

**BRICKFIELD BURCHETTE
RITTS & STONE, PC**

WASHINGTON, D.C.
AUSTIN, TEXAS

July 14, 2009

VIA FEDERAL EXPRESS

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

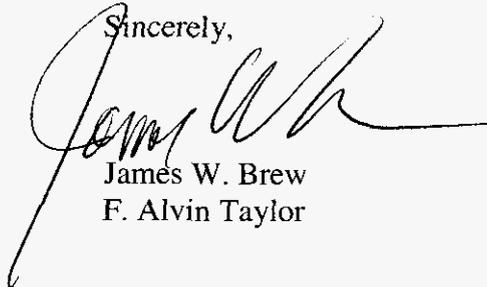
Re: Docket No. 090009-EI, Nuclear Cost Recovery Clause

Dear Ms. Cole:

Please find enclosed for filing on behalf of White Springs Agricultural Chemicals, Inc. d/b/a PCS Phosphate – White Springs the original and fifteen (15) copies of the *Testimony and Exhibits of Peter A. Bradford* in the above referenced docket.

Thank you for your assistance in this matter. Should you have any questions, please feel free to call me at (202) 342-0800.

Sincerely,



James W. Brew
F. Alvin Taylor

JWB:mm
Enclosures: a/s

cc: All Active Parties (via U.S. Mail)

COM 5
ECR 3
GCL 2
OPC _____
RCP _____
SSC _____
SGA _____
ADM _____
CLK 1

DOCUMENT NUMBER-DATE

07143 JUL 15 8

FPSC-COMMISSION CLERK

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true copy of the foregoing was served on July 14, 2009 by U.S. Mail to:

Progress Energy Service Company, LLC
John T. Burnett/R.Alexander Glenn
Post Office Box 14042
St. Petersburg, FL 33733-4042
Phone: 727-820-5184
FAX: 727-820-5219
Email: john.burnett@pgnmail.com

Progress Energy Florida, Inc.
Mr. Paul Lewis, Jr.
106 East College Avenue, Suite 800
Tallahassee, FL 32301-7740
Phone: (850) 222-8738
FAX: 222-9768
Email: paul.lewisjr@pgnmail.com

Southern Alliance for Clean Energy, Inc.
c/o Williams Law Firm
E. Leon Jacobs, Jr.
1720 S. Gadsden Street MS 14, Suite 20
Tallahassee, FL 32301
Phone: 850-222-1246
FAX: 599-9079
Email: Ljacobs50@comcast.net

Florida Power & Light Company
Bryan Anderson/Jessica Cano/Garson R.
700 Universe Blvd.
Juno Beach, FL 33418
Phone: 561-304-5253
FAX: 561-691-7135
Email: Bryan.Anderson@fpl.com

Florida Power & Light Company
Mr. Wade Litchfield
215 South Monroe Street, Suite 810
Tallahassee, FL 32301-1859
Phone: (850) 521-3900
FAX: 521-3939
Email: wade_litchfield@fpl.com

Carlton Fields Law Firm
Matthew R. Bernier
215 South Monroe St. Suite 500
Tampa, FL 32301-1866
Phone: 850-224-1585
FAX: 222-0398
Email: mwalls@carltonfields.com

Carlton Fields Law Firm
J. Michael Walls/Diane M. Tripplett
Post Office Box 3239
Tampa, FL 33601-3239
Phone: 813-223-7000
FAX: 813-229-4133
Email: mwalls@carltonfields.com

Office of Public Counsel
J.R. Kelly/C. Beck/C. Rehwinkel/J. McG
c/o The Florida Legislature
111 W. Madison Street, Room 812
Tallahassee, FL 32399-1400
Phone: 850-488-9330

White Springs Agricultural Chemicals, Inc.
Randy B. Miller
P.O. Box 300
White Springs, FL 32096
Email: RMiller@pcsphosphate.com

s/ Al Taylor
F. Alvin Taylor
BRICKFIELD, BURCHETTE, RITTS & STONE
Attorneys at Law
1025 Thomas Jefferson Street,
8th Floor – West Tower
Washington, DC 20007
202-342-0800/Fax: 202-342-0807
Al.Taylor@bbrslaw.com

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Nuclear Cost) Docket No. 090009-EI
Recovery Clause) Submitted for Filing: July 15, 2009

TESTIMONY
OF
PETER A. BRADFORD
ON BEHALF OF
PCS PHOSPHATE – WHITE SPRINGS

DOCUMENT NUMBER-DATE
07143 JUL 15 8
FPSC-COMMISSION CLERK

IN RE: NUCLEAR COST RECOVERY CLAUSE

**FLORIDA PUBLIC SERVICE COMMISSION
DOCKET NO. 090009-EI**

**DIRECT TESTIMONY OF
PETER A. BRADFORD**

1 **Q. PLEASE STATE YOUR NAME, ADDRESS AND CURRENT POSITION.**

2 A. My name is Peter A. Bradford. My business address is PO Box 497, Peru,
3 Vermont, 05152. I am an adjunct professor at Vermont Law School and
4 President of Bradford Brook Associates.

5 **Q. PLEASE STATE YOUR EXPERIENCE IN THE FIELD OF UTILITY
6 REGULATION.**

7 A. I was a utility regulatory commissioner almost continuously from 1971 until
8 1995. I chaired the Maine Public Utility Commission (1974-5 and 1982-87) and
9 the New York Public Service Commission (1987-95). During this time, I was
10 involved in many rate proceedings determining the prudence of utility
11 construction expenditures, including expenditures on nuclear power plant
12 construction. I was also a commissioner on the U.S. Nuclear Regulatory
13 Commission (1977-82) during which time the Commission issued more than
14 twenty nuclear power construction permits and operating licenses. I was
15 Maine's Public Advocate in early 1982. Since 1995, I have taught several
16 courses related to energy policy, utility regulation and nuclear power at Yale
17 and at Vermont Law School as well as in seminar programs at the Institute of
18 Public Utilities and elsewhere. I have also worked with the Regulatory

DOCUMENT NUMBER-DATE

07143 JUL 15 8

FPSC-COMMISSION CLERK

1 Assistance Project and have testified before numerous state utility regulatory
2 commissions.

3 I have consulted in several countries – including China, India, Russia and
4 Indonesia – on issues pertaining to utility regulation and to nuclear power.

5 I was a member of the National Association of Utility Regulatory
6 Commissioners (“NARUC”) from 1971 until 1995 and served as its president in
7 1987. I served on NARUC’s Electric, Gas and Communications Committees as
8 well as on the Subcommittees on Nuclear Waste and Nuclear Economics. I
9 was also the liaison between the Nuclear Regulatory Commission and NARUC
10 and have testified before the U.S. Congress at least 50 times on issues relating
11 to nuclear power.

12 My complete resume is attached as Exhibit PAB-1.

13 **Q. PLEASE DISCUSS YOUR EXPERIENCE WITH ECONOMIC REGULATION**
14 **OF NUCLEAR POWER PLANTS.**

15 A. My first experience with regulating rate impacts of nuclear power came when
16 the Maine Yankee nuclear power plant came on line in 1972. Like the
17 operating Florida plants, Maine Yankee was a relatively inexpensive unit, and
18 the impacts were not large. However, early good experiences turned out not to
19 guarantee that later ones would go as well.

20 In New York and Maine, I chaired commissions deciding cases involving rate
21 implications and prudence concerning the Seabrook plant in Maine, Millstone 3
22 in Connecticut, and the Shoreham and Nine Mile Point II plants in New York. I
23 chaired the New York and Maine commissions when those states disengaged

1 from the Shoreham and Seabrook plants in ways that resulted in adequate
2 power supplies, improved economic development and produced electric rate
3 impacts lower than would otherwise have occurred. We also decided several
4 proceedings allocating the costs of cancelled plants. I also reviewed proposals
5 to spread the cost of cleaning up the Three Mile Island accident across all
6 nuclear power plants.

7 More recently, I participated in the 2005 National Research Council of the
8 National Academy of Sciences panel that evaluated the alternatives to
9 continued operation of the Indian Point nuclear units in New York. I was also a
10 member of the 2007 Keystone Center Nuclear Power Joint Fact Finding project,
11 which identified points of agreement among a broad range of constituencies,
12 including nuclear power plant owners and builders, on issues relating to nuclear
13 power costs and the role of nuclear power in combating climate change. In
14 2008-2009, I was a member and co-chair of Vermont's statutory Public
15 Oversight Panel that oversaw preparation of a report on the reliability
16 implications of extending the operation of the Vermont Yankee nuclear power
17 plant for 20 more years beyond 2012.

18 In other countries, I have participated in evaluating the need for new nuclear
19 units as an option in Ukraine for the European Bank for Reconstruction and
20 Development, in evaluating new nuclear power and decommissioning costs in
21 Armenia and in evaluating the regulatory structure that would oversee the
22 operating of the Mochovce nuclear plant in Slovakia.

1 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?**

2 A. I am submitting this testimony on behalf of White Springs Agricultural
3 Chemicals, Inc. d/b/a PCS Phosphate- White Springs ("PCS Phosphate"). PCS
4 Phosphate is a manufacturer of fertilizer products with plants and operations
5 located within Progress Energy Florida's ("PEF" or "Progress") electric service
6 territory. PCS Phosphate receives service under various PEF rate schedules.
7 In the last 12 months, PCS Phosphate has paid tens of millions of dollars for
8 electric power purchased from PEF.

9 **Q. HAVE YOU PREVIOUSLY TESTIFIED IN FLORIDA REGARDING THE**
10 **PROPOSED LEVY NUCLEAR UNITS?**

11 A. Yes. I testified in 2008 in Docket No. 080148 (Progress Energy Florida's
12 petition for a Determination of Need for Levy Nuclear Power Units 1 and 2).

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

14 A. I will show that the feasibility of constructing the Levy units as described by
15 PEF in the certificate of need proceeding has since evaporated. The costs for
16 customers will be greater than thought. The economic feasibility of the project
17 may now be nonexistent. The company's filing in this case does not
18 adequately take the changed feasibility into account. Whether the Levy project
19 is to become a major burden on the economy in the PEF service area depends
20 on decisions the Commission will make in this proceeding. Only by insisting
21 that PEF demonstrate the economic feasibility and the reasonableness of
22 spending money on the Levy units and by establishing adequate customer

1 protections can the Commission ensure just and reasonable rates for Florida
2 customers, if these units are to be built at all.

3 This docket is the Commission's first opportunity to assess the prudence and
4 reasonableness of PEF expenditures relating to its nuclear construction
5 program under the nuclear cost recovery rule. It is also the Commission's first
6 chance to evaluate the on-going feasibility of the Levy nuclear units since the
7 issuance of the determination of need. The prudence and reasonableness of
8 several key PEF decisions and actions need to be examined in detail. The
9 magnitude of the changes in circumstances that have occurred in the past year
10 has a direct bearing on the on-going feasibility of the Levy units

11 **Q. PLEASE SUMMARIZE THE MAIN POINTS THAT YOU WILL MAKE IN**
12 **YOUR TESTIMONY.**

13 A. The rule governing the cost recovery for nuclear power plant construction
14 requires that Progress Energy establish the prudence of its past expenditures
15 and the reasonableness of those that it is proposing in future. The rule further
16 requires that PEF provide a "detailed analysis of the long term feasibility of
17 completing the power plant".

18 Given the magnitude of the changes in the last 12 months, Progress has not
19 performed a review adequate to comply with the Commission's rule. In fact, the
20 basic cost and schedule assessments necessary to a review of project
21 feasibility are not available and apparently have not yet been done.

22 Furthermore, Progress' filing in this proceeding does not provide an adequate
23 basis to "determine the reasonableness of projected preconstruction

1 expenditures” as required by the Nuclear or Integrated Gasification Combined
2 Cycle Power Plant Cost Recovery Rule, Rule 25-6.0423, F.A.C. The
3 Commission should decline to issue such a determination and should decline to
4 permit recovery of costs incurred in the absence of such a determination
5 because such expenditures made without such a determination would be
6 imprudent as well as unreasonable.

7 **Q. WOULD SUCH AN ACTION BY THE COMMISSION UNDERMINE**
8 **FLORIDA’S INTENTION TO PROMOTE ELECTRIC UTILITY INVESTMENT**
9 **IN ECONOMICALLY JUSTIFIED NUCLEAR POWER PLANTS?**

10 A. No. The Commission, by requiring periodic reviews of feasibility and
11 reasonableness of utility plans, has shown that it understands the clear
12 difference between promoting investment and granting a blank check. The very
13 strength of the incentives to new nuclear investment – rapid reviews, early cost
14 recovery, repeal of the used and useful requirement for cost recovery and
15 attenuated prudence reviews – underlines the need for the Commission to be
16 diligent in establishing the reasonableness of PEF’s potentially immense
17 construction expenditures in this, the one forum that exists to review them.

18 Two decades ago, when nuclear cost overruns led to customer revolt against
19 the resulting rate increases, the National Regulatory Research Institute
20 (“NRRI”), the research arm of the nation’s utility regulators, correctly noted that
21 “In applying the standard of reasonableness under the circumstances,
22 commissions, in some instances of high risk projects, have required a higher-
23 than-normal standard of care to compensate for the high risks associated with

1 project decisions.....the public has the right to demand the use of superior tools
2 and techniques to build nuclear generating facilities at the lowest reasonable
3 costs. When the risk of harm to the ratepayer is greater, the standard of care
4 expected from a reasonable person is higher” (NRRI, “The Prudent Investment
5 Test in the 1980s”, p. 59).

6 **Q. WHAT ARE THE ELEMENTS THAT SHOULD BE CONSIDERED IN**
7 **DETERMINING WHETHER PLANS FOR THE LEVY UNITS REMAIN**
8 **REASONABLE AND FEASIBLE?**

9 A. The Florida Commission is charged by Section 366.06 of the Florida statutes
10 with assuring that Florida electric rates are “fair, just and reasonable”. In terms
11 of Florida Commission jurisdiction, economic feasibility must therefore be the
12 overriding concern. The technical feasibility of the project is largely the
13 responsibility of Progress Energy and the federal Nuclear Regulatory
14 Commission (“NRC”). The Florida Commission has little technical jurisdiction
15 because of the preemptive features of the federal Atomic Energy Act.

16 Economic feasibility is not simply a matter of determining that enough money
17 can somehow be extracted from PEF customers to pay for the plant. The term
18 has to mean what it would for any comparable commercial undertaking, namely
19 that the product of the facility will not cost more than other ways of meeting the
20 same customer needs. If it does cost more than this, it will violate the
21 Commission’s duty to set reasonable rates and will therefore not be
22 economically feasible. Costing no more than other ways of meeting the same
23 customer needs is, of course, necessarily the standard for a new paper mill or

1 refinery or computer chip plant if it is to be commercially feasible. It is also the
2 standard that a new nuclear power plant must meet if it is being built in a state
3 (such as Texas or Maryland) where the output must be sold into a competitive
4 power generation market.

5 **Q. DO ACTIONS BY OTHER APPLICANTS FOR NRC LICENSES TO**
6 **CONSTRUCT AND OPERATE NUCLEAR POWER PLANTS PROVIDE A**
7 **BASIS BY WHICH TO ASSESS THE PRUDENCE, REASONABLENESS AND**
8 **FEASIBILITY OF THE LEVY UNITS?**

9 A. Yes. Nine of the seventeen entities with NRC applications docketed have,
10 according to a Moody's Investor Services report issued in June 2009,
11 maintained only a "low" level of activity in pursuit of their projects in the last 6-12
12 months. One of these is Progress Energy in North Carolina. Three others,
13 including PEF, have a "medium" level. Five others have a level of effort rated
14 "high". Two of the applicants rated as "low" by Moody's (Exelon and Ameren)
15 have in 2009 announced suspension or cancellation of their projects. None of
16 the applicants proceeding at a "low" or a "medium" rate other than PEF is
17 currently requiring its customers to pay for the plant.

18 **Q. DOES THE MOODY'S REPORT PROVIDE OTHER REASONS FOR**
19 **CONCERN AS TO REASONABLENESS AND FEASIBILITY?**

20 A. The Moody's Report states "We view new nuclear generation plans as a 'bet the
21 farm' endeavor for most companies, due to the size of the investment and length
22 of time needed to build a nuclear power facility. While we continue to view
23 operating nuclear units positively, we increasingly sense that none of the issuers

1 actively pursuing these endeavors have taken any material actions to strengthen
2 their balance sheets.

3 “In order to defend existing ratings, or to limit negative rating actions, we will
4 look for investor-owned utilities to:

- 5 ● create strategic partnerships, to share costs and risks;
- 6 ● increase reliance on equity as a component to financing plans;
- 7 ● moderate their dividend policies to retain cash flow; and
- 8 ● adopt a “back-to-basics” focus on core electric utility operations, posing less
9 distraction for management”

10 **Q. HOW ARE THE CONCERNS THAT YOU HAVE EXPRESSED CONNECTED**
11 **TO THE CHANGED CIRCUMSTANCES FACING THE LEVY PROJECT?**

12 Completing the Levy units on the terms proposed by Progress one year ago is
13 no longer feasible. A year ago, Progress hoped to be near the head of various
14 regulatory and vendor queues. The Company also insisted that substantial
15 overall project cost savings could be realized by constructing the two units on
16 schedule such that Levy Unit 2 would be completed in 2017, within 18 months
17 of Unit 1, even though this course would create substantial excess generating
18 capacity at that time.

19 These crucial assumptions are no longer valid. Today, Progress cannot state
20 how far the Levy project has fallen behind schedule, whether PEF can (or
21 should) maintain its queue position for critical long lead time items, whether
22 Unit 2 can be completed within 18 months of Unit 1 (or even if the second unit
23 can be justified at all), or what the cost consequences to customers would be if

1 the second unit is further deferred. Neither can Progress provide answers in
2 this docket to many other related questions.

3 At the same time, declining growth in customers and load have pushed both
4 units to the fringes or beyond PEF's ten year resource planning horizon, the
5 cost of natural gas-fired alternatives has significantly declined, and both
6 renewable energy and energy efficiency resources are more likely to expand
7 pursuant to federal law.

8 The fact that PEF has not provided, and apparently does not yet possess,
9 essential updated expected in-service dates and total project cost undermines
10 the justification for continuing the extraordinary measure of charging this project
11 to customers many years before it can possibly be of any use to them. PEF's
12 request for the Commission to approve \$446 million in nuclear spending for
13 cost recovery, approve the prudence of such amounts, and defer roughly \$300
14 million to be amortized over five years cannot be reconciled with either the
15 Commission's overarching obligation to require fair, just and reasonable rates
16 or the requirements of the nuclear cost recovery rule.

17 **Q. WHAT SHOULD THE COMMISSION DO TO ADDRESS THESE**
18 **CONCERNS?**

19 A. This project is showing symptoms of the same failure to respond to major
20 changing circumstances that caused Forbes magazine to proclaim nuclear
21 power "the largest managerial disaster in business history" in 1985.

22 I recommend the following measures:

- 1 1. The Commission should admonish PEF to the effect that its current filing
2 does not meet the standards of thoroughness expected of a utility
3 undertaking a project with multi-billion dollar impacts on Florida
4 customers.

- 5 2. The Commission should state that PEF's filings must establish the
6 economic reasonableness and feasibility of each Levy unit;

- 7 3. The Commission should suspend Levy Project nuclear cost recoveries in
8 2010 until PEF completes its assessment of project schedule options,
9 negotiates whatever changes the utility deems necessary to its EPC
10 agreement with Westinghouse/ SSW, files a detailed updated feasibility
11 assessment, based on a current cost estimate as well as a realistic
12 estimate of future natural gas prices, demonstrating the continuing cost-
13 effectiveness of each Levy unit compared to alternative supply and
14 demand resources (subject to further hearings), and receives findings of
15 on-going feasibility and reasonableness from the Commission.

- 16 4. The Commission should schedule a separate prudence proceeding on
17 costs related to the issues identified at pages 15-16 as well as the
18 prudence of downsizing the planned 1,200 MWs of new combined cycle
19 capacity at Suwannee to some 380 MWs of peaking turbines. Recovery
20 of actual Levy costs in the nuclear capacity recovery clause for 2010
21 should be limited to costs actually incurred in 2008 and should be
22 subject to final determination in the prudence docket.

1 5. The Commission should indicate that failure of PEF to live up to the
2 standards to be expected of an entity undertaking construction of
3 projects of this magnitude will result in appointment of a special master
4 empowered to take all necessary measures to assure PEF customers of
5 the prudence and reasonableness of PEF decision-making with regard
6 to each Levy unit.

7 **Q. WHICH “EVENTS SINCE THE CONCLUSION OF THE LAST PROCEEDING”**
8 **HAVE CALLED THE CONTINUING FEASIBILITY AND REASONABLENESS**
9 **OF THE LEVY UNITS INTO QUESTION?**

10 A. Five events are particularly important.

11 First, Progress Energy has announced a delay of at least 20 months in the
12 construction schedule, which will require revised cost estimates. At this point,
13 the magnitude of the delay, the respective schedules of Units 1 and 2, and
14 project cost impacts have not been determined, and, PEF maintains, will be
15 determined in part by necessary renegotiation of the EPC contract executed at
16 the end of 2008. Even a two year delay, which seems the minimum likely under
17 the circumstances that PEF has described, pushes Unit 2 beyond PEF's ten
18 year planning horizon. Further delays, which are likely, will take Unit 1 beyond
19 the normal planning horizon as well. Similarly, the project delays also postpone
20 and extend the time necessary for Florida ratepayers to realize any net savings
21 even according to PEF cost-benefit calculations.

22 Second, the sharp drop in demand for electricity that has accompanied the
23 national recession has postponed PEF's need for baseload generating capacity

1 by several years. Considered in tandem with the Levy project delay, the
2 reasonableness of completing either unit at all is in question.

3 Third, the dramatic fall in natural gas prices and the accompanying rise in gas
4 supply projections have increased the rate impacts to consumers of proceeding
5 with the Levy Units relative to other supply alternatives. In this regard, PEF's
6 decision, announced in its most recent Ten Year Site Plan, to downsize its
7 planned 1,200 MWs of new combined cycle capacity at Suwannee to roughly
8 380 MWs of peaking turbines seems particularly perplexing.

9 Fourth, the availability and cost of capital on the scale required to build the
10 plants is less foreseeable in light of the turmoil in U.S. and world capital
11 markets.

12 Finally, changes affecting Nuclear Regulatory Commission licensing of the AP-
13 1000 nuclear power plant design have introduced greater uncertainty into the
14 licensing schedule for the Levy units.

15 **Q. HAVE ANY EVENTS FAVORABLE TO THE FEASIBILITY OF THE LEVY**
16 **UNITS OCCURRED SINCE THE NEED PROCEEDING?**

17 A. Yes. Some decline in the cost of materials such as steel and concrete will have
18 occurred. This reverses a trend that had driven the cost estimates for new
19 nuclear plants up so rapidly in the years before 2008.

1 **Q. HAVE OTHER EVENTS OCCURRED WITH IMPLICATIONS FOR THE**
2 **FEASIBILITY OF COMPLETING THE LEVY UNITS ON REASONABLE**
3 **TERMS?**

4 A. Yes. The progress of climate change legislation through the U.S. Congress is
5 important. This legislation recently passed the U.S. House of Representatives
6 in a form containing requirements to increase energy efficiency and renewable
7 energy production that were not reflected in the Progress petition for a
8 certificate of need. It also contained measures to mitigate the rate impact of
9 utility carbon cap and trade compliance actions. This legislation may also result
10 in a charge for green house gas emissions that will favor nuclear power relative
11 to fossil fuels, though not in relation to other low carbon sources. But, as the
12 legislation now stands, the efficiency and renewable requirements are relatively
13 clear. The carbon price impact for nuclear is quite uncertain.

14 **Q. DO ANY OF THESE EVENTS HAVE PARTICULAR SIGNIFICANCE FOR**
15 **THE CONSTRUCTION OF UNIT 2?**

16 A. Yes. In its Need filing in Docket No. 080148 and its 2008 Ten Year Site Plan,
17 Progress showed a capacity reserve margin of 33% in 2017 once Unit 2 is in
18 service. PEF's justification of that expensive excess capacity has been that
19 Unit 2 needed to be completed within 12 to 18 months of Unit 1 in order to
20 realize significant capital cost savings that helped keep the original total project
21 cost estimate below \$20 billion. With the dramatic decline in demand and the
22 project delay, completing Unit 2 within 18 months of Unit 1 may no longer be
23 reasonable or economically feasible. In that case, not only will the substantial

1 savings associated with Unit 2 not be realized, but the composite costs of the
2 two units together will rise significantly, conceivably undermining the feasibility
3 of Unit 1 as well. If both units are deferred far enough into the future, the
4 reasonableness of charging today's customers any part of their costs will be
5 open to question. Clearly, the Commission needs a detailed Levy project
6 update to be able to assess these matters. Imposition of project costs on
7 customers should be kept to a minimum until that can be accomplished.

8 **Q. PLEASE DISCUSS THE SPECIFICS AND THE IMPORTANCE OF THE LEVY**
9 **PROJECT DELAY IN MORE DETAIL.**

10 A. The project delay undermines PEF's objective of controlling project costs by
11 being an "early mover." PEF needs to demonstrate both that it can maintain its
12 place in long lead time equipment queues as a result of these delays, and that
13 it is reasonable to do so even if it is contractually possible. The actual extent of
14 the project delay, at this juncture, has not been determined (or at least
15 disclosed) by Progress. This raises project feasibility questions that cannot be
16 answered on this record. The reasonableness of building the second Levy unit
17 slips from tenuous toward non-existent given the delay and the absence of joint
18 owners to support the project. Captive customers should not be expected to
19 fund in current rates a project that may be 12 years or more from entering
20 commercial service, especially in today's difficult economy.

21 Finally, there are several Progress decisions and actions that led to the
22 schedule delay that require a detailed prudence evaluation before cost recovery

1 is authorized by the Commission. At a minimum, the Commission should
2 investigate the following:

- 3 1. Did Progress reasonably manage its request for the Limited Work
4 Authorization ("LWA") upon which the project schedule (and therefore
5 economics) vitally depended?
- 6 2. Was it reasonable and prudent for PEF to execute its EPC contract with
7 Westinghouse/ Shaw Stone & Webster at the end of 2008 in light of the
8 NRC's expressed concerns and the importance of receiving an LWA to
9 maintain project schedule?
- 10 3. Was it reasonable and prudent for Progress to file its request for a Need
11 determination and COLA in advance of securing joint ownership for the
12 excess capacity associated with two 1,100 MWs generating units at Levy?

13 In the present proceeding, the Commission need only determine the prudence
14 of the actual construction costs incurred in 2008. As a result, the Commission
15 does not need to determine costs associated with Progress' decision to enter
16 into the EPC agreement prior to the receipt of the LWA, as the contract was not
17 executed until the end of 2008. For this issue, the Commission should conduct
18 a detailed examination of the EPC execution in view of the known and
19 reasonably expected ramifications of an unfavorable NRC reaction to the LWA
20 request.

21 PEF's expectation that it would secure one or more joint owners for the Levy
22 County units, and its failure to do so to this point, have become critical issues
23 relating to this project. With the project delays and inevitable cost increases that

1 will result, the Levy project not only will create more generating capacity than
2 PEF requires, but it will impose a major cost burden on its captive customers
3 and their economy. This burden may prove particularly unfair if some part of
4 the capacity for which the customers are paying is to be sold to someone else,
5 who will not have paid their share of the construction cost.

6 Progress already deferred \$198 million of 2009 nuclear cost recovery to
7 mitigate near term rate impacts, and has proposed in this docket a five year
8 amortization of roughly \$300 million of the costs it claims are eligible for
9 recovery in 2010. Of course, the deferrals eventually have to be paid, with
10 interest, while new nuclear recovery charges are added each year. The
11 Commission needs to reserve judgment as to the prudence of PEF's actions
12 regarding joint ownership of the project.

13 **Q. PLEASE DISCUSS THE SPECIFICS AND THE IMPORTANCE OF THE**
14 **DECLINE IN DEMAND IN MORE DETAIL.**

15 A. The national recession has dramatically affected the demand for electricity.
16 *Florida businesses and consumers certainly are using less electricity as a*
17 *result. Progress now expects substantially slower long term growth in load. As*
18 *shown in its 2009 Ten Year site Plan:*

- 19 • PEF has reduced its long term customer growth assumption to 1.5 %
20 from 2.0%.
- 21 • PEF has reduced its forecasted growth in net Energy for Load to 1.5%
22 from 2.2%.
- 23 • PEF has reduced its forecasted growth in summer peak demand to
24 1.4% from 1.9%.

1 With these revised forecasts Progress is unlikely to need 2,200 MWs of new
2 baseload nuclear capacity in its normal resource planning horizon.

3 Furthermore, there is no certainty that the recession has hit bottom or that,
4 once it does, electricity demand will grow at nearly the rates that PEF now
5 projects. While PEF in the Need proceeding drew repeated assurance from the
6 fact that “no party has challenged” the forecasts which it put forward, it must
7 now contend with the fact that reality has challenged them more devastatingly
8 than any party could have.

9 **Q. PLEASE DISCUSS THE SPECIFICS AND THE IMPORTANCE OF THE**
10 **DECLINE IN NATURAL GAS PRICES IN MORE DETAIL.**

11 A. The NYMEX price for natural gas today is roughly one-third the level seen
12 during the Levy Need determination hearings last year. Scarcely a year from
13 the date that PEF assured this Commission that “the likelihood of the low fuel
14 price forecast occurring at all in the future is improbable” (PEF post-hearing
15 brief in Docket No. 080148-EI, p, 25), the low fuel price forecast in fact now
16 seems too high. Gas can now be purchased at prices that are close to, or
17 below, the PEF low fuel price forecast for years into the future. Moreover, long
18 term estimates of gas supply and price are being adjusted as well. The March
19 2009 Long Term Energy Outlook released by the Energy Information
20 Administration shows a substantial decline in projected natural gas prices
21 through 2030 in all five scenarios studied. See Exhibit PAB-2.

22 Astonishingly, PEF’s updated fuel price forecast in this docket (Exhibit GM-1)
23 fails to take into account this major shift in price and perhaps supply. The

1 Commission should require Progress to provide a current update to its fuel
2 price forecasts with its updated feasibility analysis.

3 **Q. PLEASE DISCUSS THE SPECIFICS AND THE IMPORTANCE OF THE**
4 **CHANGE IN CAPITAL MARKETS IN MORE DETAIL.**

5 A. As to new nuclear reactors, Moody's recent report observed that

6 recent broad market turmoil calls into question whether new liquidity is
7 even available to support such capital-intensive projects...Moody's is
8 considering applying a more negative view for issuers that are actively
9 pursuing new nuclear generation. History gives us reason to be concerned
10 about possible significant balance-sheet challenges, the lack of tangible
11 efforts today to defend the existing ratings, and the substantial execution
12 risk involved in building new nuclear power facilities.

13 Lower debt ratings mean higher costs of capital, all other things being equal.

14 Higher capital costs were a major cause of nuclear delays and cost overruns in
15 the past and could easily be again, especially when combined with falling costs
16 of alternatives.

17 **Q. PLEASE DISCUSS THE SPECIFICS AND THE IMPORTANCE OF THE**
18 **UNCERTAINTIES IN THE NRC LICENSING PROCESS IN MORE DETAIL.**

19 A. Correspondence between the NRC and Westinghouse in April 2009 indicates
20 that the schedule for completion of the review of the pending design
21 amendment for the AP-1000 has slipped to August 2011. See Exhibit PAB-3.
22 This means that the design that PEF intends to reference will not be finally
23 approved much in advance of the date that PEF hopes to receive its license for
24 the Levy units. Clearly the potential for delay is much larger than PEF
25 acknowledged when it assured the Florida Commission in the need proceeding

1 that it was using "a standard design that the NRC has already approved"
2 (Roderick prefiled testimony in Docket No. 080148-EI, page 16, line 6).

3 A further indication of uncertainty in the rollout of the AP-1000 design has been
4 the decision to shift the reference plant designation from Bellefonte to Vogtle.
5 While this decision may be sensible in itself, it suggests that the AP-1000
6 consortium's best laid plans remain subject to much more substantial changes
7 than PEF anticipated in its testimony just a year ago.

8 Progress has relied heavily on the NRC's meeting of its announced schedules
9 despite the facts a) that the revised licensing process is untested and b) that
10 the industry has presented the NRC with a consistently changing profile rather
11 than the firm commitment to certified designs on which those schedules have
12 been based. Reasonableness criteria require that a considerable degree of
13 uncertainty be attached to these schedules and reflected in decisions to make
14 commitments having large implications for customer rates. The fact that Florida
15 law largely assures that customers will pay for the consequences of these
16 decisions heightens rather than diminishes the degree of prudence that
17 Progress owes to its customers.

18 **Q. PLEASE SET FORTH ANY ASPECTS OF YOUR PRIOR TESTIMONY THAT**
19 **ARE RELEVANT TO THIS PROCEEDING.**

20 A. In my testimony a year ago, I expressed concern that Progress was
21 underestimating well known nuclear construction risks that it was seeking to
22 shift onto its customers. Events have borne this out. Significant delays in the
23 Levy project have occurred at the outset that will have material cost

1 consequences. The "streamlined" NRC licensing process also is not going as
2 planned. The NRC has run into difficulties as the standard designs – as yet
3 unbuilt in the U.S. - have fallen behind the individual license applications for
4 projects that will use those designs, so much so that Chairman Jaczko has
5 indicated that the industry as a whole would benefit if the NRC slowed down
6 some individual applications to focus on completing the generic design reviews.
7 Any problems in coordinating completion of these reviews could affect the Levy
8 project timetable.

9 My previous testimony noted the risks in relying on an "Economic Benefits
10 Assessments" that treated construction costs and schedules as if they were
11 etched in stone in comparing them to speculative projections of natural gas and
12 CO2 compliance costs in the years 2040 and beyond. Of course, the
13 construction schedule has indeed slipped, while natural gas costs have fallen
14 dramatically. Yet Progress has reduced its future gas generation while insisting
15 on continuing to expose its customers to nuclear costs that it cannot now
16 estimate. Adherence to a pre-determined path in the face of changed
17 circumstances was a hallmark of troubled nuclear projects in the past, and
18 remains a red flag today.

19 I also cautioned that the year-by-year prudence reviews set in motion by the
20 certificate of need would largely insulate Progress from the large consequences
21 of any imprudent decisions, because the consequences would reveal
22 themselves years after the decisions had been made. PEF's decisions
23 regarding the LWA, the decision to sign an EPC last December, and the

1 circumstances regarding PEF's pursuit of joint owners are concrete examples
2 of this. No prudence review of those decisions has been conducted. Such
3 reviews are needed before final cost recovery is permitted. However, even if
4 imprudence were found, the dollar consequences are likely play out over many
5 years, years during which they may not be subject to commission review at all
6 unless protections are put in place now.

7 In the need docket, I concluded that "To protect customers, and restore some
8 of Progress' incentive to control project cost and schedule, the Commission
9 should establish reasoned limits or conditions on its finding of need for the Levy
10 units". That remains my view as to Commission findings of the reasonableness
11 of PEF's future plans. The NRRI publication that I cited above notes that such
12 limits were established not only in New York, as I testified in 2008, but twice in
13 Connecticut and in New Jersey (pp. 76-78). They were also part of a
14 settlement at Diablo Canyon in California. Both the customers and the utility
15 require a clear statement as to the highest acceptable price for the power from
16 the Levy units.

17 Finally, I indicated that new nuclear power was not necessarily an essential part
18 of a least cost strategy to combat climate change. The changes discussed
19 above tend to confirm this point. They increase the likelihood that measures
20 such as efficiency, renewables and grid enhancement will be able to shoulder
21 the burden in the electric sector for years to come, especially given the lower
22 cost projections for natural gas as a swing fuel. However, the more committed

1 Progress becomes to both Levy units, the less willing it becomes to consider
2 competing solutions.

3 **Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AS TO MEASURES THAT**
4 **FLORIDA REGULATORS SHOULD ADOPT IN THIS PROCEEDING.**

5 A. My conclusions are as follows:

- 6 ● The Commission should confine the scope of any prudence determination to
7 costs actually incurred in 2008.
- 8 ● The Commission should conduct separate prudence hearings on the LWA
9 and EPC contract issues discussed above.
- 10 ● The Commission should reserve a prudence determination on PEF's pursuit
11 of joint owners for the Levy project for an appropriate time and make all cost
12 recoveries subject to the outcome of that review.
- 13 ● The Commission should limit or suspend all future Levy project cost recovery
14 pending receipt and public review of a detailed updated project
15 reasonableness and feasibility analyses that contain updated total project
16 cost and schedule evaluations and a thorough cost-effectiveness
17 demonstration.
- 18 ● The Commission should admonish PEF to the effect that its current filing does
19 not meet the standards of thoroughness expected of a utility undertaking a
20 project with multibillion dollar impacts on Florida customers.
- 21 ● The Commission should state that PEF's filings must establish the economic
22 reasonableness and feasibility of each Levy unit.

- 1 • The Commission should indicate that failure of PEF to live up to the standards
2 to be expected of an entity undertaking construction of projects of this
3 magnitude will result in appointment of a special master empowered to take
4 all necessary measures to assure PEF customers of the prudence and
5 reasonableness of PEF decision-making with regard to each Levy unit.
- 6 • Finally, to reassert a point that I made a year ago, the Florida Commission
7 faces a crucial need to avoid commitments to costs that are open-ended and
8 unlimited. Investors have proven unwilling to shoulder such exposure.
9 Regulators should be clear as to the limits on the amounts that can be
10 charged to the customers, and those limits should not exceed the costs of the
11 next best alternatives. By setting and enforcing such limits, the Commission
12 will be benefiting both customers and utility investors as well as the Florida
13 economy.

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

15 A. Yes.

EXHIBIT 1

PETER A. BRADFORD
P.O. BOX 497
PERU, VERMONT 05152
(802) 824-4296

PROFESSIONAL EXPERIENCE:

March 1998 – present – Adjunct Professor, Vermont Law School

Teaching course on “Nuclear Power and Public Policy” and other classes; participating in VLS Energy Law Center programs

March 1996- present - consultant on energy and utility regulatory policy

Advising and teaching utility regulation, restructuring, nuclear power and energy policy in the U.S. and abroad. Has been a visiting lecturer in energy policy and environmental protection at Yale University. Served as a member and co-chair on Vermont’s 2008-9 Public Oversight Panel on the Comprehensive Reliability Audit of the Vermont Yankee nuclear power plant; Served on a 2007 Keystone Center fact finding collaboration on nuclear power and a 2006 National Academy of Sciences panel evaluating the alternatives to continued operation of the Indian Point nuclear power plants in New York. Also affiliated with the Regulatory Assistance Project, which provides assistance to state and federal energy regulatory commissions regarding economic regulatory policy and environmental protection.

Has advised on restructuring issues and has testified on aspects of electricity and telecommunications restructuring in many U.S. states. As to nuclear power, he advised the Internal Revenue Service in a successful proceeding related to taxation of Maine Yankee fuel expenditures, testified on behalf of Wiscasset, Maine in a 2004-05 property tax proceeding on the value of spent fuel storage and advised the Vermont Legislature on issues pertaining to the taxation of Maine Yankee. He testified before the U.S. Congress on the renewal of the Price-Anderson Act.

International - Taught and/or advised abroad on energy (including nuclear power) and water issues and electric restructuring in China, Armenia, Russia, India, Indonesia, Mongolia, Canada, St. Lucia, Kosovo, South Africa, Georgia, Trinidad and Tobago and Samoa. Member, Policy Advisory Committee of the Packard Foundation's China Sustainable Energy Project. Served as one of two U.S. representatives on international panel advising European Bank for Reconstruction & Development on least cost alternatives in Ukraine to continued operation of the Chernobyl Nuclear Station (1996-97) and on an international expert panel assessing the safety of the Mochovce Nuclear Power Station in Slovakia (1998);

DOCUMENT NUMBER-DATE

07143 JUL 15 08

FPSC-COMMISSION CLERK

February 1995 - March 1996 Fellow, **Regulatory Assistance Project**

Project funded by the U.S. Dept. of Energy, the Environmental Protection Agency and foundations to provide assistance to state and federal regulatory commissions on energy and environmental matters.

June 1987- January 1995 Chairman, **New York State Public Service Commission**, Albany, New York

CEO of state agency charged with overseeing \$29 billion annual revenues of New York utilities. Responsible for developing and implementing consumer and environmental protection policies, transitions from monopoly to competition in energy and telecommunications industries. 700 employees, \$65 million budget.

July 1982- June 1987 Chairman, **Maine Public Utilities Commission**, Augusta, Maine

CEO of state agency charged with overseeing \$2 billion annual revenues of Maine utilities. Responsible for developing and implementing consumer and environmental protection policies, including competitive bidding for independent power production and energy conservation services as well as adjusting to the break-up of AT&T. 60 employees, \$4 million budget.

March 1982-June 1982 **State of Maine Public Advocate**

First full-time Maine public advocate; intervened on consumers' behalf in telephone and electric cases; oversaw staff of 6; prepared briefs; cross-examined witnesses.

Aug. 1977-March 1982 Commissioner, **United States Nuclear Regulatory Commission**, Washington, D.C.

One of five commissioners of the federal agency whose responsibilities include safety of nuclear power plants and other nuclear facilities; preparing licensing criteria for a nuclear waste repository; licensing exports of nuclear fuel and reactors pursuant to Nuclear Nonproliferation Act; assisted in major upgrades of regulatory and enforcement processes in wake of Three Mile Island accident. 3000 employees, \$250 million budget.

Dec. 1971-Aug. 1977 Commissioner, **Maine Public Utilities Commission, Chairman** (9/74-7/75).

Sept. 1968- Dec. 1971 **Federal-State Coordinator**, State of Maine

Responsible for many oil, power, environmental and housing matters. Assisted in preparation of landmark Maine laws relating to oil pollution and industrial site selection. Staff Director, Governor's Task Force on Energy, Heavy Industry and the Coast of Maine.

Aug. 1964-June 1965 **Athens College, Greece, *Teaching Fellowship***

PROFESSIONAL AFFILIATIONS:

1999-present - Member, Policy Advisory Committee, China Sustainable Energy Project (funded by the David and Lucille Packard Foundation and the Energy Foundation).

1998-2002 - Member, Advisory Council, New England Independent System Operator

Nov. 1986-Nov. 1987 President, National Association of Regulatory Utility Commissioners

1977-1995 NARUC positions, Member, Executive Committee; Member, Electricity Committee (1977-1989); Member, Gas Committee (1989-1993); Member, Communications Committee (1975-1977); Board of Directors, National Regulatory Research Institute (1985-1987).

1975-1977, 1982-1986. Advisory Council, Electric Power Research Institute

1987-1995, Member of New York State Energy Planning Board

1987-1995, Member, Board of Directors, New York State Energy Research and Development Administration

1987-1995, Member, New York State Environmental Board;

1987-1995, Chair, New York State Energy Facilities Siting Board

1992-1994, State co-chair, New York State Task Force on Telecommunications Policy

Vice-chair, Board of Directors, Union of Concerned Scientists

EDUCATION:

1964 *B.A.* History, Yale University, New Haven, CT

1968 *L.L.B.*, Yale University School of Law, New Haven, CT

PUBLICATIONS of Peter A. Bradford

Books

Fragile Structures: A Story of Oil Refineries, National Security and the Coast of Maine, 1975, Harpers Magazine Press.

Law Review

Maine's Oil Spill Legislation, Texas International Law Journal, Vol.7, No.1, Summer 1971, pp.29-43.

Other Published Work

Three Mile Island: Thirty Years of Lessons Learned, Subcommittee on Clean Air and Nuclear Safety, U.S. Senate, March 24, 2009;

Nuclear Power and Presidential Politics, Blue Ridge Press, October, 2008

Recent Developments Affecting State Regulation of Nuclear Power, Regulatory Assistance Project Issueletter, July, 2008

Nuclear Power, Taxpayer Financing and Radical Governance: Precedents and Consequences, for the Nonproliferation Policy Education Center, April, 2008;

Contribution to New York Times Forum "Choking on Growth: China and the Environment", New York Times Online, November 20, 2007,

<http://china.blogs.nytimes.com/2007/11/20/answers-from-peter-bradford/#more-24>;

Contributions to the Bulletin of the Atomic Scientists online forum on Nuclear Power and Climate Change, (with Amory Lovins and Stephen Berry),

<http://www.thebulletin.org/roundtable/nuclear-power-climate-change/>, March-August, 2007;

The Economics of Nuclear Power (with Steven Thomas, Antony Froggatt, and David Millbrow) for Greenpeace International, May, 2007;

Assessing Iran's Nuclear Power Claim, (Proliferation Analysis, Carnegie Endowment for International Peace, January, 2007;

<http://www.carnegieendowment.org/publications/index.cfm?fa=view&id=18951&prog=zgp&proj=znpp>);

Nuclear Power's Prospects in the Power Markets of the 21st Century, for the Nonproliferation Policy Education Center, February, 2005;

China's National Energy Plan: Some Energy Strategy Considerations, (with Thomas Johansson) The Sinosphere Journal, Spring 2004;

Some Environmental Lessons from Electric Restructuring, IUCN Colloquium on Energy Law for Sustainable Development, Shanghai, Winter 2004;

Where Have All the Safeguards Gone? Foreword to "Financial Insecurity: The Increasing Use of Limited Liability Companies and Multi-Tiered Holding Companies to Own Nuclear Power Plants" The Star Foundation August 7, 2002

Nuclear Power after September 11, OnEarth, December 2001.

The Unfulfilled Promises of Electric Restructuring, Nor'easter, summer 2001.

Considerations Regarding Recovery of Strandable Investment, PUR Utility Quarterly, December, 1997.

Ships at a Distance: Energy Choice and Economic Challenge, The National Regulatory Research Institute Quarterly Bulletin, Volume 18, Number 3, Fall, 1997, p. 287 (Originally the 1997 George Aiken Lecture at the University of Vermont).

Book Review: *The British Electricity Experiment - Privatization: the Record, the Issues, the Lessons*, Amicus Journal, June, 1997.

Gorillas in the Mist: Electric Utility Mergers in Light of State Restructuring Goals, The National Regulatory Research Institute Quarterly Bulletin, Spring, 1997.

Til Death Do Us Part or the Emperor's New Suit: Does a Regulatory Compact Compel Strandable Investment Recovery?, PUR Utility Quarterly, October, 1996.

Electric Bargain's Cost Is Dirty Air, Newsday, L.A. Times Features Syndicate, 4/18/96.

A Regulatory Compact Worthy of the Name, The Electricity Journal, November, 1995, pp.12-15.

Paved with Good Intentions: Reflections on FERC's Decisions Reversing State Power Procurement Processes, (with David Moskovitz), The Electricity Journal, August/September, 1995, pp.62-68.

That Memorial Needs Some Soldiers and Other Governmental Approaches to Increased Electric Utility Competition, The Electric Industry in Transition, Public Utility Reports & NYSERDA, 1994, pp.7-13.

Market-Based Speech, The Electricity Journal, September, 1994, p.85.

In Search of an Energy Strategy, Public Utilities Fortnightly, 1/15/92.

Parables of Modern Regulation, The Electricity Journal, November 1992, p.73.

Foreword to: *Regulatory Incentives for Demand Side Management*, Nickel, Reid, David Woolcott, American Council for Energy-Efficient Economy, 1992, pp. ix-xi.

Boats Against the Current: Energy Strategy in Theory and Practice, The Electricity Journal, October, 1991, p.64.

The Shoreham War Has Got to End Now, Newsday, 5/9/89;

Parallel to the Nuclear Age, Yale University 25th Reunion book, 1989;

Book Review: *Safety Second, A Critical Evaluation of the Nuclear Regulatory Commission's First Decade* IEEE Spectrum, February, 1988, p.14.

Somewhere Between Ecstasy, Euphoria and the Shredder: Reflections on the Term 'Promuclear', Journal of the Washington Academy of Sciences, Vol.78, no.2, June 1988, pp. 139-142;

Book Review: *Power Struggle: The Hundred Year War Over Electricity*, Amicus Journal, Winter 1987, pp. 46-47;

Wall Street's Flawed Evaluation of State Utility Regulation, Bangor Daily News, Sept. 3, 1984;

Reflections on the Indian Point Hearings, New York Times, 1/83;

Paradox and Farce: Trends in Federal Nuclear Energy Policy Los Angeles Times, June 6, 1982;

Keeping Faith with the Public, Nuclear Safety, March-April, 1981;

Regulation or Reassurance, Washington Post, August 16, 1979;

Report of the Governor's Task Force on Energy, Heavy Industry and the Maine Coast, 1972;

A Measured Response to Oil Port Proposals, Maine Times, July, 1971.

Other Presentations Concerning Nuclear Energy

Only His Verses Perhaps Could Stop Them, Council on Foreign Relations Forum, Washington, July 10, 2009

The Myth(s) of the Nuclear Renaissance: Is New England Missing the Boat?, Montpelier, Vermont, Hot Topics Forum, June 26, 2009

The Myth(s) of the Nuclear Renaissance, EESI forum, Washington, D.C., May 21 2009;

Nuclear Renaissance: Myths and Realities, Energy Committee, Michigan state senate, April 23, 2009

Report of the Public Oversight Panel on the Comprehensive Reliability Audit of the Vermont Yankee Nuclear Power Plant, (coauthor), March 19, 2009;

CWIP and Subprime Power Plants: Who Will Underwrite a Nuclear Renaissance? IEER forum, Washington, D.C., February 25, 2009;

Nuclear Power's Place in New York's Energy Future, paper for the NY Chapter of the Conservation Law Foundation, New York, December 7, 2008;

Nuclear Power: Are the Star\$ Aligned? Harvard Electricity Policy Group, Cambridge, Mass, May 29, 2008;

Nuclear Power, Energy Security, and Climate Change, Center for Energy and Environmental Security, University of Colorado Law School, Boulder, Colorado, February 1, 2008;

Of Risks, Resources, Renaissances and Reality, Institute of Public Utilities, Charleston, South Carolina, December 4, 2007;

Nuclear Power and Climate Change; Chicago Humanities Festival; November 10, 2007

Risks, Rewards, Resources, Reality; Briefing on the Loan Guarantee Provisions of the 2007 Energy Legislation; Environmental and Energy Study Institute; Washington, D.C., October 30, 2007

Fool Me Twice? Rules for an Unruly Renaissance: Carnegie International Nonproliferation Conference, Washington D.C., June 26, 2007

Regulation, Reality and the Rule of Law: Issues for a Nuclear Renaissance: Washington and Lee University, June 23, 2007.

The Future of Nuclear Energy, Bulletin of the Atomic Scientists Conference; University of Chicago, November 1, 2006

Nuclear Power and Climate Change, Society of Environmental Journalists, Burlington, Vermont, October 27, 2006

Nuclear Power, Climate Change and Public Policy, National Conference of State Legislatures, April, 2006.

Electric Restructuring after Ten Years: Surprises, Shocks and Lessons, State Legislative Leaders' Foundation, November, 2005;

Nuclear Power's American Prospects, Presentation to the California Energy Commission Nuclear Issues Workshop, August, 2005;

Decommissioning Financing: Alternatives and Policies, Conference on the Future of the Medzamor Nuclear Power Plant, Yerevan, Armenia, June 2005;

The Value of Sites Capable of Extended Storage of High Level Nuclear Waste, Report for the Town of Wiscasset, Maine, December 2004 (supplemental report, January, 2005);

Did the Butler Really Do It? The Role of Nuclear Regulation in Raising the Cost of Nuclear Power, Cato Institute, Washington D.C. March 2004;

China's Energy Regulatory Framework China Development Forum, Beijing, November 17, 2003;

Repeating History: Nuclear Power's Prospects in a Carbon-Conscious World Yale School of Forestry and Environmental Studies, Leadership Council Meeting, October 24, 2003;

What Nuclear Power Can Learn from Electric Restructuring, and Vice Versa, Aspen Institute, July 5, 2003;

Renewal of the Price Anderson Act Testimony before the United States Senate Committee on Environment and Public Works Subcommittee on Transportation, Infrastructure and Nuclear Safety, January 23, 2002;

Events Now Long Past: The 20-Year Road from Three Mile Island to Electric Utility Restructuring TMI 20th Anniversary Commemoration, National Press Club, Washington D.C., March 22, 1999;

Preparing Nuclear Power for Competition NARUC Conference on "Nuclear Power in a Competitive Era: Asset or Liability?" January 23, 1997;

Call Me Ishmael: Reflections on the Role of Obsession in Nuclear Energy Policy, NARUC annual meeting, November 13, 1989;

Nuclear Power and Climate Change; Harvard Energy and Environmental Policy Center, January 13, 1989;

Somewhere between Ecstasy, Euphoria and the Shredder: Reflections on the Term Pro-Nuclear Symposium on Nuclear Radiation and Public Health Practices and Policies in the Post-Chernobyl World, Georgetown University, September 18, 1987;

Searching the Foreseeable Past: Nuclear Power, Investor Confidence and Reality Public Utilities Institute, East Lansing Michigan, July 30, 1987;

Where Ignorant Armies Clash by Night: Relationships Among Nuclear Regulators and Regulated NARUC/INPO Seminar on Nuclear Power Plant Safety and Reliability, January 22, 1987;

Why Do We Have a Nuclear Waste Problem Conference on Nuclear Waste, Naples, Maine, March 22, 1986;

With Friends Like These: Reflections on the Implications of Nuclear Regulation, Institute of Public Utilities, Williamsburg, Virginia, December 13, 1982;

A Framework for Considering the Economic Regulatory Implications of the Accident at Three Mile Island, Iowa State Regulatory Conference, May 20, 1982;

The Man/Machine Interface Public Citizen Forum, March 8, 1982;

A Perspective on Nuclear Power, The Groton School, January 15, 1982;

Reasonable Assurance, Regulation and Reality ALI-ABA Course of Study on Atomic Energy Licensing and Regulation, September 24, 1980;

Misdefining the National Security in Energy Policy from Machiasport to Three Mile Island, Environmental Law Institute, University of Maine, May 1, 1980

Condemned to Repeat It? Haste, Distraction, Rasmussen and Rogovin, Risks of Generating Electricity, Seventh Annual National Engineers' Week Energy Conference, February 21, 1980;

Lightening the Nuclear Sled; Some Uses and Misuses of the Accident at Three Mile Island Seminar on the Problems of Energy Policy, New York University, November 21, 1979;

The Nuclear Option: Did It Jump or Was It Pushed? NARUC Regulatory Studies Program, August 2, 1979;

How a Regulatory View of Nuclear Waste Management is Like a Horse's Eye View of the Cart 90th NARUC Annual Convention, November 15, 1978;

Sentence First: Verdict Later: Some Thoughts on the Level of Acclaim Thus Far Afforded the Nuclear Siting and Licensing Act of 1978 ALI-ABA Course of Study, September 28, 1978;

Some Observations on Recent and Proposed Changes in Nuclear Regulatory Commission Jurisdiction Atomic Industrial Forum Workshop on Reactor Licensing and Safety, April 5, 1978;

Other Papers

The Nexus between Energy Sector Reform and Democracy & Governance (co-lead author), for USAID, February, 2005;

Public Interaction in the Georgian Energy Regulatory Process: Case Study for the USAID Project on the Nexus between Democratic Governance and Energy Sector Reform, April, 2004;

Report on the Establishment of the State Energy Regulatory Commission of China (with David Moskovitz, Richard Weston and Wayne Shirley) for the Energy Foundation and the World Bank, January, 2003;

A Plan of Action for a Multisector Regulatory Commission in Armenia, for USAID, February 2003.

Economic Regulatory Issues in the Armenian Water Supply and Wastewater Treatment Sectors, for USAID, January 2003;

Some Potential Approaches to the Enforcement of License Conditions and Regulatory Orders in Armenia, for USAID, June 2002

The Process of Auditing Utilities: A Primer for the Energy Regulatory Commission of Armenia, for USAID, June 2002

Some Potential Approaches to the Difficulties of Enforcement of License Conditions and Regulatory Orders in Georgia and Other NIS Countries, for USAID, December 2000.

Public Interaction in the Georgian Energy Regulatory Process, for USAID, September 2000.

Regulatory Policy and Energy Efficiency: Considerations for Tariff Setting and Licensing, for USAID, April 2000.

Public Interaction in the Armenian Regulatory Process, for USAID, July 1999.

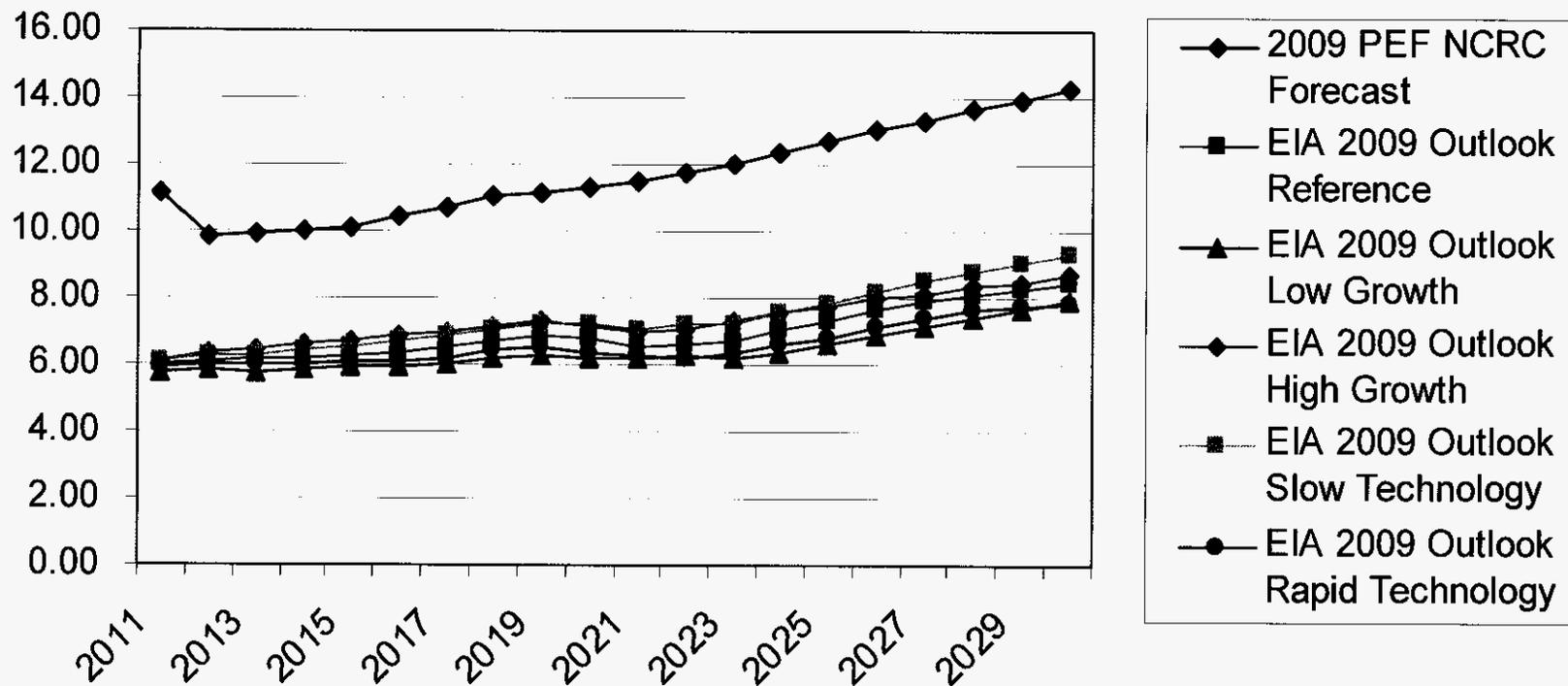
The License as an Instrument for Regulation and the Furtherance of Competition in the N.I.S., for USAID, September, 1998.

Applicability of U.S. Administrative Law Concepts to Regulatory Systems in the Newly Independent States, for USAID, June 1998.

Performance-Based Regulation in a Restructured Electric Industry, (with Bruce Biewald, Paul Chernick, Susan Geller, Jerrold Oppenheim and Tim Woolf) for the National Association of Regulatory Utility Commissioners, November 1997.

EXHIBIT 2

PEF Natural Gas Price Forecast and EIA Long-Term Outlook



Sources:

Docket No. 090009-EI Direct Testimony of Garry Miller, Exhibit GM-1

EIA Annual Energy Outlook, Report #DOE/EA-0383(2009) Figure 65 Data, March 2009

EXHIBIT 3

April 3, 2009

Mr. Robert Sisk, Manager
AP1000 Licensing and Customer Interface
Nuclear Power Plants
Westinghouse Electric Company
P. O. Box 355
Pittsburgh, PA 15230-0355

Dear Mr. Sisk:

**SUBJECT: REVISION TO REVIEW SCHEDULE FOR AP1000 DESIGN
CERTIFICATION AMENDMENT (DOCKET 52-006)**

As discussed in previous correspondence, the U.S. Nuclear Regulatory Commission (NRC) has reassessed the schedule for the AP1000 Design Certification Amendment (DCA) review in light of progress and activities during the last year. Considered in the enclosed schedule (which will also be posted on our public website) was the impact of Westinghouse submitting Design Control Document (DCD) Revision 17 on September 22, 2008 and Westinghouse's past limited ability to make adequate design information available to the staff without the need for supplemental requests for information.

Based on the reassessment, the milestone for the end of last the chapter of the Safety Evaluation Report (SER) w/open items (OI) is January 2010. The projected completion date for the final safety evaluation report is December 2010, and for the rulemaking, August 2011. At this time, Chapter 3 of the DCD, in particular the seismic analyses review, is on the critical path. In order to issue a schedule for Phase 2 that includes Chapter 3, the NRC has included steps in the schedule to show the dependency upon timely Westinghouse delivery of design information. If Westinghouse cannot provide the necessary information, such that the staff can reduce these complex technical issues down to specific resolvable OIs, within these allotted times, the chapter date in the schedule may need be extended.

In addition to the critical path sections, other chapters with longer projected completion schedules are Chapters 6 and 9. Delays in these chapters could shift the critical path. Thus, timely and complete response to remaining request for additional information and to OIs for all chapters will also be necessary for the staff to complete the final safety evaluation report on the projected schedule. You are requested to respond to this letter concerning your ability to meet the assumptions for actions that form the basis for the projected schedule.

R. Sisk

-2-

The staff is evaluating the schedules for the combined license applications (COL) that are referencing (the AP1000) design certification; the schedules for some of those COLs will be adjusted as well. If you have questions, please contact Ms. Eileen McKenna at 301-415-7110.

Sincerely,

/RA/

David B. Matthews, Director
Division of New Reactor Licensing
Office of New Reactors

Docket No. 52-006

Enclosure:
As stated

cc w/enclosure: see next page

R. Sisk

-2-

The staff is evaluating the schedules for the combined license applications (COL) that are referencing (the AP1000) design certification; the schedules for some of those COLs will be adjusted as well. If you have questions, please contact Ms. Eileen McKenna at 301-415-7110.

Sincerely,

/RA/

David B. Matthews, Director
Division of New Reactor Licensing
Office of New Reactors

Docket No. 52-006

Enclosure:
As stated

cc w/enclosure: see next page

DISTRIBUTION:

PUBLIC

RidsNroDnrl

RidsNroDsra

RidsOgcMailCenter

RidsNroDser

RidsNroDe

RidsAcrcsAcnwMailCenter

RidsNroDcip

RidsNroNwe2

Adams Accession Number: ML090770458

OFFICE	NWE2/DNRL:LA	NWE2/DNRL:BC	DNRL: D
NAME	RButler	EMcKenna	DMatthews
DATE	03/20/09	03/31/09	04/03/09

OFFICIAL RECORD COPY

DC Westinghouse - AP1000 Mailing List
cc:

(Revised 04/01/2009)

Mr. Glenn H. Archinoff
AECL Technologies
481 North Frederick Avenue
Suite 405
Gaithersburg, MD 20877

Mr. Ed Wallace
General Manager - Projects
PBMR Pty LTD
P. O. Box 9396
Centurion 0046
Republic of South Africa

Ms. Michele Boyd
Legislative Director
Energy Program
Public Citizens Critical Mass Energy
and Environmental Program
215 Pennsylvania Avenue, SE
Washington, DC 20003

Mr. Gary Wright, Director
Division of Nuclear Facility Safety
Illinois Emergency Management Agency
1035 Outer Park Drive
Springfield, IL 62704

Mr. Barton Z. Cowan, Esquire
Eckert Seamans Cherin & Mellott, LLC
600 Grant Street, 44th Floor
Pittsburgh, PA 15219

Mr. Jay M. Gutierrez
Morgan, Lewis & Bockius, LLP
111 Pennsylvania Avenue, NW
Washington, DC 20004

Ms. Sophie Gutner
P.O. Box 4646
Glen Allen, VA 23058

Mr. Ronald Kinney
South Carolina DHEC
2600 Bull Street
Columbia, SC 29201

Dr. Regis A. Matzie
Senior Vice President and
Chief Technology Officer
Westinghouse Electric Company
20 International Drive
Windsor, CT 06095

Mr. Tom Sliva
7207 IBM Drive
Charlotte, NC 28262

DC Westinghouse - AP1000 Mailing List

Email

alsterdis@tva.gov (Andrea Sterdis)
amonroe@scana.com (Amy Monroe)
Antonio.Fernandez@FPL.com (Antonio Fernandez)
APAGLIA@Scana.com (Al Paglia)
APH@NEI.org (Adrian Heymer)
awc@nei.org (Anne W. Cottingham)
BrinkmCB@westinghouse.com (Charles Brinkman)
Carelmd@westinghouse.com (Mario D. Carelli)
cberger@energetics.com (Carl Berger)
chris.maslak@ge.com (Chris Maslak)
crpierce@southernco.com (C.R. Pierce)
CumminWE@Westinghouse.com (Edward W. Cummins)
cwaltman@roe.com (C. Waltman)
david.hinds@ge.com (David Hinds)
david.lewis@pillsburylaw.com (David Lewis)
doug.ellis@shawgrp.com (Doug Ellis)
eddie.grant@excelservices.com (Eddie Grant)
erg-xl@cox.net (Eddie R. Grant)
garry.miller@pgnmail.com (Garry D. Miller)
gcesare@enercon.com (Guy Cesare)
George.Madden@fpl.com (George Madden)
greshaja@westinghouse.com (James Gresham)
gwcurtis2@tva.gov (G. W. Curtis)
gzinke@entergy.com (George Alan Zinke)
ian.c.rickard@us.westinghouse.com (Ian C. Richard)
james.beard@gene.ge.com (James Beard)
jerald.head@ge.com (Jerald G. Head)
jgutierrez@morganlewis.com (Jay M. Gutierrez)
jim.riccio@wdc.greenpeace.org (James Riccio)
jim@ncwarn.org (Jim Warren)
JNesrsta@cpsenergy.com (James J. Nesrsta)
John.O'Neill@pillsburylaw.com (John O'Neill)
Joseph_Hegner@dom.com (Joseph Hegner)
junichi_uchiyama@mnes-us.com (Junichi Uchiyama)
KSutton@morganlewis.com (Kathryn M. Sutton)
kwaugh@impact-net.org (Kenneth O. Waugh)
lchandler@morganlewis.com (Lawrence J. Chandler)
lindg1da@westinghouse.com (Don Lindgren)
Marc.Brooks@dhs.gov (Marc Brooks)
maria.webb@pillsburylaw.com (Maria Webb)
marilyn.kray@exeloncorp.com
mark.beaumont@wsms.com (Mark Beaumont)
matias.travieso-diaz@pillsburylaw.com (Matias Travieso-Diaz)
maurerbf@westinghouse.com (Brad Maurer)

DC Westinghouse - AP1000 Mailing List

media@nei.org (Scott Peterson)
Mitch.Ross@fpl.com (Mitch Ross)
MSF@nei.org (Marvin Fertel)
mwetterhahn@winston.com (M. Wetterhahn)
nirsnet@nirs.org (Michael Mariotte)
patriciaL.campbell@ge.com (Patricia L. Campbell)
paul.gaukler@pillsburylaw.com (Paul Gaukler)
Paul.Jacobs@fpl.com (Paul Jacobs)
Paul@beyondnuclear.org (Paul Gunter)
pshastings@duke-energy.com (Peter Hastings)
Raymond.Burski@fpl.com (Raymond Burski)
rclary@scana.com (Ronald Clary)
rgrumbir@gmail.com (Richard Grumbir)
Richard.Orthen@fpl.com (Richard Orthen)
RJB@NEI.org (Russell Bell)
RKTemple@cpsenergy.com (R.K. Temple)
robert.kitchen@pgnmail.com (Robert H. Kitchen)
Russell.Wells@Areva.com (Russell Wells)
sabinski@suddenlink.net (Steve A. Bennett)
sandra.sloan@areva.com (Sandra Sloan)
sfrantz@morganlewis.com (Stephen P. Frantz)
sisk1rb@westinghouse.com (Rob Sisk)
stephan.moen@ge.com (Stephan Moen)
Steve.Franzone@fpl.com (Steve Franzone)
steven.hucik@ge.com (Steven Hucik)
Support@SaporitoEnergyConsultants.com (Thomas Saporito)
Tansel.Selekler@nuclear.energy.gov (Tansel Selekler)
tdurkin@energetics.com (Tim Durkin)
tom.miller@hq.doe.gov (Tom Miller)
tomccall@southernco.com (Tom McCallum)
TomClements329@cs.com (Tom Clements)
trsmith@winston.com (Tyson Smith)
Vanessa.quinn@dhs.gov (Vanessa Quinn)
VictorB@bv.com (Bill Victor)
vijukrp@westinghouse.com (Ronald P. Vijuk)
Wanda.K.Marshall@dom.com (Wanda K. Marshall)
wayne.marquino@ge.com (Wayne Marquino)
whorin@winston.com (W. Horin)
william.maher@fpl.com (William Maher)



Westinghouse Electric Company
Nuclear Power Plants
P.O. Box 355
Pittsburgh, Pennsylvania 15230-0355
USA

U.S. Nuclear Regulatory Commission
ATTENTION: David B. Matthews, Director
Division of New Reactor Licensing
Office of New Reactors
Washington, D.C. 20555

Direct tel: 412-374-6206
Direct fax: 412-374-5005
e-mail: sisk1rb@westinghouse.com

Your ref: Docket No. 52-006
Our ref: DCP/NRC2439

April 23, 2009

Subject: REVISION TO REVIEW SCHEDULE FOR AP1000 DESIGN CERTIFICATION
AMENDMENT (DOCKET 52-006)

Dear Mr. Mathews:

Westinghouse would like to acknowledge receipt of the AP1000 Design Certification Amendment (DCA) review schedule to accommodate the design enhancements introduced by Rev 17 and issued to the NRC on September 22, 2008.

Westinghouse understands that based on the staff's reassessment the following key milestones have been established:

- Last chapter of the Safety Evaluation Report (SER) with open items (OI) is January 2010;
- Final Safety Evaluation Report is December 2010; and
- Rulemaking is scheduled to be completed August 2011.

Westinghouse also understands that the completion of the Chapter 3 review represents the critical path on this schedule, with Chapter 6 and 9 reviews being near critical path. Westinghouse is prepared to support the NRC's successful completion of these activities through its timely provision of design information to the Staff and timely responses to the Staff requests for additional information.

Westinghouse appreciates the efforts that the NRC has gone to in establishing a review schedule that is realistic, but workable given the near-term construction needs of the early AP1000 COL applicants. However, this schedule could continue to offer schedule challenges in the construction schedule of some applicants. Thus, Westinghouse's goal is to improve this schedule by several months over the next year; and Westinghouse is committed to providing resources to address NRC's issues as required to make that happen. The Staff has indicated that they are also willing to apply resources to support Westinghouse's efforts toward that endeavor.

In particular, Westinghouse is committed to applying resources to support the Staff's seismic and structural review, with the goal of closing out this issue this summer. This is based on the status of Westinghouse's design and our understanding of the Staff's concerns expressed in recent technical interactions between Westinghouse and the Staff. Thus, Westinghouse proposes that this be established as a mutual objective for this review.

DO63
NRW

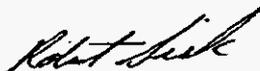
Westinghouse is also focusing on addressing other potential impacts on the schedule, and is working to close out all remaining Staff questions this summer, including those remaining in Chapters 6 and 9. Westinghouse will continue to work to reduce responses to complex technical issues to a resolvable level that the Staff can translate into the safety evaluations. Westinghouse values feedback from the Staff in this regard, consistent with that received during recent technical interactions, and encourages continued interactions and prompt feedback

While it is recognized that due to the timing in the schedule some open items may remain at the time of the initial safety evaluation, Westinghouse's goal is to close issues and minimize the need for open items to the maximum practical extent. Westinghouse's internal goal is to resolve all open items by January 2010.

Westinghouse looks forward to working with the NRC in a manner that will allow us to complete this effort well ahead of schedule. Your support in this endeavor is appreciated.

If the Staff feels that at anytime we are missing an opportunity to accelerate the schedule or if there are any questions please let me know. I can be reached at 412-374-6206.

Very truly yours,



Robert Sisk, Manager
Licensing and Customer Interface
Regulatory Affairs and Standardization

cc: E. McKenna (USNRC)
D. Jaffe (USNRC)