energy bills from wholesale supplier.

Blue Ridge Power Agency - Projected wholesale rates of investor-owned power supplier.

Georgia Public Service Commission - Assisted in review of Georgia Power Company's Request for Proposal (RFP) procedure, including economic evaluation of resource proposals. Focused on proposal representation and modeling methods.

Member of team responsible for review of Georgia Power Company's 1995, 1997, and 2001 Integrated Resource Plans. Assisted Commission staff with Strategist analyses of company's filed expansion plans.

Seminole Electric Cooperative, Inc. - Participated in review of coop's planning procedures and modeling methods.

Department of Public Utilities, Wallingford, CT - Modeled utility system in order to evaluate power supply alternatives. Analyzed financial impacts of each alternative in order to rank options on basis of economics.

Grand Island, Nebraska Electric Department - Participated in formulation of the city's Integrated Resource Plan. Designed resource screening model and comprehensive model of city's production and financial operations.

4-County Electric Power Association - Evaluated proposals received in response to 4-County Request for Proposals. Analyzed impacts of switching power suppliers on other customers of current supplier.

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Brian D. Smith
Senior Project Manager

GDS Associates, Inc.
Page 3 of 4

Lafayette, Louisiana Utilities System - Modeled the production and financial operations of the utility system. Designed and implemented models to analyze resource options at bus-bar and on an integrated basis. Participated in preparation of Integrated Resource Plan.

South Mississippi Electric Power Association - Developed spreadsheet screening models for analysis of power supply options received in response to Request for Proposals.

Air Liquide America Co. - Modeled generating resources and load requirements of the Electric Reliability Council of Texas. Developed power market clearing prices and dispatch forecast.

Tenaska Power Co. - Modeled generating resources and load requirements of the Electric Reliability Council of Texas. Developed power market clearing prices and dispatch forecast.

State of Hawaii - Modeled investor owned utility systems. Analyzed potential impacts of market power.

Analyzed feasibility of various levels of renewable generation technology.

Alabama Electric Cooperative, Inc. - Modeled investor owned utility system. Developed projections of retail customer class rates. Reviewed AEC staff analysis of bids received in response to solicitation for power.

Northeast Texas Electric Cooperative, Inc. - Developed screening model for analysis of power supply options received in response to Request for Proposals. Modeled utility system using Strategist for detailed integrated system analysis.

Nucor Corporation - Audited incremental energy billing calculations and procedures of electric service provider. Reviewed and recreated hourly billing records for a multi-year service period. Prepared forecasts of expected electric service curtailments under contract provisions for service interruptions

GST Steel Corporation – Calculated power cost over charges due to outage of power supplier generating resource.

Big Rivers Electric Corporation – Produced supply-side resource evaluation for Integrated Resource Plan.

Central Electric Power Corporation – Conducted simulation of power supply contracts to determine impacts on members.

Corn Belt Power Cooperative – Compared cost of continued asset ownership to purchased power contract.

Citizens Utility Board of Wisconsin – Calculated impacts to ratepayers associated with sale of investor-owned generating asset.

Brian D. Smith
Senior Project Manager

GDS Associates, Inc.
Page 4 of 4

Kiewit Mining Group, Inc. – Produced forecasts of ERCOT market prices to support asset fuel pricing analysis.

American Municipal Power – Ohio, Inc. – Produced production simulation of all PJM entities to support analysis of market restructuring.

Co-Owners of Arkansas Coal Projects – Produced evaluation of impacts associated with interruptions in fuel supply.

Old Dominion Electric Cooperative – Developed triennial Market Power Screen analytics included in FERC filings.

PRIOR TESTIMONY OFFERED:

Public Service Commission of the State of Missouri, Case No. EC-99-553, GST Steel Company vs. Kansas City Power & Light Company Relating to Overcharges to GST Resulting from Generating Station Explosion, November 1999

Georgia Public Service Commission, Docket No. 13305-U and Docket No. 13306-U, In the Matter of Georgia Power Company's Application for Approval of and Integrated Resource Plan and Savannah Electric and Power Company's Application for Approval of an Integrated Resource Plan Relating to Review and Evaluation of the Companies' Integrated Resource Plans on Behalf of the Commission Staff Adversary Team, May 2001

Wisconsin Public Service Commission, Docket No. 5-EI-136, In the Matter of the Application for All Approvals Necessary for the Transfer of Ownership and Operational Control of the Kewaunee Nuclear Power Plant From Wisconsin Public Service Corporation and Wisconsin Power and Light Company to Dominion Energy Kewaunee, Inc. on Behalf of Citizens Utility Board, May 2004.

Georgia Public Service Commission, Docket No. 31081, In the Matter of Georgia Power Company's 2010 Integrated Resource Plan on behalf of Georgia Public Service Commission Public Interest Advocacy Staff, May 2010.

Florida Public Service Commission, Docket No. 110009-EI, In the Matter of Florida Power & Light Company's Petition for Approval of Nuclear Power Plant Cost Recovery True-Up on behalf of the Florida Office of Public Counsel, August 2011.

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TURKEY POINT ST LUCIE SAVINGS ALLOCATION

TP Cost + TP Benefits = x
 SL Cost + SL Benefits = y
 x + y = Total Net Savings Shown Below

Assume TP Benefits = SL Benefits

Example Calc for Med Fuel, Env II Case

-1141.97	+ Benefits	=	x		x + y =	296
-446.76	+ Benefits	=	y		y =	296 - x
-695.21	=	=	x - y			
-695.21	=	=	x - (296 - x)			
-399.21	=	=	2x			
-199.605	=	=	x			
495.605	=	=	y			
296	=	=	x + Y			

To Go Costs

Turkey Point	1141.97
St. Lucie	446.76
Total	1588.73

		Total Net Savings (- represents savings)			
High Fuel	Env I	-619		TP Savings	SL Savings
High Fuel	Env II	-671		(+ represents savings)	
High Fuel	Env III	-760		-38.11	657.11
Medium Fuel	Env I	-243		-12.11	683.11
Medium Fuel	Env II	-296		32.40	727.61
Medium Fuel	Env III	-381		-226.11	469.11
Low Fuel	Env I	82		-199.61	495.61
				-157.11	538.11
				-388.61	306.61

Algebraic Example of Allocation of EPU Project Savings to Plants

Equation 1 Total CPVRR of EPU Incremental Costs – Total CPVRR of EPU Benefits = Total EPU Project Savings

can be expressed in separately for each plant

Equation 2 Turkey Point CPVRR of EPU Incremental Costs – Turkey Point CPVRR of EPU Benefits = Turkey Point EPU Project Savings

Equation 3 St. Lucie CPVRR of EPU Incremental Costs – St. Lucie CPVRR of EPU Benefits = St. Lucie EPU Project Savings

Substitute to-go costs for each plant from response of Interrogatory No. 19 from OPC's Fifth Set of Interrogatories for each plants' CPVRR OF EPU Incremental Costs

Equation 4 \$1,141.97 Million – Turkey Point CPVRR of EPU Benefits = Turkey Point EPU Project Savings = x

Equation 5 \$446.75 Million – St. Lucie CPVRR of EPU Benefits = St. Lucie EPU Project Savings = y

Assume that Turkey Point CPVRR of EPU Benefits = St. Lucie CPVRR of EPU Benefits and subtract Equation (5) from Equation (4)

\$1,141.97 Million - \$446.75 Million = x - y

or

\$695.22 Million = x - y

Use equation (6) to replace y in terms of x

Equation 6 $x + y = -\$296 \text{ million}$

or

$y = -\$296 \text{ Million} - x$

$\$695.22 \text{ Million} = x - (-\$296 \text{ Million} - x)$

yields

$\$695.22 \text{ Million} = 2x + \296 Million

yields

$\$399.22 \text{ Million} = 2x$

yields

$x = \$199.61 \text{ Million}$

Use Equation (6) to solve for y

$y = -\$296 \text{ Million} - x$

or

$y = -\$296 \text{ Million} - \199.61 Million

yields

$y = -\$495.61 \text{ Million}$

such that

$x + y = -\$296 \text{ Million}$

$\$199.61 \text{ Million} + (- \$495.61 \text{ Million}) = -\296 Million