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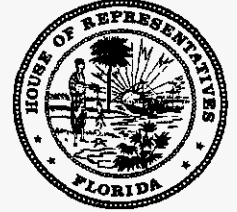
STATE OF FLORIDA
OFFICE OF PUBLIC COUNSEL



J.R. Kelly
Public Counsel

c/o THE FLORIDA LEGISLATURE
111 WEST MADISON ST.
ROOM 812
TALLAHASSEE, FLORIDA 32399-1400
1-800-342-0222

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



July 14, 2010

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

Re: Docket No. 100009-EI -Public Version Direct Testimony of OPC Witness Dr. William R. Jacobs, Jr.

Dear Ms. Cole:

Enclosed for filing are the original and 16 copies of the redacted, public version of the Direct Testimony of William R. Jacobs, Jr., Ph.D.

A PEF designated confidential 'version' has been filed concurrently with the Commission; that version is subject to a claim of confidentiality. The redactions in the public version correspond to the confidential designations in the confidential version filed today (and the electronic version filed by PEF on July 9, 2010 as DN-05648-10).

Parties who have made arrangements with PEF to receive confidential information are receiving the confidential version by separate service.

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

COM 5 Sincerely,
APA 2
ECR 5
GCL 2
RAD | Charles J. Rehwinkel
SSC Associate Public Counsel
ADM
OPC
CLK CT.RPR cc: All parties of record

DOCUMENT NUMBER-DATE
05793 JUL 14 2010
FPSC-COMMISSION CLERK

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In Re: Nuclear Cost Recovery)
Clause)
_____)

Docket No. 100009-EI

FILED: July 14, 2010

(PUBLIC VERSION)

DIRECT TESTIMONY

OF

WILLIAM R. JACOBS, JR., Ph.D.

ON BEHALF OF THE CITIZENS OF

THE STATE OF FLORIDA

REVIEW OF PROGRESS ENERGY FLORIDA'S

NUCLEAR COST RECOVERY RULE FILING

J.R. Kelly
Public Counsel

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

Attorney for the Citizens
Of the State of Florida

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Attorney for the Citizens
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1 **DIRECT TESTIMONY**

2 **Of**

3 **WILLIAM R. JACOBS JR., Ph.D.**

4 On Behalf of the Office of Public Counsel

5 Before the

6 Florida Public Service Commission

7 Docket No. 100009-EI

8
9 **I. INTRODUCTION**

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

11 A. My name is William R. Jacobs, Jr., Ph.D. I am a Vice President of GDS Associates,
12 Inc. My business address is 1850 Parkway Place, Suite 800, Marietta, Georgia,
13 30067.

14
15 **Q. DR. JACOBS, PLEASE SUMMARIZE YOUR EDUCATIONAL
16 BACKGROUND AND EXPERIENCE.**

17 A. I received a Bachelor of Mechanical Engineering in 1968, a Master of Science in
18 Nuclear Engineering in 1969 and a Ph.D. in Nuclear Engineering in 1971, all from
19 the Georgia Institute of Technology. I am a registered professional engineer and a
20 member of the American Nuclear Society. I have more than thirty years of
21 experience in the electric power industry including more than twelve years of power
22 plant construction and start-up experience. I have participated in the construction and
23 start-up of seven power plants in this country and overseas in management positions
24 including start-up manager and site manager. As a loaned employee at the Institute of
25 Nuclear Power Operations ("INPO"), I participated in the Construction Project

1 Evaluation Program, performed operating plant evaluations and assisted in the
2 development of the Outage Management Evaluation Program. Since joining GDS
3 Associates, Inc. in 1986, I have participated in rate case and litigation support
4 activities related to power plant construction, operation and decommissioning. I have
5 evaluated nuclear power plant outages at numerous nuclear plants throughout the
6 United States. I am currently on the management committee of Plum Point Unit 1, a
7 650 MWe coal fired power plant under construction near Osceola, Arkansas. As a
8 member of the management committee, I assist in providing oversight of the EPC
9 contractor for this project. I am currently the Georgia Public Service Commission's
10 (GPSC) Independent Construction Monitor for Georgia Power Vogtle 3 and 4 nuclear
11 project. As the Independent Construction Monitor I assist the GPSC Commissioners
12 and Staff in providing regulatory oversight of the project. My monitoring activities
13 include regular meetings with project management personnel and regular visits to the
14 Vogtle plant site to monitor construction activities and assess the project schedule and
15 budget. My resume is included as Exhibit WRJ(PEF)-1.

16

17 **Q. WERE YOU ASSISTED BY OTHER GDS PERSONNEL IN THIS EFFORT?**

18 A. Yes I was. The GDS team involved in the review and evaluation of the requests for
19 authorization to recover costs consisted of me, Mr. James P. McGaughy, Jr., a former
20 nuclear utility executive with over 37 years of experience and Mr. Cary Cook, a
21 Certified Public Account with extensive experience in utility regulation. The resumes
22 of Mr. McGaughy and Mr. Cook are attached to this testimony as Exhibit WRJ(PEF)-
23 2. I have reviewed the work of both and am familiar with their input and have
24 incorporated and adopted it as my own.

1 **Q. WHAT IS THE NATURE OF YOUR BUSINESS?**

2 A. GDS Associates, Inc. (“GDS”) is an engineering and consulting firm with offices in
3 Marietta, Georgia; Austin, Texas; Corpus Christi, Texas; Manchester, New
4 Hampshire; Madison, Wisconsin; Manchester, Maine; and Auburn, Alabama. GDS
5 provides a variety of services to the electric utility industry including power supply
6 planning, generation support services, rates and regulatory consulting, financial
7 analysis, load forecasting and statistical services. Generation support services
8 provided by GDS include fossil and nuclear plant monitoring, plant ownership
9 feasibility studies, plant management audits, production cost modeling and expert
10 testimony on matters relating to plant management, construction, licensing and
11 performance issues in technical litigation and regulatory proceedings.

12

13 **Q. WHOM ARE YOU REPRESENTING IN THIS PROCEEDING?**

14 A. I am representing the Florida Office of Public Counsel who represents the ratepayers
15 of Progress Energy Florida.

16

17 **Q. WHAT WAS YOUR ASSIGNMENT IN THIS PROCEEDING?**

18 A. I was asked to assist the Florida Office of Public Counsel to conduct a review and
19 evaluation of requests by Progress Energy Florida (PEF) for authority to collect
20 historical and projected costs associated with extended power uprate (“EPU”) project
21 being pursued at Crystal River Unit 3, and historical and projected costs associated
22 with PEF’s Levy County Units 1 and 2 project (“LNP”) through the capacity cost
23 recovery clause.

1 Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

2 A. Yes. I testified on behalf of the Florida Office of Public Counsel in the previous
3 NCRC proceedings in Dockets No. 080009-EI and 090009-EI.

4

5 **II. SUMMARY OF AUTHORIZATION TO COLLECT COSTS**

6 Q. PLEASE SUMMARIZE PEF'S REQUEST FOR COST RECOVERY IN THIS
7 DOCKET UNDER THE NUCLEAR COST RECOVERY CLAUSE.

8 A. PEF is requesting total revenue requirements to be collected in 2011 of \$147.7
9 million for the Levy Nuclear Project and \$16.0 million for the Crystal River 3 EPU
10 project.

11

12 **III. METHODOLOGY**

13 Q. PLEASE DESCRIBE THE METHODOLOGY THAT YOU USED TO
14 REVIEW AND EVALUATE THE REQUESTS FOR AUTHORIZATION TO
15 COLLECT COSTS SUBMITTED BY PEF UNDER THE NUCLEAR COST
16 RECOVERY CLAUSE.

17 A. I first reviewed the Company's filings in this docket and assisted in the issuance of
18 numerous interrogatories and requests for production of documents. To evaluate the
19 issues related to project schedule and risk management, I reviewed many internal
20 documents, status reports and correspondence with regulatory authorities. I reviewed
21 responses to discovery requests and issued additional discovery requests as needed.

1 **IV. ISSUES AND CONCERNS**

2 **Q. PLEASE DESCRIBE THE ISSUES AND CONCERNS THAT YOU**
3 **IDENTIFIED FROM YOUR REVIEW OF PEF'S REQUEST.**

4 A. I have identified concerns in both the LNP and the EPU projects that raise questions
5 concerning the sufficiency of PEF's demonstration that its decision making was
6 adequate under the circumstances.

7
8 **EVALUATION OF OPTIONS FOR THE LEVY COUNTY PROJECT**

9
10 **Q. PLEASE PROVIDE A BRIEF OVERVIEW OF THE RECENT HISTORY OF**
11 **THE LEVY NUCLEAR PROJECT FOR THE COMMISSION.**

12 A. On December 31, 2008, PEF signed an Engineering, Procurement and Construction
13 (EPC) contract with the Westinghouse – Shaw consortium (Consortium) to design
14 and construct two AP1000 nuclear power plants at the Levy County site. The
15 projected commercial operation dates for these two units was the summer of 2016 for
16 the first unit and the summer of 2017 for the second unit. The project schedule which
17 formed the basis for the EPC agreement was predicated on the project receiving a
18 limited work authorization (LWA) from the NRC which would allow certain safety
19 related work to proceed before the project was issued its Combined License (COL).

20
21 Approximately three weeks after signing the EPC contract, the Company received
22 notification from the NRC that the anticipated schedule for NRC approval of the
23 requested LWA would not be possible due primarily to the complex geology at the
24 Levy County site. Upon receipt of this notification, the EPC contract signed just
25 three weeks before was no longer viable. On May 1, 2009, the Company announced

1 a schedule shift of at least 20 months for the Levy project (See Exhibit WRJ(PEF)-3,
 2 pages1-2). The Company issued a letter to the Consortium requesting the Consortium
 3 to conduct six schedule and cash flow analyses for the project (See 10NC-OPCPOD1-
 4 3-000005). The results of these analyses formed the basis for the Company’s
 5 announced plan going forward for the Levy Nuclear Project.

6

7 **Q. WHAT WERE THE COMPANY’S STATED STRATEGIC INTENT AND**
 8 **OBJECTIVES IN DEVELOPING THE GOING FORWARD PATH FOR THE**
 9 **PROJECT?**

10 A. As stated in the March 8, 2010, Senior Management Committee presentation, the
 11 strategic intent and objectives were to:

12 “...minimize near term cash flow requirements while maintaining long term
 13 flexibility to continue or pursue nuclear development projects.” (See 10NC-
 14 OPCPOD1-1-000097.)

15

16 **Q. BRIEFLY DESCRIBE THE SCENARIOS ANALYZED BY THE COMPANY.**

17 A. In the Senior Management Committee presentation dated February 15, 2010 (see
 18 10NC-OPCPOD101-000057) the Company identified three possible options for the
 19 project:

20 • Option 1 - Full Speed Project Continuation: This option would lead to Unit 1
 21 Commercial Operation Date (COD) in late-2019. Estimated total cost for this
 22 option excluding AFUDC is [REDACTED]. Expenditures in 2010 – 2012 to
 23 support this option would be [REDACTED].

24 • Option 2 - Project Cancellation – This option would result in cancellation of
 25 the project and [REDACTED] for the base EPC contract plus

1 other payments as required by contractual obligations. Expenditures in 2010 –
 2 2012 for this option are estimated to be [REDACTED]. If cancelled, the total
 3 cost of the LNP that customers would be expected to bear would be [REDACTED]
 4 [REDACTED] through 2012 with possible additional costs pending the outcome of
 5 negotiations with the Consortium.

6 • Option 3 - Project Continuation with EPC Amendment – This option involves
 7 continuation of work needed to support COL issuance in late 2012. It
 8 assumes that a Notice to Proceed would be issued in 2013 with Unit 1 COD in
 9 2021. The estimated total cost for this option excluding AFUDC is [REDACTED]
 10 [REDACTED]. Expenditures in 2010 – 2012 for this option are estimated to be
 11 [REDACTED]

12

13 **Q. WHICH OPTION HAS THE COMPANY SELECTED?**

14 A. The Company decided to proceed with Option 3 as described above.

15

16 **Q. DID THE COMPANY ANALYZE ALL OF THE LIKELY SCENARIOS IN
 17 DECIDING THE PATH FORWARD FOR THE LEVY PROJECT?**

18 A. No, they did not. I believe that another reasonably possible outcome scenario is for
 19 the project to be cancelled after receipt of the COL in late 2012.

20

21 **Q. DID YOU ASK THE COMPANY FOR THIS SCENARIO ANALYSIS?**

22 A. Yes, I did. In Interrogatory Question 46 I asked the Company if they had estimated
 23 the cost for the chosen alternative (continuation with COL and minimum continuation
 24 of the EPC contract) followed by cancellation after receipt of the COL. The
 25 Company responded:

1 As stated in the April 30, 2010 testimony of John Elnitsky at
2 pages 29 – 30, while the Company did evaluate a full project
3 cancellation scenario, continuation options provided the best fit
4 to the Company’s stated objectives with regard to the Levy
5 Project, primarily:

- 6 a) Significant reduction of near term customer price impact;
- 7 b) Continuance of nuclear generation as a viable option for
8 future fuel and carbon emission cost savings as compared
9 to an all natural gas-fired generation plan;
- 10 c) Preservation of the beneficial terms and conditions of the
11 EPC contract; and
- 12 d) Movement of risk and significant cash outflow past COL
13 receipt.

14
15 The alternative presented in Question 46, project cancellation
16 after receipt of COL, would not have met these stated
17 objectives and as such, was not evaluated.
18

19 **Q. DID ANYTHING STRIKE YOU AS UNUSUAL ABOUT THE COMPANY’S**
20 **RESPONSE TO YOUR QUESTION REGARDING CANCELLATION OF**
21 **THE PROJECT AFTER RECEIPT OF THE COL?**

22 A. Yes. The Company’s response did not state that they considered this scenario to be
23 unlikely or unreasonable. They merely stated that it would not have met their stated
24 objectives.
25

26 **Q. WHY DID YOU REQUEST THE COMPANY TO EVALUATE THE COST OF**
27 **THIS 4TH SCENARIO?**

28 A. Because in my opinion, it is a reasonably likely outcome for the project. Therefore,
29 the cost of this scenario should be estimated and compared to the cost of the other
30 scenarios evaluated by the Company to ensure that the chosen option provides the
31 most value for ratepayers. If the cost of this scenario is significantly greater than
32 immediate cancellation of the project, the Company should justify why the chosen
33 option is preferred over cancellation of the project since hundreds of millions of

1 dollars of ratepayer funds are required and at risk for up-front funding initial project
2 costs.

3
4 **Q. SPECIFICALLY, WHY DO YOU BELIEVE THAT CANCELLATION OF**
5 **THE LEVY PROJECT AFTER RECEIPT OF THE COL IS A REASONABLY**
6 **LIKELY SCENARIO?**

7 A. In his April 30, 2010 testimony in this docket, Progress Executive Vice President Jeff
8 Lyash spent over 30 pages describing various risks that could impact the project and
9 were considered by PEF in selecting their chosen path for the project. These risks
10 include:

- 11 • License and permitting activities that could impact the LNP COL;
- 12 • World economic conditions;
- 13 • Economic conditions in this country and Florida;
- 14 • Economic conditions for the Company including capital market reactions;
- 15 • Load growth impacts;
- 16 • Customer rates for nuclear generation;
- 17 • Continued state legislative support for nuclear generation;
- 18 • State energy efficiency policy and regulation;
- 19 • State energy policy and environmental policy and regulation;
- 20 • Federal energy and environmental policy and regulation; and
- 21 • Federal support for nuclear generation.

22
23 This is a lengthy list of risk factors for the Company to consider. The July and
24 September 2009 and March 2010 Board of Directors minutes, (see 10NC-OPCPOD1-
25 9-000135, 10NC-OPCPOD1-9-000153, 10NC-OPCPOD1-1-00023 and 10NC-

1 OPCPOD1-1-00039) statements to the Senior Management Committee (see 10NC-
2 OPCPOD1-1-000061) and statements to credit rating agencies (see 10NC-
3 OPCPOD1-9-000135) are all consistent with a major retrenchment from the original
4 project timeline and from what was then active pursuit of building nuclear generation
5 to a cautious option preservation tack that has a wary eye on the long list of
6 uncertainties. At this time the Company's consideration of these risks, along with
7 other factors, has caused the Company to conclude that the project schedule should be
8 delayed with a decision on going forward deferred until at least 2013. It should also
9 be noted that the Company has a hard deadline of January 1, 2014, to begin safety
10 related construction in order to be eligible for the EPACT tax credits. This date will
11 not change. Any slippage in the COL issue date and/or the lack of resolution of the
12 material risk uncertainties will place the continuation of the project further in
13 jeopardy.

14
15 It is possible by 2013 the Company will have gained sufficient clarity and certainty
16 on these many risks to support a decision to continue with the LNP. However, it can
17 reasonably be argued that 2013 will be just as likely not to bring sufficient clarity and
18 certainty that these risks are acceptable. Or 2013 might bring certainty that these
19 risks have not diminished and in fact have increased. Given the number and scope of
20 significant risks identified by Mr. Lyash, I believe it is reasonable that the Company
21 should have to consider the scenario in which the Company ends up concluding in
22 2013 that the risk and/or cost of continuing the project is too great and the project is
23 cancelled.

1 **Q. DOES IT APPEAR THAT THE UNCERTAINTIES CREATING THE RISKS**
2 **IN THE AREAS IDENTIFIED BY MR. LYASH ARE BECOMING**
3 **CLEARER?**

4 A. No it does not. An April 17, 2009 presentation to the Progress Energy Board of
5 Directors (see 09NC-OPCPOD3-61-000057) identifies the benefits of delaying the
6 LNP schedule including providing additional time for and certainty on:

- 7 • Obama Administration nuclear position
- 8 • Financial market and economic rebound
- 9 • Customer/policy maker support
- 10 • PEF rate case, first NCRC prudence hearing
- 11 • Federal policies on carbon, renewables and coal
- 12 • JO participation
- 13 • NRC COLA process
- 14 • Commodity/labor stabilization

15 Most of these risks existed and were known to PEF prior to the execution of the EPC
16 contract. Many of these same items are repeated or alluded to in the July 2009,
17 September 2009 and March 15 and 17, 2010, Board of Directors minutes (see
18 citations above), as well as in the list of risks identified in Mr. Lyash's testimony over
19 one year later. The past year has not resulted in additional clarity or certainty on
20 many of these items. PEF has not demonstrated that an additional 2 to 3 years will
21 provide the degree of certainty necessary for the Company to reach a decision to
22 proceed with the Levy project even if and when the COL is issued.

1 **Q. IS THERE ANOTHER REASON THAT YOU BELIEVE THAT**
2 **CANCELLATION OF THE LNP AFTER ISSUANCE OF THE COL IS AN**
3 **OUTCOME THAT SHOULD BE EVALUATED BY THE COMPANY?**

4 A. Yes, there is. The April 17, 2009 Board presentation identifies the following
5 conditions to proceed with the Levy project (see 09NC-OPCPOD3-61-000053):

6 **• Levy Project Success Factors**

- 7 ○ [REDACTED]
- 8 ○ [REDACTED]
- 9 ○ [REDACTED]
- 10 ○ [REDACTED]

11 **• Levy Project Must Support Our Financial Success Factors**

- 12 ○ [REDACTED]
- 13 ○ [REDACTED]
- 14 ○ [REDACTED]
- 15 ○ [REDACTED]

16 Most of these conditions have not yet been met and may prove to be difficult to meet
17 by 2013. Again, no improvement or clarity on these risks appears to be found in the
18 July 2009, September 2009 or March 2010 Board of Directors minutes.

19

20 **Q. DO YOU BELIEVE THAT THE DECISION TO SIGN THE EPC CONTRACT**
21 **FOR LEVY COUNTY ON DECEMBER 31, 2008 WAS A REASONABLE**
22 **DECISION?**

23 A. No, I do not. As I testified last year, in my opinion it was not reasonable for PEF to
24 sign the EPC contract on December 31, 2008. PEF signed what is likely the largest
25 contract in the history of the State of Florida without any assurance that the LWA

1 would be issued. Receipt of the LWA within the requested timeframe was a
2 requirement for implementation of the contract on the schedule contained in the EPC
3 contract. Not only did PEF not have any assurance that the LWA would be issued,
4 the NRC specifically told them in an October 6, 2008, letter (see 09NC-OPCPOD3-
5 64-000012) that it was unlikely that the requested timeline would be met. Under the
6 totality of the circumstances, PEF should have assumed that an LWA review schedule
7 different than the overall COLA review schedule would not have been adopted by the
8 NRC. To assume otherwise and sign the EPC contract with this cloud hanging over
9 this critical date was not reasonable.

10
11 Furthermore PEF signed the EPC contract while many of the uncertainties that are
12 creating the need to delay an additional 3 years (to a total of 5) were in existence (in
13 2008). I am concerned that PEF's assessment of these risks has not always
14 manifested concern for the upfront expenditure and recovery of ratepayer-provided
15 funds. Yet again, PEF appears to be downplaying the reality to the identified risks in
16 proposing to proceed with the further expenditure and recovery of customer funds. I
17 believe that due to the tenuous nature of the LNP project and the lack of foreseeable
18 resolution of the uncertainties the Commission might want to consider placing some
19 of PEF's proposed expenditures at risk if they believe that PEF has not prudently
20 evaluated the options that involve spending customer funds for the next three to four
21 years.

22
23 **Q. DO YOU BELIEVE THAT THE COMPANY'S DECISION TO SIGN THE**
24 **EPC AGREEMENT IN DECEMBER 2008 WITHOUT THE LWA AND WITH**

1 **THE KNOWN UNCERTAINTIES DISCUSSED ABOVE RESULTED IN**
 2 **ADDITIONAL COSTS?**

3 A. Yes, I do. I believe that it was unreasonable to sign the EPC contract without
 4 knowing the LWA schedule and that signing the EPC contract would result in extra
 5 costs. The additional costs incurred by PEF can be seen by comparing the costs spent
 6 to date between Levy and Florida Power and Light’s Turkey Point 6 and 7 project.
 7 Both of the projects are in essentially the same place from a schedule perspective with
 8 LNP Unit 1 scheduled COD in late 2021 and Turkey Point Unit 6 COD scheduled for
 9 2022. FPL has not signed an EPC contract for the new Turkey Point units but is
 10 continuing to pursue a COL for these units. The primary difference in the status of
 11 these projects is that PEF has committed to the procurement of long lead material and
 12 is now trying to determine the best way to dispose of this material. The difference in
 13 dollars spent between the two projects is striking. Through 2011, PEF will have spent
 14 ██████████ (PEF Exhibit JL-6, page 22) on LNP while FPL will have spent
 15 \$170.1 million on the Turkey Point project. PEF will have spent ██████████
 16 ██████████ due primarily to their unreasonable decision to sign the
 17 EPC contract in December 2008. If the projects are cancelled, ██████████
 18 ██████████.

19
 20 **Q. MS. GALLOWAY TESTIFIES EXTENSIVELY TO THE BENEFITS THAT**
 21 **PEF GAINED BY HAVING SIGNED THE EPC CONTRACT. DO YOU**
 22 **BELIEVE THAT THE COMPANY COULD HAVE ACHIEVED THE SAME**
 23 **CONTRACTUAL BENEFITS BY WAITING TO SIGN THE EPC**
 24 **CONTRACT UNTIL THE SCHEDULE FOR THE LWA WAS KNOWN?**

1 A. Yes, I do. The only AP1000 projects under construction in the United States at this
2 time are Georgia Power's Vogtle 3 and 4 project and South Carolina Electric and
3 Gas' Summer 2 and 3. The CODs for these projects are 2016 for the first units and
4 2017 for the second units at each site. Westinghouse and Shaw have invested
5 significant sums of money to develop the capabilities needed for the Vogtle and
6 Summer project. These capabilities include large expansions in staff and construction
7 of the Shaw Modular Systems facility in Lake Charles, Louisiana to construct
8 modules for these projects. It is my belief that PEF would have been in an excellent
9 position to negotiate an EPC contract at least as good as the current amended LNP
10 contract given Westinghouse and Shaw's need for an AP1000 project to utilize their
11 personnel and facilities following behind the Vogtle and Summer projects.

12

13 **CRYSTAL RIVER 3 EPU PROJECT**

14

15 **Q. PLEASE BRIEFLY DESCRIBE THE CRYSTAL RIVER UNIT 3 EXTENDED**
16 **POWER UPRATE PROJECT.**

17 A. The Crystal River 3 (CR3) extended power uprate project adds a total of 180 MWe to
18 the existing plant. This is accomplished by increasing reactor power output and thus
19 steam output, increasing the size and efficiency of the steam turbine and generator
20 and increasing the accuracy of instrumentation in the plant's steam system. The
21 project is being carried out in three phases. Phase 1 improved the steam plant
22 measurement accuracy of process parameters and allowed the power output to be
23 increased by about 12 MWe. These improvements were made in 2007 and were
24 placed in service on January 31, 2008.

1 According to the initial plans, Phase 1 was to be followed by a Phase 2 that would
2 increase the capacity and efficiency of the turbine-generator and other non-nuclear
3 parts of the plant in a 2009 outage. This would make the plant more efficient and
4 allow it to receive the 15.5% increase in steam flow that would become available
5 after the reactor upgrade planned for a Phase 3 to be implemented in a 2011 outage.
6 The efficiency increases in Phase 2 would increase the output 28 MWe, while using
7 only the current steam flow. Phase 3 would increase output by increasing reactor
8 power and steam flow adding 140 MWe for a total uprate of 180 MWe.

9 The initial plan has been modified because of two unplanned occurrences.

- 10 ● The new low pressure turbines failed testing in the manufacturer's German
11 facilities necessitating repair and modification.
- 12 ● The reactor containment building was damaged during the 2009 outage to replace
13 the steam generators. The steam generators are very large components that
14 required a large hole to be cut through the cylindrical, concrete containment
15 structure. In the process, the concrete separated from the rebar necessitating
16 extensive analysis, redesign and repair.

17 As a result, Phase 3 has been delayed until the spring of 2012 and the scope has been
18 modified to include the high and low pressure turbine modifications as well as the
19 nuclear reactor systems modifications. (Crystal River 3 Extended Power Uprate
20 Integrated Project Plan, May 2010; 10NC-OPCPOD3-54-000014)

21
22 **Q. WHAT IS THE CURRENT STATUS OF THE PROJECT?**

- 23 A. The Crystal River 3 nuclear plant is now in an extended outage to repair the damaged
24 containment building and to implement the reduced scope Phase 2 of the EPU project.
25 This outage is projected to be complete in September 2010 (see 10NC-OPCPOD3-54-

1 000014). The Company has projected that \$318.6 million (out of a total of \$479.4
2 million) will have been spent by the end of 2010 (see 10NC-OPCPOD3-54-000015).
3 Work currently underway includes an essentially new generator and a number of
4 larger steam cycle components.

5
6 **Q. HOW DOES THIS EPU PROJECT COMPARE WITH OTHER EPU**
7 **PROJECTS FOR PWRs IN THE UNITED STATES?**

8 A. In terms of reactor power (15.8% or 140 MWe), the CR3 uprate is by far the largest
9 ever approved for a U.S. PWR. Most have been in the 5% range. The Ginna plant
10 had a 17% increase, but on a much smaller plant netting about 85 MWe. (See Exhibit
11 WRJ(PEF)-3, pages 3-7.)

12
13 **Q. DOES THIS LARGE PERCENTAGE INCREASE RESULT IN A**
14 **TECHNICALLY CHALLENGING PROJECT?**

15 A. Yes, it does. For plants that increase power in the 5% range, the NRC calls these
16 uprates “stretch” uprates which generally indicates that the existing plant systems can
17 be used as is or with slight modification to marginally increase steam flows to
18 increase power. This would be a “stretch” of the existing plant. The CR3 uprate is
19 called an “extended” power uprate (EPU) by the NRC. In the extended uprates,
20 major plants components and systems have to be replaced to accommodate the new,
21 increased power levels. There have been 129 uprates approved by the NRC and only
22 five have been EPU’s on PWR’s. The largest of these five is 90 MWe at Waterford
23 (vs. 180 MWe at CR3) and none of these five are B&W plants.

24 The CR3 EPU project results in essentially a new, larger plant in the old plant
25 framework and building. There are new turbine generators and steam cycle

1 equipment. Safety systems that must function in an accident situation must be
2 reanalyzed and modified. A safety injection cross-tie has been installed. PEF will
3 install enlarged, safety related atmospheric dump valves and related systems to
4 depressurize the reactor after an accident to allow easier water flow into the core.

5
6 **Q. WHAT IS A LICENSE AMENDMENT REQUEST (LAR) AND WHEN IS AN**
7 **LAR NEEDED?**

8 A. A nuclear power plant undergoes an extensive safety analysis of its design and as-
9 built condition by the NRC in the issuance of an operating license. The NRC issues
10 an extensive set of technical specifications. Any change to a licensed plant that
11 would change or invalidate this safety analysis must be submitted to the NRC for
12 review and approval. This submittal is called a License Amendment Request or
13 LAR.

14
15 **Q. WILL THE CR3 EPU PROJECT REQUIRE AN LAR?**

16 A. Yes. PEF has been working with engineering contractors and consultants for several
17 years to prepare an LAR for the CR3 EPU project. It is my understanding that the
18 document will be over 2,000 pages (see PEF response to OPC Interrogatory Question
19 34). It will describe in detail the design changes to the plant, how these changes
20 modify the original plant safety analysis and how it affects the plant operation. Many
21 plant operating and maintenance procedures will have to be modified (see 10NC-
22 OPCPOD3-56-000063 to 66). All operators must be trained on the new procedures.

23
24 **Q. HAS THE CR3 LAR BEEN SUBMITTED TO THE NRC FOR REVIEW?**

1 A. No. In my testimony of last year, I noted that PEF planned to file the LAR in the fall
 2 of 2009. PEF was unable to meet that schedule. The CR3 Integrated Project Plan
 3 (IPP) of October 2009 stated that it was essential that the LAR be filed by March
 4 2010 (see 10NC-OPCPOD1-40-000521), but that was not accomplished. The current
 5 IPP states that the LAR was complete in March 2010. In his testimony of April 30,
 6 2010, Company witness Franke stated that the LAR would be filed by June 1, 2010,
 7 but the Company failed to make that date also. It is my understanding from the NRC
 8 that they expect a filing on July 15, but that is not a “firm date”.

9

10 **Q. WHAT WOULD BE THE RESULT IF THE CR3 LAR IS NOT APPROVED**
 11 **BY THE NRC?**

12 A. CR3 could not operate at the new power level and most of the benefits of the EPU
 13 project would be lost.

14

15 **Q. WHAT ARE THE COSTS ASSOCIATED WITH THE CR3 EPU PROJECT?**

16 A. Costs from the May 2010 CR3 Integrated Project Plan are as follows:

17	<u>Year</u>	<u>Cost (millions \$ w/oAFUDC)</u>	<u>% of Total</u>	<u>Cumulative</u>
18	2006	\$2.3	0.5%	0.5%
19	2007	\$38.5	8.5%	8.5%
20	2008	\$65.1	13.2%	22.0%
21	2009	\$125.1	26.1%	48.1%
22	2010	\$87.6	18.3%	66.4%
23	2011	\$98.5	20.5%	86.9%
24	2012	\$62.2	13.0%	100.0%
25	Total	\$479.4		

1 **Q. HOW MUCH OF THE CR3 EPU BUDGET WILL HAVE BEEN SPENT**
2 **BEFORE THE COMPANY KNOWS WHETHER OR NOT THE NRC WILL**
3 **ISSUE A LICENSE FOR THE FULL UPRATE REACTOR POWER?**

4 A. According to the May 2010 IPP, the LAR is forecast by the Company for May 2012
5 when almost 100% of the money will have been spent (see 10NC-OPCPOD3-54-
6 000014). Essentially all the money will be spent before the Company knows if the
7 NRC will approve the uprate.

8

9 **Q. COULD THE COMPANY HAVE REDUCED THE RISK BY RESOLVING**
10 **THE NRC LICENSING ISSUES BEFORE SPENDING THE LARGE SUMS**
11 **TO MODIFY THE SECONDARY PLANT?**

12 A. Yes. If the Company had filed for their LAR in the fall of 2009 as had been planned,
13 the review could have been completed before the portion of Phase 2 was postponed
14 until 2012 and the Phase 3 work would have to be done. If problems with NRC
15 approval of the LAR occurred, the additional money would not need to be spent until
16 (and if) the questions were resolved.

17

18 **Q. WHAT ARE YOUR CONCLUSIONS CONCERNING THE EPU PROJECT?**

19 A. In my testimony of last year, it was my opinion that the Company should not have
20 proceeded with Phase 2 without knowing the outcome of the NRC's review of the
21 complicated LAR and any additional requirements that may result from the NRC's
22 review. At that time, the Company planned to file the LAR in September 2009.
23 Since that time, Phase 3 has been delayed by the CR3 containment concrete problem
24 and the scope of Phase 2 has been reduced and shifted in Phase 3 because of the low

1 pressure turbine test failures. If the LAR had been pursued as planned beginning in
2 September 2009, the Company would have had the opportunity to know of its success
3 or failure before spending the money for Phase 3. As plans now stand (according to
4 the May 2010 IPP), the Company will not receive the LAR until after essentially all
5 the money is spent.

6
7 **V. RECOMMENDATIONS**

8 **Q. WHAT IS YOUR RECOMMENDATION REGARDING THE LEVY**
9 **NUCLEAR PROJECT?**

10 A. I recommend that the Commission order the company to analyze a scenario in which
11 the LNP is cancelled after receipt of the COL. Based on the results of this analysis,
12 the Company should justify that the chosen path for the project to ensure that this
13 path is in the ratepayers' interests.

14
15 **Q. WHAT IS YOUR RECOMMENDATION REGARDING THE CRYSTAL**
16 **RIVER 3 EPU PROJECT?**

17 A. By the next NCRC hearing in 2011, the Company will have submitted the LAR to the
18 NRC and it could be approved. If it has not been approved, the Company should
19 have a good indication of any issues or concerns that the NRC has identified. I
20 recommend that the Company provide a full update of the status of the LAR at the
21 next NCRC hearing. If the NRC's review of the LAR results in an approved power
22 uprate of less than 140 Mw, the Commission should require the Company to
23 demonstrate that the project remains economically feasible and that its project
24 schedule was prudent.

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

2 A. Yes, it does.

CERTIFICATE OF SERVICE

Docket No. 100009-EI

I HEREBY CERTIFY that a true and correct copy of the public version of the Direct Testimony of William R. Jacobs, Jr., Ph.D. has been furnished by U. S. Mail to the following parties on this 14th day of July, 2010.

John T. Burnett /Alexander Glenn
Progress Energy Service Company, LLC
P.O. Box 14042
St. Petersburg, FL 33733-4042

John McWhirter, Jr.
c/o McWhirter Law Firm
Florida Industrial Power Users Group
PO Box 3350
Tampa, FL 33601

Keino Young/Lisa Bennett
Anna Williams
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Mr. Paul Lewis, Jr.
Progress Energy Florida, Inc.
106 East College Ave, Suite 800
Tallahassee, FL 32301-7740

Vicki G. Kaufman/Jon C. Moyle, Jr.
Florida Industrial Power Users Group
118 North Gadsden Street
Tallahassee, FL 32301

Mr. Wade Litchfield
Florida Power & Light Company
215 South Monroe St., Suite 810
Tallahassee, FL 32301-1859

Matthew R. Bernier
Carlton Fields Law Firm
215 South Monroe St., Suite 500
Tallahassee, FL 32301-1866

J. Michael Walls
Carlton Fields Law Firm
P.O. Box 3239
Tampa, FL 33601-3239

Randy B. Miller
White Springs Agriculture
Chemicals, Inc
P.O. Box 300
White Springs, FL 32096

Dianne M. Tripplett
229 1st Avenue N PEF-152
St. Petersburg, FL 33701

Bryan J. Anderson/Jessica Cano/ Garson R.
Florida Power and Light Company
700 Universe Blvd
Juno Beach, FL 33418

James W. Brew/F. Alvin Taylor
1025 Thomas Jefferson St. NW, 8th
Flo, West Tower
Washington, DC 20007

Shayla L. McNeill, Capt, USAF
Federal Executive Agencies
c/o AFLSA/JACL-ULT
139 Barnes Drive, Suite 1
Tyndall AFB, FL 32403-5319

Gary A. Davis & James Whitlock
Gary A. Davis & Associates
P.O. Box 649
Hot Springs, NC 28743

Southern Alliance for Clean Energy
P.O. Box 1842
Knoxville, TN 37901

Bill McCollum/Cecilia Bradley
Office of the Attorney General
The Capital-PLO1
Tallahassee, FL 32399



Charles J. Rehwinkel
Associate Public Counsel

William R. Jacobs, Jr.
Vice President - Generation Support Services

EDUCATION: Ph.D., Nuclear Engineering, Georgia Tech 1971
MS, Nuclear Engineering, Georgia Tech 1969
BS, Mechanical Engineering, Georgia Tech 1968

ENGINEERING REGISTRATION: Registered Professional Engineer

PROFESSIONAL MEMBERSHIP: American Nuclear Society

EXPERIENCE:

Dr. Jacobs has over thirty-five years of experience in a wide range of activities in the electric power generation industry. He has extensive experience in the construction, startup and operation of nuclear power plants. While at the Institute of Nuclear Power Operation (INPO), Dr. Jacobs assisted in development of INPO's outage management evaluation group. He has provided expert testimony related to nuclear plant operation and outages in Texas, Louisiana, South Carolina, Florida, Wisconsin, Indiana, Georgia and Arizona. He currently provides nuclear plant operational monitoring services for GDS clients. Dr. Jacobs was a witness in nuclear plant certification hearings in Georgia for the Plant Vogtle 3 and 4 project on behalf of the Georgia Public Service Commission and in South Carolina for the V.C. Summer 2 and 3 projects on behalf of the South Carolina Office of Regulatory Staff. His areas of expertise include evaluation of reactor technology, EPC contracting, risk management and mitigation, project cost and schedule. He is assisting the Florida Office of Public Counsel in monitoring the development of four new nuclear units in the State of Florida, Levy County Units 1 and 2 and Turkey Point Units 6 and 7. He has been selected by the Georgia Public Service Commission as the Independent Construction Monitor for Georgia Power Company's new AP1000 nuclear power plants, Plant Vogtle Units 3 and 4. He has assisted the Georgia Public Service Commission staff in development of energy policy issues related to supply-side resources and in evaluation of applications for certification of power generation projects and assists the staff in monitoring the construction of these projects. He has also assisted in providing regulatory oversight related to an electric utility's evaluation of responses to an RFP for a supply-side resource and subsequent negotiations with short-listed bidders. He has provided technical litigation support and expert testimony support in several complex law suits involving power generation facilities. He monitors power plant operations for GDS clients and has provided testimony on power plant operations and decommissioning in several jurisdictions. Dr. Jacobs represents a GDS client on the management committee of a large coal-fired power plant currently under construction. Dr. Jacobs has provided testimony before the Georgia Public Service Commission, the Public Utility Commission of Texas, the North Carolina Utilities Commission, the South Carolina Public Service Commission, the Iowa State Utilities Board, the Louisiana Public Service Commission, the Florida Public Service Commission, the Indiana Regulatory Commission, the Wisconsin Public Service Commission, the Arizona Corporation Commission and the FERC.

A list of Dr. Jacobs' testimony is available upon request.

William R. Jacobs, Jr.
Vice President - Generation Support Services

1986-Present GDS Associates, Inc.

As Vice-President, Dr. Jacobs directs GDS' nuclear plant monitoring activities and has assisted clients in evaluation of management and technical issues related to power plant construction, operation and design. He has evaluated and testified on combustion turbine projects in certification hearings and has assisted the Georgia PSC in monitoring the construction of the combustion turbine projects. Dr. Jacobs has evaluated nuclear plant operations and provided testimony in the areas of nuclear plant operation, construction prudence and decommissioning in nine states. He has provided litigation support in complex law suits concerning the construction of nuclear power facilities.

1985-1986 Institute of Nuclear Power Operations (INPO)

Dr. Jacobs performed evaluations of operating nuclear power plants and nuclear power plant construction projects. He developed INPO Performance Objectives and Criteria for the INPO Outage Management Department. Dr. Jacobs performed Outage Management Evaluations at the following nuclear power plants:

- Connecticut Yankee - Connecticut Yankee Atomic Power Co.
- Callaway Unit I - Union Electric Co.
- Surry Unit I - Virginia Power Co.
- Ft. Calhoun - Omaha Public Power District
- Beaver Valley Unit 1 - Duquesne Light Co.

During these outage evaluations, he provided recommendations to senior utility management on techniques to improve outage performance and outage management effectiveness.

1979-1985 Westinghouse Electric Corporation

As site manager at Philippine Nuclear Power Plant Unit No. 1, a 655 MWe PWR located in Bataan, Philippines, Dr. Jacobs was responsible for all site activities during completion phase of the project. He had overall management responsibility for startup, site engineering, and plant completion departments. He managed workforce of approximately 50 expatriates and 1700 subcontractor personnel. Dr. Jacobs provided day-to-day direction of all site activities to ensure establishment of correct work priorities, prompt resolution of technical problems and on schedule plant completion.

Prior to being site manager, Dr. Jacobs was startup manager responsible for all startup activities including test procedure preparation, test performance and

William R. Jacobs, Jr.
Vice President - Generation Support Services

review and acceptance of test results. He established the system turnover program, resulting in a timely turnover of systems for startup testing.

As startup manager at the KRSKO Nuclear Power Plant, a 632 MWE PWR near Krsko, Yugoslavia, Dr. Jacobs' duties included development and review of startup test procedures, planning and coordination of all startup test activities, evaluation of test results and customer assistance with regulatory questions. He had overall responsibility for all startup testing from Hot Functional Testing through full power operation.

1973 - 1979 NUS Corporation

As Startup and Operations and Maintenance Advisor to Korea Electric Company during startup and commercial operation of Ko-Ri Unit 1, a 595 MWE PWR near Pusan, South Korea, Dr. Jacobs advised KECO on all phases of startup testing and plant operations and maintenance through the first year of commercial operation. He assisted in establishment of administrative procedures for plant operation.

As Shift Test Director at Crystal River Unit 3, an 825 MWE PWR, Dr. Jacobs directed and performed many systems and integrated plant tests during startup of Crystal River Unit 3. He acted as data analysis engineer and shift test director during core loading, low power physics testing and power escalation program.

As Startup engineer at Kewaunee Nuclear Power Plant and Beaver Valley, Unit 1, Dr. Jacobs developed and performed preoperational tests and surveillance test procedures.

1971 - 1973 Southern Nuclear Engineering, Inc.

Dr. Jacobs performed engineering studies including analysis of the emergency core cooling system for an early PWR, analysis of pressure drop through a redesigned reactor core support structure and developed a computer model to determine tritium build up throughout the operating life of a large PWR.

SIGNIFICANT CONSULTING ASSIGNMENTS:

Georgia Public Service Commission – Selected as the Independent Construction Monitor to assist the GPSC staff in monitoring all aspects of the design, licensing and construction of Plant Vogtle Units 3 and 4, two AP1000 nuclear power plants.

Georgia Public Service Commission – Assisted the Georgia Public Service Commission Staff and provided testimony related to the evaluation of Georgia Power Company's request for certification to construct two AP1000 nuclear power plants at the Plant Vogtle site.

GDS Associates, Inc., 1850 Parkway Place, Suite 800, Marietta, GA 30067

(770) 425-8100

(770) 426-0303 – Fax

Bill.Jacobs@gdsassociates.com

William R. Jacobs, Jr.
Vice President - Generation Support Services

GDS Associates, Inc.
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South Carolina Office of Regulatory Staff -- Assisted the South Carolina Office of Regulatory Staff in evaluation of South Carolina Electric and Gas' request for certification of two AP1000 nuclear power plants at the V.C. Summer site.

Florida Office of Public Counsel – Assists the Florida Office of Public Counsel in monitoring the development of four new nuclear power plants in Florida including providing testimony on the prudence of expenditures.

East Texas Electric Cooperative – Represents ETEC on the management committee of the Plum Point Unit 1 a 650 Mw coal-fired plant under construction in Osceola, Arkansas and represents ETEC on the management committee of the Harrison County Power Project, a 525 Mw combined cycle power plant located near Marshall, Texas.

Arizona Corporation Commission -- Evaluated operation of the Palo Verde Nuclear Generating Station during the year 2005. Included evaluation of 11 outages and providing written and oral testimony before the Arizona Corporation Commission.

Citizens Utility Board of Wisconsin -- Evaluated Spring 2005 outage at the Kewaunee Nuclear Power Plant and provided direct and surrebuttal testimony before the Wisconsin Public Service Commission.

Georgia Public Service Commission - Assisted the Georgia PSC staff in evaluation of Integrated Resource Plans presented by two investor owned utilities. Review included analysis of purchase power agreements, analysis of supply-side resource mix and review of a proposed green power program.

State of Hawaii, Department of Business, Economic Development and Tourism – Assisted the State of Hawaii in development and analysis of a Renewable Portfolio Standard to increase the amount of renewable energy resources developed to meet growing electricity demand. Presented the results of this work in testimony before the State of Hawaii, House of Representatives.

Georgia Public Service Commission - Assisted the Georgia PSC staff in providing oversight to the bid evaluation process concerning an electric utility's evaluation of responses to a Request for Proposals for supply-side resources. Projects evaluated include simple cycle combustion turbine projects, combined cycle combustion turbine projects and co-generation projects.

Millstone 3 Nuclear Plant Non-operating Owners – Evaluated the lengthy outage at Millstone 3 and provided analysis of outage schedule and cost on behalf of the non-operating owners of Millstone 3. Direct testimony provided an analysis of additional post-outage O&M costs that would result due to the outage. Rebuttal testimony dealt with analysis of the outage schedule.

H.C. Price Company – Evaluated project management of the Healy Clean Coal Project on behalf of the General Contractor, H.C. Price Company. The Healy Clean Coal Project is a 50 megawatt coal burning power plant funded in part by the DOE to demonstrate advanced clean coal

GDS Associates, Inc., 1850 Parkway Place, Suite 800, Marietta, GA 30067

(770) 425-8100

(770) 426-0303 – Fax

Bill.Jacobs@gdsassociates.com

William R. Jacobs, Jr.
Vice President - Generation Support Services

technologies. This project involved analysis of the project schedule and evaluation of the impact of the owner's project management performance on costs incurred by our client.

Steel Dynamics, Inc. - Evaluated a lengthy outage at the D.C. Cook nuclear plant and presented testimony to the Indiana Utility Regulatory Commission in a fuel factor adjustment case Docket No. 38702-FAC40-S1.

Florida Office of Public Counsel - Evaluated lengthy outage at Crystal River Unit 3 Nuclear Plant. Submitted expert testimony to the Florida Public Service Commission in Docket No. 970261-E1.

United States Trade and Development Agency - Assisted the government of the Republic of Mauritius in development of a Request for Proposal for a 30 MW power plant to be built on a Build, Own, Operate (BOO) basis and assisted in evaluation of Bids.

Louisiana Public Service Commission Staff - Evaluated management and operation of the River Bend Nuclear Plant. Submitted expert testimony before the LPSC in Docket No. U-19904.

U.S. Department of Justice - Provided expert testimony concerning the in-service date of the Harris Nuclear Plant on behalf of the Department of Justice U.S. District Court.

City of Houston - Conducted evaluation of a lengthy NRC required shutdown of the South Texas Project Nuclear Generating Station.

Georgia Public Service Commission Staff - Evaluated and provided testimony on Georgia Power Company's application for certification of the Intercession City Combustion Turbine Project - Docket No. 4895-U.

Seminole Electric Cooperative, Inc. - Evaluated and provided testimony on nuclear decommissioning and fossil plant dismantlement costs - FERC Docket Nos. ER93-465-000, et al.

Georgia Public Service Commission Staff - Evaluated and prepared testimony on application for certification of the Robins Combustion Turbine Project by Georgia Power Company - Docket No. 4311-U.

North Carolina Electric Membership Corporation - Conducted a detailed evaluation of Duke Power Company's plans and cost estimate for replacement of the Catawba Unit 1 Steam Generators.

Georgia Public Service Commission Staff - Evaluated and prepared testimony on application for certification of the McIntosh Combustion Turbine Project by Georgia Power Company and Savannah Electric Power Company - Docket No. 4133-U and 4136-U.

William R. Jacobs, Jr.
Vice President - Generation Support Services

New Jersey Rate Counsel - Review of Public Service Electric & Gas Company nuclear and fossil capital additions in PSE&G general rate case.

Corn Belt Electric Cooperative/Central Iowa Power Electric Cooperative - Directs an operational monitoring program of the Duane Arnold Energy Center (565 Mwe BWR) on behalf of the non-operating owners.

Cities of Calvert and Kosse - Evaluated and submitted testimony of outages of the River Bend Nuclear Station - PUCT Docket No. 10894.

Iowa Office of Consumer Advocate - Evaluated and submitted testimony on the estimated decommissioning costs for the Cooper Nuclear Station - IUB Docket No. RPU-92-2.

Georgia Public Service Commission/Hicks, Maloof & Campbell - Prepared testimony related to Vogtle and Hatch plant decommissioning costs in 1991 Georgia Power rate case - Docket No. 4007-U.

City of El Paso - Testified before the Public Utility Commission of Texas regarding Palo Verde Unit 3 construction prudence - Docket No. 9945.

City of Houston - Testified before Texas Public Utility Commission regarding South Texas Project nuclear plant outages - Docket No. 9850.

NUCOR Steel Company - Evaluated and submitted testimony on outages of Carolina Power and Light nuclear power facilities - SCPSC Docket No. 90-4-E.

Georgia Public Service Commission/Hicks, Maloof & Campbell - Assisted Georgia Public Service Commission staff and attorneys in many aspects of Georgia Power Company's 1989 rate case including nuclear operation and maintenance costs, nuclear performance incentive plan for Georgia and provided expert testimony on construction prudence of Vogtle Unit 2 and decommissioning costs of Vogtle and Hatch nuclear units - Docket No. 3840-U.

Swidler & Berlin/Niagara Mohawk - Provided technical litigation support to Swidler & Berlin in law suit concerning construction mismanagement of the Nine Mile 2 Nuclear Plant.

Long Island Lighting Company/Shea & Gould - Assisted in preparation of expert testimony on nuclear plant construction.

North Carolina Electric Membership Corporation - Prepared testimony concerning prudence of construction of Carolina Power & Light Company's Shearon Harris Station - NCUC Docket No. E-2, Sub537.

City of Austin, Texas - Prepared estimates of the final cost and schedule of the South Texas Project in support of litigation.

William R. Jacobs, Jr.
Vice President - Generation Support Services

Tex-La Electric Cooperative/Brazos Electric Cooperative - Participated in performance of a construction and operational monitoring program for minority owners of Comanche Peak Nuclear Station.

Tex-La Electric Cooperative/Brazos Electric Cooperative/Texas Municipal Power Authority (Attorneys - Burchette & Associates, Spiegel & McDiarmid, and Fulbright & Jaworski) - Assisted GDS personnel as consulting experts and litigation managers in all aspects of the lawsuit brought by Texas Utilities against the minority owners of Comanche Peak Nuclear Station.

GDS Associates, Inc., 1850 Parkway Place, Suite 800, Marietta, GA 30067

(770) 425-8100

(770) 426-0303 – Fax

Bill.Jacobs@gdsassociates.com

James P. McGaughy, Jr.
Executive Consultant

GDS Associates, Inc.

EDUCATION: M.S., Mechanical Engineering, Stanford University, 1969
U.S. Navy Nuclear Power Training Program, 1964-65
B.S., Electrical Engineering, MIT, 1964

ENGINEERING REGISTRATION: Registered Professional Engineer

Mr. McGaughy and five others founded GDS Associates, Inc. in 1986. Mr. McGaughy retired from GDS as an officer, board member and stockholder in May 2006. Since that time he has worked for GDS on various generation related consulting assignments on a part time basis.

EXPERIENCE:

While Mr. McGaughy was full time at GDS, he directed the power generation services function at GDS Associates, Inc. He has more than 40 years experience in the power generation field in the areas of licensing, design, construction, start-up, operation, and maintenance of nuclear and fossil-fired power plants. Mr. McGaughy has worked with top utility management to solve problems on a wide range of power generation issues. He has successfully managed extremely large and complex generation projects, both nuclear and fossil, which required the rigorous maintenance of project schedules and quality. He has performed studies concerning cogeneration projects involving unit dispatch and FERC operating and efficiency standards. Mr. McGaughy has provided testimony before the Texas Public Utility Commission, Public Utility Commission of Ohio, South Carolina Public Service Commission, Georgia Public Service Commission, Hawaii Public Utility Commission, New Jersey Board of Regulatory Commissioners, Michigan Public Utility Commission, Wisconsin Public Service Commission and FERC. He has performed work concerning over 30 nuclear units and 24 fossil-fired steam units as well as numerous combustion turbine and combined cycle units.

Specific Experience Includes:

2006-Present GDS Associates, Inc.

As an Executive Consultant, Mr. McGaughy has worked on various power plant related projects.

1986-2006 GDS Associates, Inc.

As Vice President and Secretary, Mr. McGaughy served as head of the Generation Services Department of GDS. GDS has provided construction and operations monitoring program at five nuclear units and six coal-fired units for minority owners. GDS has provided expert witness and litigation support in lawsuits involving six nuclear units. Mr. McGaughy also has been responsible for prudence, construction monitoring and litigation support efforts at numerous other nuclear units and for development of a nuclear performance standard program for the Georgia Public Service Commission. He has testified on combustion turbine construction

James P. McGaughy, Jr.
Executive Consultant

GDS Associates, Inc.

projects in certification proceedings and has testified on dispatch, reliability, avoided cost and other issues concerning cogeneration projects.

1984-1986 **Southern Engineering Company**

As Director of Generation Services, Mr. McGaughy conducted construction and operations monitoring for clients at power plants throughout the United States. In addition, Mr. McGaughy prepared testimony for various rate cases on generation matters at FERC and state commissions. He provided assistance to clients in all generation matters including contract administration and litigation support.

1980-1984 **Mississippi Power and Light Company**

Mr. McGaughy served as Vice President, Nuclear (1983-84) and Assistant Vice President, Nuclear Production (1980-82). He was responsible for all aspects of construction and operation of a multi-billion dollar power generation facility. In this capacity he hired and trained the nuclear power plant staff of over 500 people, including 29 licensed operators and numerous experienced utility managers. Mr. McGaughy also established a unique design engineering group which grew to over 125 people and had overall responsibility for interface with the Nuclear Regulatory Commission and all contractors on the project. During this tenure, cost and schedule performance was better than at any other similar plant (G.E. Boiling Water Reactor, BWR-6 design).

1973-1980 **Mississippi Power and Light Company**

Mr. McGaughy served as Director of Power Production (1978-80). In this capacity he was responsible for all power production related activities including construction, operation, engineering, maintenance, licensing, nuclear safety, staffing, and training. He prepared and administered annual personnel and operating budgets for 600 people and more than \$50 million, and an annual capital budget of \$280 million. He also established a formal screening program for hiring craft personnel, established a formal preventive maintenance program, and reorganized his department based on job performance. He served as project manager for 2-unit, 1,600 MW coal project.

Mississippi Power and Light Company

Mr. McGaughy served as Nuclear Project Manager (1976-78) and Assistant Project Manager (1973-75). He was responsible for forming and managing an organization to control the prime contractor on a \$4 billion construction project. He began the formation of plant staff organization. He was also responsible for relations with the Nuclear Regulatory Commission and the prime contractor (Bechtel). The construction permit was awarded in record time.

1971-1973 **Middle South Services, Inc.**

James P. McGaughy, Jr.
Executive Consultant

GDS Associates, Inc.

Mr. McGaughy served as a nuclear engineer on the holding company staff responsible for economic and engineering studies including the feasibility evaluation for Grand Gulf Nuclear Station. He performed nuclear fuel and uranium buying functions. He also performed generation-mix studies.

1969 - 1971 **Arkansas Power and Light Company**

Mr. McGaughy was responsible for nuclear fuel procurement and performed the licensing work including the preparation of the Safety Analysis Report for Arkansas Nuclear One, Unit 2.

1964-1968 U.S. Navy

Served as an engineering officer on nuclear propulsion power plants aboard navy submarines.

SIGNIFICANT CONSULTING ASSIGNMENTS:

Pacific Gas & Electric Company – Performed technical analyses of two different cogeneration plants to determine if projects had met FERC and state efficiency and operating standards.

Niagara Mohawk Power Corporation/Swidler & Berlin – Assisting in FERC proceeding to set new rates for disqualified former QF.

Niagara Mohawk Power Corporation/Swidler & Berlin – Prepared extensive technical analysis for filing in federal court and at FERC concerning efficiency and operating standards of cogeneration facility in support of motion to revoke QF certification

Attorney General, State of Michigan – Prepared analysis and testimony concerning power plant availability and system dispatch relating to the Midland cogeneration project in Consumers Power fuel plan case.

Attorney General, State of Michigan – Prepared analysis and testimony concerning purchased power costs relating to the Midland cogeneration project in Consumers Power fuel reconciliation case.

Attorney General, State of Michigan – Prepared analysis and testimony concerning avoided costs, PURPA rates, reserve margins, plant availability and dispatchability in MCV cogeneration facility settlement case.
U-10127.

Attorney General, State of Michigan – Analysis and testimony concerning Consumers' application of requirements of order in Case No. U-10127 relating to the Midland cogeneration project.

James P. McGaughy, Jr.
Executive Consultant

GDS Associates, Inc.

North Carolina Electric Membership Cooperative – Performed due diligence review of management for a 3-site, 1,200 MW, peaking project. Reviewed management site selection, fuel, equipment selection, environmental, contracting and other aspects.

VECO Alaska, Inc. – Served as construction project management expert witness for EPC contractor in lawsuit concerning construction overruns in a turnkey cogeneration project in Alaska. Served as witness in successful mediation.

H.C. Price Construction Company – Provided detailed analysis and mediation presentations concerning construction project management in case involving construction contractor and owner (State of Alaska) of a coal-fired plant in Alaska.

Rusk County, Texas Rural Electric Cooperative/Richard Balough – Testified before the Texas Public Utility Commission concerning coal-fired plant station electric service in territorial dispute with Texas Utilities.

Sam Rayburn G&T – Ongoing operational monitoring program concerning client's interest in Nelson 6 Coal Station operated by Gulf States Utilities.

Kamo Electric Cooperative – Operational monitoring program for client's minority interest in GRDA Unit 2 Coal Fired Station.

Northeast Texas Electric Cooperative – Ongoing construction monitoring and operational monitoring program concerning NTEC's interest in Pirkey Coal Station operated by Southwestern Electric Power Company and Dolet Hills Station operated by Central Louisiana Electric Company.

Sawnee and Coweta/Fayette Electric Membership Cooperatives – Served as Owner's project monitor on Sewell Creek Combustion Turbine Plant, Doyle Combustion Turbine Project, Chattahoochee Combined Cycle Project and Talbot County Combustion Turbine Project.

Northeast Texas Electric Cooperative -- Served as Owner's representative on Project Management Committee for design, construction and operation of 500Mw combined cycle plant.

U.S. Department of Justice – Served as expert witness in two tax cases involving investment tax credits for nuclear fuel.

Steel Dynamics, Inc. – Analysis of imprudence and replacement power costs at D.C. Cook Plant.

Corn Belt Power Cooperative – Performed review of available options for board of directors with recommendations for future plan of action.

James P. McGaughy, Jr.
Executive Consultant

GDS Associates, Inc.

East Texas Electric Cooperative – Assisted cooperative in negotiating steam and electric service contract with industrial customer.

Georgia Public Service Commission Staff – Testified before the Georgia Public Service Commission recommending that a nuclear performance standard be implemented in the State of Georgia. The Commission implemented the recommended standard.

City of El Paso – Testified before the Public Utility Commission of Texas regarding Palo Verde operations and maintenance expenses.

City of El Paso – Testified before the Public Utility Commission of Texas regarding valuation of Palo Verde power plant and other merger issues.

City of Homestead, Florida/Spiegel & McDiarmid – Assisted City in lawsuit regarding DeLaval Diesel-Generators. Prepared expert testimony and gave major deposition on subject before favorable settlement.

El Paso Community College/Law offices of Jim Boyle – Prepared testimony concerning level of Palo Verde Nuclear Station operation and maintenance costs requested by El Paso Electric. Analysis was performed on bases of comparative studies and on specific analysis of cost filed by El Paso Electric.

Old Dominion Electric Cooperative – Prepared testimony filed at FERC concerning prudent levels of coal inventory for inclusion Virginia Power working capital.

Long Island Lighting Company/Shea & Gould – Prepared expert testimony on nuclear plant construction.

Ohio Public Service Commission – Prepared testimony related to decommissioning costs of Toledo Edison's Davis-Besse Nuclear Station.

Georgia Public Service Commission/Hicks, Maloof & Campbell – Assisted Georgia Public Service Commission staff and attorneys in many aspects of Georgia Power Company's 1989 rate case including analysis of service company charges, construction prudence of Vogtle Unit 2, decommissioning costs of Vogtle and Hatch nuclear units, prepared expert testimony on operation and maintenance costs for Hatch and Vogtle nuclear units, prepared expert testimony on Performance Incentive Plan for Georgia Power nuclear units.

Georgia Public Service Commission/Hicks, Maloof & Campbell – Prepared testimony related to Vogtle and Hatch plant operations and maintenance costs in 1991 Georgia Power rate case.

James P. McGaughy, Jr.
Executive Consultant

GDS Associates, Inc.

Georgia Public Service Commission Staff – Prepared testimony concerning certification of McIntosh Units, Warner Robins Units, Intercession City Unit and Florida Power Corporation Power Purchase (three separate dockets)

City of Houston – Testified before Texas Public Utility Commission regarding South Texas Project operation and maintenance expenses.

Sam Rayburn G&T – Prepared testimony before Texas Public Utility Commission concerning certificate of convenience and necessity for co-op purchase of 38 mw interest in an existing coal-fired plant.

Aetna Insurance Company/Dickson, Carlson & Campillo – Assisted attorneys in analysis of Southern California Edison claims of property damage and replacement power costs. Prepared written analyses used in achieving favorable settlements for clients.

East Texas Electric Cooperative – Performed economic and technical feasibility analyses on hydro and thermal generation alternatives.

Allegheny Electric Power Cooperative – Assisted co-op in review of various financial and technical issues of Susquehanna Nuclear Station.

Saluda River Electric Cooperative – Assisted co-op in review of technical issues including decommissioning and minimum net dependable capability ratings for the co-op's minority interest in Catawba Nuclear Station operated by Duke Power Company.

City of Midland, Michigan – Assisted city in tax assessment case concerning Midland Nuclear Plant with Consumer's Power Company.

City of Wallingford, Connecticut – Reviewed decommissioning costs of Millstone Nuclear Units 1, 2, and 3 in CP&L rate case at FERC.

Nucor Steel/Ritts, Brickfield & Kaufman – Prepared testimony concerning prudence of construction of Carolina Power & Light Company's Sheron Harris Station.

City of Austin, Texas – Review of cost and schedule of South Texas Nuclear Plant.

Sam Rayburn Municipal Power Authority – Performed operational monitoring program relative to the client's minority interest in Nelson 6 Coal Station operated by Gulf States Utilities.

Tex-La Electric Cooperative/Brazos Electric Cooperative – Conducted construction and operational monitoring program for minority owners of Comanche Peak Nuclear Station.

James P. McGaughy, Jr.
Executive Consultant

GDS Associates, Inc.

Tex-La Electric Cooperative/Brazos Electric Cooperative/Texas Municipal Power Authority (Attorneys - Burchette & Associates, Spiegel & McDiarmid, and Fulbright & Jaworski) – Assisted attorneys as consulting experts and litigation managers in all aspects of the lawsuit brought by Texas Utilities against the minority owners of Comanche Peak Nuclear Station.

New Jersey Rate Counsel – Review of Public Service Electric & Gas Company nuclear and fossil O&M costs and capital additions in PSE&G general rate case.

E. Cary Cook
Senior Project Manager

GDS Associates, Inc.

EDUCATION: Georgia Southern University; BBA, Management, 1966-1970
Woodrow Wilson College of Law; JD, 1972-1975
Certified Public Accountant, 1987

PROFESSIONAL MEMBERSHIPS: American Institute of Certified Public Accountants
Georgia Society of Certified Public Accountants
Society of Depreciation Professionals

EXPERIENCE:

Mr. Cook has extensive experience in the electric utility industry. This experience includes preparation of cost of service studies and revenue requirements analysis; development of depreciation studies, audits of electric & gas affiliate transactions and wholesale formula rates, preparation of merger studies, cost of capital analysis and negotiation of wholesale and retail revenue requirements and rates.

Mr. Cook was employed by Ebasco Business Consulting Company from March 1978 through June 1982. While at Ebasco Mr. Cook served as Project Manager in the utility rates division where he provided cost of service, revenue requirements and FERC reporting services to investor-owned and municipal electric utilities. In June 1982 Mr. Cook joined Southern Engineering Company as a Project Manager where he continued to provide cost of service and revenue requirements assistance to rural electric cooperative and municipal electric utilities. In February 1986 Mr. Cook joined GDS Associates, Inc. where he has served as Senior Project Manager. He has provided cost of service, revenue requirements, depreciation analysis, mergers and acquisitions studies, FERC and state reporting and other ratemaking services to electric cooperative, municipal, industrial and governmental organizations. Mr. Cook has also provided electric rate negotiation services on behalf of electric utilities.

Mr. Cook has prepared testimony and has testified before several regulatory agencies. Mr. Cook has filed testimony regarding the preparation of utilities' cost of service, o & m expenses, depreciation, taxes other than income taxes, a & g expenses, other revenues, income taxes and rate base on behalf of various electric utility clients. Mr. Cook has testified before the Georgia Public Service Commission, the Texas Public Utilities Commission, the Alaska Regulatory Commission and the Federal Energy Regulatory Commission. Mr. Cook served as a symposium member in 2007, addressing the implementation of Fuel Adjustment Clauses (FAC).

Specific Project Experience Includes:

Prepared 1997 cost of service analyses regarding Cleveland Electric Illuminating Company on behalf of Cleveland Public Power.

Reviewed and prepared cost of service analyses regarding 1997 Southern Company open access transmission filing on behalf of Southeastern Federal Power Customers, Inc.

Reviewed and analyzed Florida Power & Light Company's 1997 depreciation filing on behalf of Seminole Electric Cooperative, Inc.

E. Cary Cook
Senior Project Manager

GDS Associates, Inc.

Prepared 1997 transmission rate cost of service analyses regarding South Carolina Electric & Gas Company on behalf of Southeastern Federal Power Customers, Inc.

Prepared 1997 cost of service analyses of Western Resources/KCPL merger filing on behalf of Kansas Electric Power Cooperative.

Prepared 1997 analyses of SEPCo's depreciation rate study on behalf of Georgia Public Service Commission.

Provided 1998 cost of service and rate assistance to Georgia Public Service Commission regarding Georgia Power Company retail rate filing.

Provided 1999 litigation support and analysis on behalf of Niagara Mohawk Power in counterclaim regarding Baesha Engineering Associates.

Provided 1999 cost of service and rate analysis assistance to Southeastern Federal Power Customers regarding SEPA/TVA proposed rate increases. Reviewed and provided recommendations regarding reasonableness of costs.

Prepared 2000 testimony regarding depreciation issue in Reliant HL&P filing on behalf of City of Houston and others. Provided 2001 testimony on behalf of City of Houston at retail rate proceeding.

Prepared 2000, 2001 and 2002 direct testimony regarding adjustments to Chugach cost of service and wholesale rates. Testified before the Regulatory Commission of Alaska regarding issues addressed in testimony. Dockets were ultimately settled resulting in reduced rates to client, Matanuska Electric Association.

Prepared 2000 testimony regarding recommended revenue requirements and wholesale cost of service of Pennsylvania Electric Company on behalf of Allegheny Electric Cooperative, Inc.

Reviewed 2005 electric utility affiliate transactions regulations and audited utility affiliate regulations of Sempra Energy Utilities, San Diego Gas & Electric Company and Southern California Gas Company. Prepared findings and recommendations to California Public Utility Commission resulting in revisions to affiliate transactions regulations.

Prepared 2005 direct and answering testimony on behalf of Golden Spread Electric Cooperative, and others regarding cost of service issues in FERC Docket No. EL05-19-002. Testified on behalf of client before the Federal Energy Regulatory Commission. Analyzed fuel adjustment clause components and reconciled proposed costs to allowable costs pursuant to FERC Code of Federal Regulations.

Prepared 2006 direct and closing testimony on behalf of Arkansas Electric Cooperative Corporation in FERC Docket No. ER05-719-000 and proposed adjustments to wholesale transmission rates. Docket was ultimately settled.

E. Cary Cook
Senior Project Manager

GDS Associates, Inc.

Reviewed and analyzed Southwestern Public Service Company 2006 projected test year wholesale cost of service on behalf of Golden Spread Electric Cooperative to determine rate issues.

Prepared depreciation and cash working capital testimony on behalf of the City of Houston in Center Point Energy, PUC Docket No. 32093. Docket resulted in settlement of proposed retail and wholesale rates.

Analyzed 2003 through 2009 Southern Company annual OATT transmission formula rate determinations and recommended adjustments to wholesale transmission rates.

Analyzed 2003 through 2009 Entergy Services, Inc. OATT annual transmission formula rate determinations and recommended adjustments to wholesale rate filing.

Analyzed 2003 through 2009 Entergy Arkansas annual transmission formula rate determinations and recommended adjustments to wholesale rate filing.

Assisted Florida Office of Public Counsel in 2008 and 2009 Biennial Filings regarding oversight of FPL and PEF nuclear plant construction costs associated with nuclear uprate units and proposed additional nuclear units. Assisted client in depositions and discovery.

Assisted Holy Cross Electric Association in analysis of PSCo Wholesale Rate Filings in 2008 and 2009. Prepared discovery and assisted in the identification of issues for ultimate settlement.

Progress Energy Shifts Levy Nuclear Project Schedule

Company Release - 05/01/2009 08:00

Company lowers 2010 nuclear cost-recovery projections

ST. PETERSBURG, Fla., May 1 /PRNewswire-FirstCall/ – Progress Energy Florida today announced plans to shift the construction schedule for its planned Levy County nuclear project. In addition, the company filed its 2010 nuclear cost-recovery estimates with the Florida Public Service Commission (PSC), as required. The company's proposal will decrease customer nuclear costs to about half of the amount the company is eligible to recover in 2010 under current law.

(Logo: <http://www.newscom.com/cgi-bin/pmh/20020923/CHM008LOGO-c>)

The company is adjusting the Levy County nuclear project schedule to reflect the Nuclear Regulatory Commission's (NRC) determination that the excavation and foundation preparation work - originally scheduled to be completed at the same time the company was seeking a combined operating license (COL) for the plant - will not be authorized until the NRC issues the COL. The company's shift in schedule will move the commercial operation dates for the two Levy units from the 2016-2018 time period by a minimum of 20 months. The COL grants a utility permission to build and operate a new nuclear power plant. The company expects to receive the COL in late 2011 or early 2012.

In today's nuclear cost-recovery filing, the company is seeking approval to spread certain costs over five years, lessening the yearly impact on the customer and providing some short-term customer price relief. If approved, the deferral would result in a nuclear charge of \$6.69 per month per 1,000 kilowatt-hours (kWh) for residential customers in 2010 instead of \$12.63 per 1,000 kWh, as allowed by the current law. These costs are for the planned plant in Levy County as well as improvements to increase the gross output at the existing Crystal River nuclear plant from 900 megawatts (MW) to 1,080 MW. The Crystal River plant update accounts for 30 cents of the requested amount. The PSC will hold hearings on the company's nuclear cost recovery in September and is expected to make a decision in mid-October.

"The Levy County nuclear project remains one of our company's top priorities, and we are committed to pursuing state-of-the-art new nuclear facilities in Florida, especially given the strong public policy support for nuclear energy at the state level," said Jeff Lyash, president and CEO of Progress Energy Florida. "Shifting this portion of the work until we have the combined operating license in hand enables us to spread some of the costs over a longer period. We believe this is in the best interest of our customers particularly during this continuing economic slowdown."

The company is continuing to pursue the Levy County project. A new project timeline depends on negotiations currently under way with the engineering, procurement and construction vendors.

"This shift in schedule provides time for the economy to recover, which should allow for financing in a more stable market. It also provides more time for national leaders to develop potentially transformational energy policies currently under debate in Washington," said Bill Johnson, president, chairman and CEO of Progress Energy. "To achieve the greatest reduction in carbon emissions at the least cost, advanced nuclear technology must be part of the solution. Having the license in hand and clearer federal climate change policy will ultimately decrease the risk to our customers and shareholders."

The Levy County nuclear project continues to be the best baseload generation option for Florida taking into account cost, potential carbon regulation, fossil fuel price volatility and the benefits of fuel diversification. A project of this magnitude and duration is a significant commitment and will be regularly assessed to ensure that it is in the best interests of customers and shareholders. Along with the company's annual prudence reviews with the PSC, Progress Energy will continue to evaluate the project in terms of public, regulatory and political support, including adequate cost-recovery mechanisms, and the availability and terms of financing for the capital necessary to build the plant.

It is too early for Progress Energy to provide a specific amount for an average customer's January 2010 bill or the cost for electricity per kilowatt-hour in 2010, as both will include other factors (base rate, fuel, energy conservation programs, government-mandated environmental projects, gross receipts taxes and local government fees and taxes) that are not determined yet, in addition to the nuclear project costs announced today. In October, the PSC is expected to make decisions on the company's 2010 base rates, which make up about one-third of a typical residential monthly bill. The company will file its projected fuel costs for 2010 in September. Fuel costs represent nearly half of a customer bill. Utilities earn no profit on fuel.

Progress Energy Florida, a subsidiary of Progress Energy (NYSE: PGN), provides electricity and related services to more than 1.6 million customers in Florida. The company is headquartered in St. Petersburg, Fla., and serves a territory encompassing more than 20,000 square miles including the cities of St. Petersburg and Clearwater, as well as the Central Florida area

surrounding Orlando. Progress Energy Florida is pursuing a balanced approach to meeting the future energy needs of the region. That balance includes increased energy-efficiency programs, investments in renewable energy technologies and a state-of-the-art electricity system. For more information about Progress Energy, visit progress-energy.com.

SOURCE Progress Energy

Contact: Progress Energy Florida 24-hour media line, +1-866-520-6397



Status of Power Uprate Applications

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Approved Applications for Power Uprates

The following power uprates have been reviewed and accepted by the NRC. The licenses for the following plants have been amended to reflect the increase in power level shown in the table.

(TYPE -- S = Stretch; E = Extended; MU = Measurement Uncertainty Recapture)

The following links on this page are to documents in our Agencywide Documents Access and Management System (ADAMS). ADAMS documents are provided in either Adobe Portable Document Format (PDF) or Tagged Image File Format (TIFF). To obtain free viewers for displaying these formats, see our Plugins, Viewers, and Other Tools. If you have problems with viewing or printing documents from ADAMS, please contact the Public Document Room staff.

NO.	PLANT	% UPRATE	MWt	DATE APPROVED	TYPE	ACCESSION #
1	Calvert Cliffs 1	5.5	140	09/09/77	S	ML010400337
2	Calvert Cliffs 2	5.5	140	10/19/77	S	ML003774265
3	Millstone 2	5	140	06/25/79	S	7907240100*
4	H. B. Robinson	4.5	100	06/29/79	S	7907180064*
5	Fort Calhoun	5.6	80	08/15/80	S	8008280223*
6	Crystal River 3	3.8	92	07/21/81	S	ML020600420
7	St. Lucie 1	5.5	140	11/23/81	S	ML013530273
8	St. Lucie 2	5.5	140	03/01/85	S	ML013600080
9	Duane Arnold	4.1	65	03/27/85	S	ML021890435
10	Salem 1	2	73	02/06/86	S	ML011660249
11	North Anna 1	4.2	118	08/25/86	S	ML013460131
12	North Anna 2	4.2	118	08/25/86	S	ML013460131
13	Callaway	4.5	154	03/30/88	S	ML021650524
14	TMI-1	1.3	33	07/26/88	S	ML003779786
15	Fermi 2	4	137	09/09/92	S	ML020720520
16	Vogtle 1	4.5	154	03/22/93	S	ML012330056
17	Vogtle 2	4.5	154	03/22/93	S	ML012330056
18	Wolf Creek	4.5	154	11/10/93	S	ML022030519
19	Susquehanna 2	4.5	148	04/11/94	S	ML010170334
20	Peach Bottom 2	5	165	10/18/94	S	ML011490143
21	Limerick 2	5	165	02/16/95	S	ML011560773
22	Susquehanna 1	4.5	148	02/22/95	S	9503070354*
23	Nine Mile Point 2	4.3	144	04/28/95	S	9505090259*
24	WNP-2	4.9	163	05/02/95	S	ML022120154
25	Peach Bottom 3	5	165	07/18/95	S	ML021580312
26	Surry 1	4.3	105	08/03/95	S	ML012710328
27	Surry 2	4.3	105	08/03/95	S	ML012710328
28	Hatch 1	5	122	08/31/95	S	ML013020073

29	Hatch 2	5	122	08/31/95	S	ML013020073
30	Limerick 1	5	165	01/24/96	S	ML011560244
31	V. C. Summer	4.5	125	04/12/96	S	ML012320013
32	Palo Verde 1	2	76	05/23/96	S	ML021710572
33	Palo Verde 2	2	76	05/23/96	S	ML021710572
34	Palo Verde 3	2	76	05/23/96	S	ML021710572
35	Turkey Point 3	4.5	100	09/26/96	S	ML013390234
36	Turkey Point 4	4.5	100	09/26/96	S	ML013390234
37	Brunswick 1	5	122	11/01/96	S	9611070136*
38	Brunswick 2	5	122	11/01/96	S	9611070136*
39	Fitzpatrick	4	100	12/06/96	S	9612180303*
40	Farley 1	5	138	04/29/98	S	ML012140259
41	Farley 2	5	138	04/29/98	S	ML012140259
42	Browns Ferry 2	5	164	09/08/98	S	ML042670047
43	Browns Ferry 3	5	164	09/08/98	S	ML042670047
44	Monticello	6.3	105	09/16/98	E	ML020920138
45	Hatch 1	8	205	10/22/98	E	ML013030084
46	Hatch 2	8	205	10/22/98	E	ML013030084
47	Comanche Peak 2	1	34	09/30/99	MU	ML021820306
48	LaSalle 1	5	166	05/09/00	S	ML003716743
49	LaSalle 2	5	166	05/09/00	S	ML003716743
50	Perry	5	178	06/01/00	S	ML003724441
51	River Bend	5	145	10/06/00	S	ML003762072
52	Diablo Canyon 1	2	73	10/26/00	S	ML003764792
53	Watts Bar	1.4	48	01/19/01	MU	ML010260074
54	Byron 1	5	170	05/04/01	S	ML033040016
55	Byron 2	5	170	05/04/01	S	ML033040016
56	Braidwood 1	5	170	05/04/01	S	ML033040016
57	Braidwood 2	5	170	05/04/01	S	ML033040016
58	Salem 1	1.4	48	05/25/01	MU	ML011520386
59	Salem 2	1.4	48	05/25/01	MU	ML011520386
60	San Onofre 2	1.4	48	07/06/01	MU	ML012180237
61	San Onofre 3	1.4	48	07/06/01	MU	ML012180237
62	Susquehanna 1	1.4	48	07/06/01	MU	ML011970199
63	Susquehanna 2	1.4	48	07/06/01	MU	ML011970199
64	Hope Creek	1.4	46	07/30/01	MU	ML012120005
65	Beaver Valley 1	1.4	37	09/24/01	MU	ML012690049
66	Beaver Valley 2	1.4	37	09/24/01	MU	ML012690049
67	Shearon Harris	4.5	138	10/12/01	S	ML012880381
68	Comanche Peak 1	1.4	47	10/12/01	MU	ML012890389
69	Comanche Peak 2	0.4	13	10/12/01	MU	ML012890389
70	Duane Arnold	15.3	248	11/06/01	E	ML013050389
71	Dresden 2	17	430	12/21/01	E	ML013620048
72	Dresden 3	17	430	12/21/01	E	ML013620048
73	Quad Cities 1	17.8	446	12/21/01	E	ML013620116
74	Quad Cities 2	17.8	446	12/21/01	E	ML013620116

	Waterford 3	1.5	51	03/29/02	MU	ML020940202
76	Clinton	20	579	04/05/02	E	ML021680108
77	South Texas 1	1.4	53	04/12/02	MU	ML021130083
78	South Texas 2	1.4	53	04/12/02	MU	ML021130083
79	ANO-2	7.5	211	04/24/02	E	ML021140674
80	Sequoyah 1	1.3	44	04/30/02	MU	ML021230531
81	Sequoyah 2	1.3	44	04/30/02	MU	ML021230531
82	Brunswick 1	15	365	05/31/02	E	ML021550485
83	Brunswick 2	15	365	05/31/02	E	ML021550485
84	Grand Gulf	1.7	65	10/10/02	MU	ML022890295
85	H. B. Robinson	1.7	39	11/05/02	MU	ML023110291
86	Peach Bottom 2	1.62	56	11/22/02	MU	ML031000317
87	Peach Bottom 3	1.62	56	11/22/02	MU	ML031000317
88	Indian Point 3	1.4	42.4	11/26/02	MU	ML023370080
89	Point Beach 1	1.4	21.5	11/29/02	MU	ML023370142
90	Point Beach 2	1.4	21.5	11/29/02	MU	ML023370142
91	Crystal River 3	0.9	24	12/04/02	S	ML023430072
92	D.C. Cook 1	1.66	54	12/20/02	MU	ML023570144
93	River Bend	1.7	52	01/31/03	MU	ML030350194
94	D.C. Cook 2	1.66	57	05/02/03	MU	ML030990132
95	Pilgrim	1.5	30	05/09/03	MU	ML031320794
96	Indian Point 2	1.4	43	05/22/03	MU	ML031500465
97	Kewaunee	1.4	23	07/08/03	MU	ML031910330
98	Hatch 1	1.5	41	09/23/03	MU	ML032691360
99	Hatch 2	1.5	41	09/23/03	MU	ML032691360
100	Palo Verde 2	2.9	114	09/29/03	S	ML032731029
101	Kewaunee	6	99	02/27/04	S	ML040611088
102	Palisades	1.4	35.4	06/23/04	MU	ML040970623
103	Indian Point 2	3.26	101.6	10/27/04	S	ML042960007
104	Seabrook	5.2	176	02/28/05	S	ML050590334
105	Indian Point 3	4.85	148.6	03/24/05	S	ML050870383
106	Waterford	8.0	275	04/15/05	E	ML051030082
107	Palo Verde 1	2.9	114	11/16/05	S	ML053130286
108	Palo Verde 3	2.9	114	11/16/05	S	ML053130286
109	Vermont Yankee	20	319	03/02/06	E	ML060050024
110	Seabrook	1.7	61	05/22/06	MU	ML061430044
111	Ginna	16.8	255	07/11/06	E	ML061380133
112	Beaver Valley 1	8	211	07/19/06	E	ML061720274
113	Beaver Valley 2	8	211	07/19/06	E	ML061720274
114	Browns Ferry 1	5	165	03/06/07	S	ML070680307
115	Crystal River 3	1.6	41	12/26/07	MU	ML073610197
116	Susquehanna 1	13	463	01/30/08	E	ML081050530
117	Susquehanna 2	13	463	01/30/08	E	ML081050530
118	Vogtle 1	1.7	60.6	02/27/08	MU	ML080350345
119	Vogtle 2	1.7	60.6	02/27/08	MU	ML080350345
120	Hope Creek	15	501	05/14/08	E	ML081230540

	Comanche Peak 1	4.5	154	06/27/08	S	ML081510157
122	Comanche Peak 2	4.5	154	06/27/08	S	ML081510157
123	Cooper	1.6	38	06/30/08	MU	ML081540278
124	Davis-Besse	1.6	45	06/30/08	MU	ML081420569
125	Millstone 3	7.0	239	08/12/08	S	ML082180137
126	Calvert Cliffs 1	1.4	37	07/22/09	MU	ML091820366
127	Calvert Cliffs 2	1.4	37	07/22/09	MU	ML091820366
128	North Anna 1	1.6	47	10/22/09	MU	ML092250616
129	North Anna 2	1.6	47	10/22/09	MU	ML092250616
	Total MWt		17179.2			
	Total MWe		5726			

*Documents can be requested from the Public Document Room

Capacity Recapture Power Uprates for Provisional Operating License Plants are not included in this table. These are Haddam Neck uprate of 24% in 1969, Oyster Creek uprate of 14% in 1971, Palisades uprate of 15% in 1977, Ginna uprate of 17% in 1984, Maine Yankee uprate of 10% in 1989, and Indian Point 2 Uprate of 11% in 1990.

NOTE: The NRC staff approved an MUR power uprate for Fort Calhoun on January 16, 2004, which authorized an increase in the licensed thermal power limit to 1,524 megawatts-thermal. The Omaha Public Power District was subsequently informed by Westinghouse that the potential instrument inaccuracies in the Advanced Measurement and Analysis Group (AMAG) ultrasonic flow meter would not allow implementation of the MUR power uprate at Fort Calhoun. As a result, on May 7, 2004, prior to implementation of the MUR power uprate, the Omaha Public Power District submitted an exigent license amendment request to return Fort Calhoun's licensed thermal power limit to 1,500 megawatts-thermal, the pre-MUR level. On May 14, 2004, the NRC staff approved this license amendment.

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Pending Applications for Power Uprates

The following power uprates are currently under review by the NRC. The licensees for the following plants have not been authorized by the NRC to operate the plants at power levels that reflect the following increases.

(TYPE -- S = Stretch; E = Extended; MUR= Measurement Uncertainty Recapture)
 (TBD = To Be Determined)

NO.	PLANT	% UPRATE	MWt	SUBMITTAL DATE	PROJECTED COMPLETION DATE	TYPE
1	Browns Ferry 2	14.3	494	06/25/2004	TBD	E
2	Browns Ferry 3	14.3	494	06/25/2004	TBD	E
3	Browns Ferry 1	14.3	494	06/28/2004	TBD	E
4	Monticello	12.9	229	11/05/2008	TBD	E
5	Point Beach 1	17	260	04/07/2009	November 2010	E
6	Point Beach 2	17	260	04/07/2009	November 2010	E
7	Nine Mile Pt. 2	15	521	05/27/2009	September 2010	E
8	Praire Island 1	1.6	27	12/28/2009	August 2010	MUR
9	Praire Island 2	1.6	27	12/28/2009	August 2010	MUR
10	Surry 1	1.6	41	01/27/2010	September 2010	MUR
11	Surry 2	1.6	41	01/27/2010	September 2010	MUR
12	LaSalle 1	1.6	57	01/27/2010	September 2010	MUR
13	LaSalle 2	1.6	57	01/27/2010	September 2010	MUR
14	Limerick 1	1.6	57	03/25/2010	TBD*	MUR
15	Limerick 2	1.6	57	03/25/2010	TBD*	MUR
16	St. Lucie 1	11.9	320	04/16/2010	TBD*	E
	Total MWt		3436			
	Total MWe		1145			

*undergoing NRC acceptance review