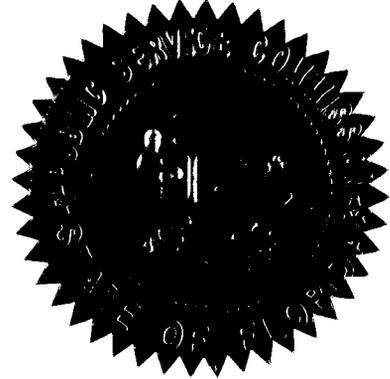


BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 070052-EI

In the Matter of:

PETITION BY PROGRESS ENERGY FLORIDA,
INC. TO RECOVER COSTS OF CRYSTAL RIVER
UNIT 3 UPRATE THROUGH FUEL CLAUSE.



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VOLUME 1

Pages 1 through 176

PROCEEDINGS: HEARING

BEFORE: CHAIRMAN LISA POLAK EDGAR
COMMISSIONER MATTHEW M. CARTER, II
COMMISSIONER KATRINA J. McMURRIAN
COMMISSIONER NANCY ARGENZIANO
COMMISSIONER NATHAN A. SKOP

DATE: Tuesday, August 7, 2007

TIME: Commenced at 9:40 a.m.

PLACE: Betty Easley Conference Center
Room 148
4075 Esplanade Way
Tallahassee, Florida

REPORTED BY: LINDA BOLES, RPR, CRR
Official FPSC Reporter
(850) 413-6734

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FLORIDA PUBLIC SERVICE COMMISSION

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I N D E X

WITNESSES

1
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19
20
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24
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NAME: PAGE NO.

DANIEL L. RODERICK

Direct Examination by Ms. Triplett	30
Prefiled Amended Direct Testimony Inserted	32
Prefiled Amended Rebuttal Testimony Inserted	52
Cross Examination by Ms. Christensen	65
Cross Examination by Mr. Wright	76
Cross Examination by Mr. McWhirter	79
Cross Examination by Mr. Brew	94
Cross Examination by Mr. Twomey	103
Redirect Examination by Ms. Triplett	121

SAMUEL S. WATERS

Direct Examination by Ms. Triplett	127
Prefiled Amended Direct Testimony Inserted	129
Cross Examination by Mr. McGlothlin	144
Cross Examination by Mr. McWhirter	151

CERTIFICATE OF REPORTER 176

1
2
3
4
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6
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EXHIBITS

NUMBER:		ID.	ADMTD.
1	Comprehensive Exhibit List	8	8
2	DLR-1	122	122
3	DLR-2	122	122
4	DLR-3	122	122

P R O C E E D I N G S

1
2 CHAIRMAN EDGAR: Good morning. Call this hearing to
3 order. And we'll begin by asking our staff to read the notice.

4 MS. BENNETT: By notice duly given, this time and
5 place has been set for the Commission to hear testimony in
6 Docket Number 070052, petition by Progress Energy Florida to
7 recover costs of Crystal River Unit 3 uprate through the fuel
8 clause.

9 CHAIRMAN EDGAR: Thank you.

10 Okay. We'll take appearances. And you've thrown me.
11 We're in a different order today. Okay. We'll start to my
12 right.

13 MR. WALLS: Good morning, Commissioners. My name is
14 Mike Walls, and with me is Dianne Triplett of the law firm of
15 Carlton Fields representing Progress Energy Florida.

16 CHAIRMAN EDGAR: Okay. And I am having a little
17 difficulty hearing. Can you maybe up the mikes for me? Thank
18 you. Okay.

19 MR. WRIGHT: Robert Scheffel Wright, Law Firm of
20 Young van Assenderp, representing the Florida Retail
21 Federation. I'd also like to enter appearances as shown in the
22 prehearing order for John T. Lavia, III, and Timothy R. Qualls.
23 Thank you, Madam Chairman.

24 CHAIRMAN EDGAR: Thank you.

25 MR. MCGLOTHLIN: Joe McGlothlin and Patty Christensen

1 of the Office of Public Counsel.

2 MR. TWOMEY: I'm Mike Twomey appearing on behalf of
3 AARP and their 2.8 million Florida members.

4 CHAIRMAN EDGAR: Thank you.

5 MR. BREW: I'm James Brew from the law firm of
6 Brickfield, Burchette, Ritts & Stone for PCS White Springs.

7 CHAIRMAN EDGAR: Thank you.

8 MR. McWHIRTER: John McWhirter for the Florida
9 Industrial Power Users Group.

10 CHAIRMAN EDGAR: Thank you. And staff.

11 MS. BENNETT: Lisa Bennett and Keino Young for Public
12 Service Commission staff.

13 CHAIRMAN EDGAR: Thank you.

14 Okay. Let's take up preliminary matters.

15 MS. BENNETT: Madam Chair, I'd like to refer
16 everyone's attention to the comprehensive exhibit list. I've
17 passed copies out to the Commission, and there's those
18 available for the parties on the dais over here.

19 The comprehensive exhibit list itself is identified
20 as Exhibit 1. Staff notes that Exhibits 20 through 25 on the
21 list will be used for cross-examination purposes. Items 20 and
22 21, FIPUG's cross-examination documents, are stipulated as to
23 authenticity but are still subject to objections of relevancy.
24 Items 20 through 25 will need to be admitted into the record at
25 the times they are introduced.

1 There are no objections to the entry of the
2 comprehensive exhibit list to my knowledge, and I ask that
3 Exhibit 1 be moved into the record at this time.

4 CHAIRMAN EDGAR: Okay. Any comments, concerns,
5 additions for the comprehensive exhibit list marked as
6 Exhibit 1?

7 MR. McWHIRTER: No objections.

8 CHAIRMAN EDGAR: Okay. Seeing none, the
9 comprehensive exhibit list will be marked as Exhibit 1 and
10 entered into the record.

11 (Exhibit 1 marked for identification and admitted
12 into the record.)

13 Ms. Bennett, any other preliminary matters?

14 MS. BENNETT: Yes, Madam Chair. The prefiled
15 testimony and exhibits, we recommend that each attorney will
16 request that the witness's testimony and exhibits be moved into
17 the record at the time that the witness comes forward to
18 present their summary.

19 CHAIRMAN EDGAR: Okay. And as I generally do, the
20 form that I'd like to use is that when the witnesses come up
21 and you go through your introductory questions, then we can
22 enter the prefiled testimony into the record and then take up
23 the exhibits after their testimony.

24 Any other matters?

25 MS. BENNETT: I have no other matters.

1 CHAIRMAN EDGAR: Okay. Any other matters from any of
2 the parties before we move to opening statements? Seeing none,
3 okay. Then as per the prehearing order, we will allow 15
4 minutes opening statements per side. We will begin with
5 Progress and then we move -- when we move to the other parties,
6 I will ask you to give me an approximation of how you intend to
7 apportion that time. And I will keep track of the time and we
8 will try to stick to the time limits.

9 Okay. I think we're ready. You are recognized for
10 opening statement, 15 minutes.

11 MR. WALLS: Thank you, Commissioner.

12 Good morning, Commissioners. Let's start with two
13 things that I think all the parties can agree on. First,
14 there's no dispute that this project involves work in three
15 phases at PEF's nuclear facility Crystal River Unit 3 or
16 CR3 that will increase electrical power output. PEF's
17 testimony is that this increase will be at least 180 megawatts.

18 Second, there's no dispute that the increase in
19 electrical power output through increased nuclear generation
20 benefits customers. Nuclear generation uses the lowest cost
21 fuel source available to the company. Increased nuclear
22 generation means higher cost fossil fuel generation will be
23 displaced. This means there will be fuel savings. The very
24 reason for this project is to reduce total fuel costs to
25 customers. Because customer bills will be lower or the same

1 with the increased nuclear production than they would be
2 without it, fuel savings will pay for the project. In other
3 words, the project pays for itself. The expected fuel savings
4 far outweigh the costs in the fuel savings that will pay for
5 this project, and there's no real dispute about that.

6 Now Progress Energy Florida is before this Commission
7 today requesting the power uprate costs for its nuclear
8 generation unit through the fuel clause under Commission
9 Order 14546. That order sets forth the charges properly
10 considered in developing the fuel expense in the utility's fuel
11 cost recovery clause in a list of ten items.

12 Item 10 in that list provides, and I'll quote,
13 charges for fossil fuel-related costs normally recovered
14 through base rates but which were not recognized or anticipated
15 in the cost levels used to determine current base rates and
16 which, if expended, will result in fuel savings to customers.
17 There's no dispute that Item 10 of the order says that.

18 And this is not the first nuclear uprate project for
19 which cost recovery has been sought and approved under Item 10
20 of Order 14546. In 1996, in Order Number PSC-96-1172, the
21 Commission approved FPL's request for cost recovery of its
22 Turkey Point Nuclear Power Plant uprate project costs through
23 the fuel clause. The Commission determined that FPL's uprate
24 met this test under Item 10 of Order 14546. The CR3 power
25 uprate benefits customers like the Turkey Point power uprate by

1 displacing higher cost fossil fuel generation.

2 There's no real dispute that fuel savings will be
3 generated. There's also no real dispute that fuel savings
4 exceed the present costs at net present value. After all the
5 project costs are paid, there will be \$320 million in fuel
6 saving benefits to customers on a net present value basis.

7 The Intervenors have not challenged the
8 reasonableness of Progress Energy Florida's costs or fuel
9 savings. They have done no analysis of their own. What they
10 say is that costs may go up or fuel savings may go down. But
11 they must admit that the opposite is true too; costs may go
12 down and fuel savings may go up. And there's nothing to
13 suggest that Progress Energy's estimates are not reasonable and
14 consistent with accepted utility engineering practices. That's
15 the second part of the test under Item 10 of Order 14546.

16 There's also no dispute that nuclear uprate costs
17 were not recognized or anticipated in the cost levels used to
18 determine the company's current base rates. It is undisputed
19 that the MFRs for Progress Energy's last base rate case used to
20 determine the cost levels for current base rates did not
21 include the uprate project. That's the first part of the test
22 under Item 10 of Order 14546.

23 So the nuclear power uprate meets this test for
24 charges that can be included in the fuel clause and PEF's
25 petition should therefore be granted.

1 Now if all this is true, and it is, what did the
2 Intervenors say? Well, they say the policy allowing these
3 charges under Item 10 of Order 14546 doesn't mean what it says
4 and doesn't mean what the Commission has said it meant for the
5 last 20 years. In effect, they want to change the policy, not
6 apply it here. But if they want to do that, we believe that
7 should be done in another docket where all utilities and
8 interested parties can participate and have a say just like
9 they did when the policy was developed.

10 Now the Intervenors point to the second sentence of
11 Item 10 that says recovery of the costs that meet this two-part
12 test under Order 14546 should be made, quote, on a case-by-case
13 basis after Commission approval, end quote. They claim this
14 means the Commission can consider whatever it wants, even if
15 it's not stated in the order. Well, that's not what it says
16 and the Commission has not read it that way.

17 The Commission meant the utility must petition the
18 Commission case by case and include charges in the fuel clause
19 under Item 10 only after consideration of the two factors
20 expressly stated there. This is unlike every other charge in
21 Order 14546. The other charges in Items 1 through 9 can be
22 automatically added to the fuel charges under that order.
23 That's what case by case means.

24 If it meant what the Intervenors say, it means
25 there's no policy to guide utilities at all. The utilities

1 would never know in advance what was necessary to demonstrate
2 that a project complied with the policy in Item 10 of Order
3 14546.

4 OPC's witness Mr. Lawton agrees that Item 10 is a
5 statement of Commission policy and that the policy must be
6 consistently applied. Yet none of the things the Intervenors
7 want the Commission to consider today, new definitions,
8 determining whether it's volatile or not, earnings tests, cost
9 size tests and potential future base rate recovery can be found
10 anywhere in Item 10 of Order 14546 or in any order applying the
11 policy over the last 20 years.

12 Ms. Merchant has testified that the Commission policy
13 in Item 10 means, quote, was meant to encourage utilities to
14 spend money that they might not otherwise choose to spend to
15 save fuel costs, end quote. That's right. And every new test
16 or limitation or definition that Intervenors want to add to
17 this two-part test in Order 14546 that is not found there
18 undermines that policy. If you limit the fossil fuel-related
19 costs to exclude capital costs like the uprate costs that
20 reduce fossil fuel costs, then you eliminate consideration of
21 this uprate and the Turkey Point uprate which was previously
22 approved by the Commission. If you add an earnings test, you
23 convert the straightforward two-part test into a complex base
24 rate inquiry and undermine the policy. If you add a volatility
25 requirement for the charges, you eliminate all capital base

1 rate charges contemplated under the very first part of the test
2 and you undermine the policy. If you simply select some
3 arbitrary project cost size, you undermine the policy.

4 Indeed, while the CR3 uprate costs are larger than
5 the costs of any project previously approved under the order,
6 so are the fuel savings. They're estimated at \$2.6 billion
7 over the life of CR3. If you add a requirement that says no
8 recovery if the costs can be recovered in future base rates,
9 you contradict the first part of the test which says that you
10 only have to show that they're not included in current base
11 rates and you undermine the policy.

12 The Commission understood all this, of course, when
13 it adopted the policy in Item 10. That's why it's a simple,
14 straightforward two-part test. First, are the costs
15 anticipated or recognized in current base rates? If not,
16 there's no risk of double recovery. Second, will the costs, if
17 incurred, generate fuel savings? If so, customers will benefit
18 from those fuels savings and the fuel savings will pay for the
19 project. That's exactly the way the Commission has applied the
20 policy for 20 years and the way it should be applied here.

21 Finally, the Intervenors take issue with the manner
22 in which PEF seeks recovery of the uprate costs under the fuel
23 clause. However, PEF only asks to be treated the same way the
24 Commission has treated every other utility with a project
25 approved over the past 20 years. PEF seeks to recover its

1 current weighted average cost of capital on its investment in
2 the uprate, but Intervenors want to limit them to a debt rate.
3 Well, a debt rate is no return at all. It's simply recovery of
4 costs. For if all you say you can get out of it is debt, then
5 that's all that's going to be put in, and that undermines the
6 policy.

7 In fact, in 2001 the parties, including OPC and
8 FIPUG, stipulated that the appropriate rate of return for
9 capital projects after 2002 that were expected to reduce
10 long-term fuel costs under Order 14546 was the utility's cost
11 of capital based on the midpoint of its authorized return on
12 equity. This stipulation was approved as reasonable by the
13 Commission in Order PSC-01-2516.

14 PEF also seeks to recover its costs to the extent
15 there are fuel savings, whatever that period may be. PEF has
16 estimated it now at ten years, but it may be shorter or
17 somewhat longer. PEF will use the fuel savings to pay for the
18 cost. Customer bills will remain the same or go down, all else
19 being equal, until the project costs are paid.

20 This recovery period linked to the time it takes fuel
21 savings to pay for the costs is something the Commission has
22 recognized in every prior utility request under this order.
23 Again, PEF is only asking that the policy be consistently
24 applied and it receive the same treatment as other utilities.

25 Some Intervenors have also suggested that PEF's

1 request violates the terms of its rate case settlement
2 agreement. That's simply wrong. Nothing in the settlement
3 prevents this request or recovery. The nuclear uprate costs
4 are not a new surcharge which is prohibited, but a request
5 under an existing cost recovery clause under established
6 Commission policy at the time of the settlement.

7 In fact, if you look at the fuel savings from the
8 uprate project which will keep customer bills the same or lower
9 than they otherwise would be, there's really no surcharge at
10 all.

11 Some Intervenors claim also that the nuclear uprate
12 project meets a need for customer growth or increased energy
13 usage. The nuclear uprate project was developed, however, to
14 meet an economic need, fuel savings, not a reliability need,
15 and that's what this Commission determined in the need
16 proceeding order.

17 In sum, the purpose of the project is clear: It will
18 provide needed additional nuclear generation that will displace
19 or reduce higher cost fossil fuel generation. This means fuel
20 savings for customers. And because of these fuel savings and
21 because the uprate costs are not in current base rates, PEF's
22 request for cost recovery through the fuel clause should be
23 granted, and we ask the Commission to do so under its
24 consistent application of its policy in Item 10 of Order 14546.
25 Thank you.

1 CHAIRMAN EDGAR: Thank you, Mr. Walls.

2 And to the other parties, how would you like to
3 apportion your 15 minutes?

4 MR. MCGLOTHLIN: We have consulted among ourselves,
5 and the other counsel have agreed that if I will take seven and
6 a half or eight minutes, they will confine their time
7 requirements accordingly. And I will ask if, if it looks like
8 I'm going beyond the eight minutes, I hope somebody will tackle
9 me because I don't want to impinge on their requirements.

10 CHAIRMAN EDGAR: Okay. We'll work together to make
11 sure that we stay in the time allotted.

12 Mr. McGlothlin, you're recognized.

13 MR. MCGLOTHLIN: The Office of Public Counsel
14 strenuously opposes Progress Energy's proposal to pass some
15 \$400 million of capital investment in generating plant through
16 the fuel cost recovery clause. As a public utility to which
17 has been granted the extreme advantage of the right to serve
18 100 percent of the retail customers in its service area,
19 Progress Energy Florida has an obligation to undertake those
20 measures that are prudent and cost-effective and have the
21 effect of improving service to its customers. Progress Energy
22 also has the right to recover its cost of service and an
23 opportunity to earn a fair rate of return, but it does not have
24 the right to more than that. In our view, it would be
25 difficult to devise a ratemaking package that so severely

1 subordinates customers' interests to the company's desires as
2 this one does.

3 Our witnesses, Patricia Merchant and Dan Lawton, will
4 demonstrate this is true whether one views the proposal from
5 the standpoint of basic general ratemaking principles or from
6 the standpoint of the fairness or lack of fairness of the
7 individual elements and components of the details in the
8 proposal.

9 With respect to general ratemaking principles, we see
10 this proposal as an effort to avoid a consideration of the
11 extent to which revenue growth between now and the
12 2009/2011 time frame could result in the ability to absorb some
13 or all of the costs of the project within base rates and
14 mitigate the need for customer bills to increase to pay for the
15 cost of the project.

16 Our witness Dan Lawton boils down that aspect of the
17 situation at Page 21 of his prefiled testimony where he is
18 asked, "In your opinion, what is the danger of allowing PEF to
19 pass base rate-related costs through the fuel cost recovery
20 clause?" He will state, "If PEF passes the entire project
21 costs through the fuel clause when base rate revenues are
22 adequate to cover some or all of the costs and provide a fair
23 return, then customers' total bills will be too high. PEF will
24 have circumvented the primary means of ensuring its rates are
25 fair and reasonable, and will have realized a windfall."

1 Ms. Merchant provides some illustrations that
2 demonstrate how this can happen, and it involves the
3 relationship, the proper relationship between those costs which
4 are related to base rates and those costs which are an
5 exception to the base rate process and instead pass through
6 special cost recovery clauses.

7 If the utility incurs a new cost that is related to
8 base rates and is ordinarily collected through base rates and
9 those base rates are not changed, then earnings go down. If
10 instead the company passes a base rate-related cost through the
11 cost recovery clause, then its earnings are protected and
12 customers' bills go up. And that is why it is, it is crucially
13 important for the Commission to stand guard over requests to
14 depart from the base rate process and allow the utility to pass
15 base rate-related costs through the cost recovery clause only
16 when overriding clause considerations justify that departure.
17 That is not the case here.

18 As we mentioned earlier, the, the costs that, that we
19 are talking about will not be incurred until the 2009/2011 time
20 frame. And for that reason, there is ample opportunity for the
21 company to file prior to that time a base rate proceeding and
22 for the Commission to devise rates that will, that will
23 encompass the cost of the project and have those rates go into
24 effect at the same time those costs were incurred.

25 This fundamentally distinguishes this case from the

1 situation that was envisioned in the order that Progress Energy
2 relies on so many times, Order 14546. It is implicit in the
3 order that the Commission was concerned about the possibility
4 that the utility would have the opportunity to undertake a
5 measure that would benefit customers but would not have the
6 opportunity to recover those costs in a timely fashion. This
7 is fundamentally different in this case.

8 With respect to the details of the proposal, Progress
9 Energy Florida proposes to have ratepayers forego any fuel
10 savings that would lower their bills until, by its own
11 estimates, the Year 2016, during which time any fuel savings
12 would pay for the project. This would create severe
13 intergenerational inequities of the type that was never
14 envisioned by the Commission when it, when it formulated policy
15 in Order 14546.

16 Now Progress Energy claims that the approval of its
17 proposal in this case was more or less preordained in Order
18 14546. It claims that the Public Counsel and other Intervenors
19 are trying to change that policy. That isn't the case.

20 Again, the basis for 14546 was the absence of an
21 opportunity for timely recovery, which is not present here.
22 Also, in the order the Commission was careful to say that it
23 would consider requests on a case-by-case basis. Progress
24 Energy Florida wants to read that language out of the order.
25 But it was clearly, it's clearly -- clearly it was wise for the

1 Commission to require that approach. Instead of an
2 anticipatory carte blanche, which is the company's proposal, it
3 reserved to itself the ability to review and scrutinize the
4 particulars of a given case. And here it is appropriate for
5 the Commission to consider, among other things, the materiality
6 of the proposal. This is the first instance you have, that the
7 Commission has seen where a utility proposes to pour
8 \$400 million of capital costs through a cost recovery clause.
9 The nature of the costs, the nature of the costs are a capital
10 investment in generating plant. If this is allowed, what's
11 next? New power plants, do they go through the clause if fuel
12 savings are shown? One has to draw the line somewhere.

13 The existence of a potential windfall by the
14 avoidance of a base rate case during which revenue growth can
15 be considered, the creation of severe intergenerational
16 inequities of the nature, of the type and nature which should
17 condemn this particular proposal, and the, and the attempt to
18 overstate capital costs, all of which lead us to urge the
19 Commission to, to deny this proposal.

20 During a recent workshop on renewable energy, I heard
21 an officer of Progress Energy Florida say it was concerned
22 about the impact of activities in that area on the customers'
23 bills and it was sensitive to the need to be appreciative of
24 the impact on customers' bills. Unfortunately, the company has
25 taken a completely different tack in this proposal, and we call

1 on the Commission to, to scrutinize the proposal from the
2 standpoint of the impact on customers. Thank you.

3 CHAIRMAN EDGAR: And I was just about to say I have
4 you at just eight minutes. So thank you, Mr. McGlothlin.

5 Mr. McWhirter and then are there others? Mr. Twomey?
6 Just, I'd just like to keep track so we can follow our time.

7 MR. WRIGHT: I have fewer than 30 seconds of
8 comments.

9 CHAIRMAN EDGAR: Okay.

10 MR. WRIGHT: And if they use it up, it's okay with
11 me, Madam Chair.

12 CHAIRMAN EDGAR: Okay. All right. Thank you.

13 Mr. McWhirter.

14 MR. McWHIRTER: Like the evening news, I'm going to
15 try to squeeze 12 thoughts into two minutes.

16 The first thing that came to mind when I began to
17 evaluate this case and look at the witnesses was a quote from
18 the Sermon on the Mount contained in the three synoptic
19 gospels: Matthew, Mark and Luke. The quote is, "No man can
20 serve two masters." And when you apply that to the
21 circumstances of this case, you find that people like the
22 company I represent, they serve their company by increasing
23 profitability. But to increase profitability, they must do it
24 by reducing their prices and by becoming more efficient, and
25 that way they are able to capture customers. However, in the

1 case of Progress Energy just the opposite is true. The
2 customers are already captured. So when they come in this case
3 today, their proposition must be that they're serving the other
4 master; they're doing it for the benefit of the customers and
5 forget about the profitability to the company.

6 Well, when you evaluate the direct testimony, the
7 exhibits, the cross-examination, you're going to find several
8 very interesting things. The 2006 surveillance report, which
9 is Exhibit 16, shows that in the calendar year just ended they
10 collected \$1.7 billion through base rates and an additional
11 \$2.7 billion in cost recovery. Cost recovery was essentially
12 nonexistent about 15 years ago. Mr. Waters' testimony says
13 that \$2.7 billion is going to rise to \$3.1 billion next year
14 based on his schedule.

15 You will hear also that one of our complaints is that
16 base rates are frozen. But, in fact, the deal we made back in
17 2002 was that if they would bring in Hines 3 at no cost to the
18 customers, we would allow Hines 2 and 4 to come into base rates
19 in 2008. So beginning next year the rates, the base rates on
20 top of the \$1.7 billion are going to go up about another \$100
21 million. So customers are looking at a \$600 million increase
22 in fuel costs, plus a \$90 million to \$100 million increase in
23 base rates beginning next year, and onto that they want to add
24 the cost of the nuclear uprate.

25 The problem is that base rates already bring in

1 \$41.87 for every thousand kilowatt hours sold. And if you look
2 at the projections in this case, the base rates, the sales by
3 this company between now and 2011 when the CR3 uprate comes
4 online will increase something like 5 million gigawatt hours.
5 In other words, base rates just by the growth in the sales over
6 time are going to raise an additional \$249 million a year,
7 which we think should probably be satisfactory to cover the
8 cost of the uprate without the necessity of adding on another
9 \$100 million beginning in 2011 under the proposal in this case.

10 If you once again look at the 2006 surveillance
11 report, you'll find that after paying a full dividend to its
12 parent corporation, Progress Energy had enough money in the
13 bank to cover all of its construction costs by 116 percent.
14 And that's going to improve because they've cancelled the
15 proposed construction of Hines 5 and 6. Instead, they are
16 going to buy or they contracted to buy 500 megawatts from, off
17 system from Georgia and from other places in the state. So
18 they've dropped what they were going to build in base rates and
19 they've increased what they're going to buy. And you know what
20 happens when you buy it? It comes through the fuel clause or
21 the cost recovery clause and so that is added to the customers'
22 bills.

23 In addition to the increased cash flow you're going
24 to see from the money that's coming in at base rates and
25 increased fuel costs, you're going to find that right now the

1 depreciation on the assets that are in the rate base is going
2 along at around, over \$400 million a year. The company is
3 recovering its investment in its facilities by \$400 million a
4 year. If you don't have a base rate case, you never look at
5 that. They just keep collecting it.

6 CR3, the Crystal River plant, has been fully
7 depreciated, their investment has fully been returned so far.
8 And one of the things they want to do is uprate the worn out
9 meters and things.

10 And time is going up, so I'll cut out my last 14
11 points and just mention the fact that \$83 million of this case
12 is dealing with a transmission line that's 100 miles away from
13 the Crystal River plant. Now what is that all about?

14 I yield the chair to you, Mr. Twomey, or to Mr. Brew.

15 CHAIRMAN EDGAR: Mr. Brew.

16 MR. BREW: Thank you. Good morning. It's apparent
17 that the proposed fuel cost recovery is trying to push a very
18 big square peg into a small round hole, and I would strongly
19 encourage you to look at the full text of the Order 14546 and
20 not just the ordering clause. That order intended to fill a
21 potential gap in order to encourage the utilities to take
22 advantage of short-term opportunities that would arise.

23 Here we're talking about something that's entirely
24 different. This is a planned in advance, substantially long
25 lead time capacity addition. I mean, it walks like capacity,

1 it talks like capacity, it's, you know, it's capacity. It's
2 included in the Ten-Year Site Plan as capacity. It's going to
3 displace purchases for capacity. The transmission line that
4 Mr. McWhirter just referred to is required because of the
5 capacity size that will result from the addition for
6 reliability reasons. You need to look at the entire impact of
7 the project in terms of how we look at the cost recovery.

8 Now much of what this Commission does on the electric
9 side is to smooth out the lumpy effects of generation capacity
10 additions. When you add such an addition, the utility will
11 take accelerated depreciation early and the Commission will
12 normalize that to smooth that out over time. Why? Because you
13 want to match the cost recovery and the benefits of that asset
14 with the customers that will use it over time. Here we've got
15 a proposal that stands that basic ratemaking right on its head.
16 What the company is proposing is to front-load the cost
17 recovery by absorbing all the fuel savings over the first ten
18 years or so, and the customer is only seeing a benefit down the
19 line if what they estimate in the fuel, in the fuel savings
20 actually materializes. So it's taking your basic ratemaking
21 for capacity additions and turning it on its head.

22 One of the second basic things that I want to mention
23 was the company had said there wasn't really any challenge to
24 their estimates, which can hardly be the case. For
25 transmission, the company has a back-of-the-envelope estimate

1 of transmission investments generally. They don't have a plan,
2 they don't have a budget, they don't even actually have a
3 proposal. If they were to bring their estimate for that
4 \$89 million transmission investment into a base rate case, it
5 would have been rejected out of hand for lack of foundation,
6 yet we're expected to pay for it up front in fuel. The same
7 goes for the point of discharge elimination. The company
8 studies are yet to be done. You know, one of the basic
9 problems you have here is that, is that the numbers that you
10 have aren't good numbers, they're just numbers that the company
11 has come up with to fill in the blanks. In order to approve
12 this on any basis, you would need the analysis that the
13 company's testimony only says they're going to do. Thank you.

14 CHAIRMAN EDGAR: Thank you.

15 Mr. Twomey, your time is limited, but you are
16 recognized.

17 MR. TWOMEY: Thank you.

18 Commissioners, a billionaire interviews an
19 accountant, an engineer and a lawyer to succeed him as CEO of
20 his large business. The final question for each is, "What is
21 two plus two?" Somewhat perplexed, the accountant and engineer
22 go through different theories and so forth. In the end they
23 say, each of them says successfully, "We have to confess the
24 answer is 2 plus 2 is four." The lawyer comes in last, he's
25 given the same question. The lawyer looks at the CEO and says,

1 "What do you want it to be?" He gets the job.

2 There's no incorrect answer, I think, in this case.
3 If it's taken, your decision is taken to the Florida Supreme
4 Court, they'll approve whatever you do, in my view, up or down.
5 It doesn't mean there's not a correct decision. And the
6 correct decision, I'd submit to you, is what the customer
7 parties are suggesting; that is, denial of this.

8 This is a base rate decision pure and simple. It is
9 a large expensive plant that will be recovered through base
10 rates, it's a capital project, the company's next rate case,
11 2009 or whenever it is. I gave you the article I handed out
12 showing that \$1.4 million of expenses aren't going to be flowed
13 through, even though customers are still paying those property
14 taxes in base rates. That's part of the deal. If the company
15 has a case in 2009, they'll want a new look at their taxes.

16 So the fuel clause was meant to handle volatile
17 changes in fuel. It wasn't meant to handle huge projects like
18 this. You ought to bring the fuel clause back to what it was
19 always intended to be and not bastardize it by this extreme
20 addition of a plant that's not going to be built, as Mr.
21 McGlothlin said, for a number of years yet. We would urge you
22 to deny the petition. Thank you.

23 CHAIRMAN EDGAR: Thank you.

24 Mr. Wright, briefly.

25 MR. WRIGHT: Yes, Madam Chairman. Thank you very

1 much. I agree with everything said by my consumer colleagues.
2 And following Mr. Walls' structure, I would assert to you that
3 it is undisputed that these are capital costs of a base rate
4 nature. The rest of CR3 is recovered through base rates. It
5 is undisputed that the vast majority of the expenditures will
6 not be in service until at or after the time that the
7 stipulation and settlement from the 2005 rate case expires, and
8 I argue we should not even be here. This is contrary to the
9 stipulation and we think you should reject it. Thank you.

10 CHAIRMAN EDGAR: Thank you.

11 That concludes our opening statements and I think all
12 preliminary matters until we move to witnesses. Ms. Bennett,
13 anything else before we call the first witness other than
14 swearing them in?

15 MS. BENNETT: Nothing else.

16 CHAIRMAN EDGAR: Okay. Let's go ahead and swear in
17 the witnesses as a group. If they are all here, that would be
18 six. One, two, three, four, five, six. Okay. If you'll stand
19 with me and raise your right hand.

20 (Witnesses collectively sworn.)

21 Thank you.

22 Ms. Triplett, your witness.

23 MS. TRIPLETT: Thank you, Madam Chair.

24 Progress Energy Florida calls Daniel Roderick.

25 DANIEL L. RODERICK

1 was called as a witness on behalf of Progress Energy Florida
2 and, having been duly sworn, testified as follows:

3 DIRECT EXAMINATION

4 BY MS. TRIPLETT:

5 Q Will you please introduce yourself to the Commission
6 and provide your address?

7 A My name is Daniel Roderick. My business address is
8 15760 West Power Line Road, Crystal River, Florida.

9 Q Who do you work for and what is your position?

10 A I work for Progress Energy Florida. I'm the Vice
11 President of Nuclear Projects and Construction.

12 Q Have you filed prefiled amended direct and rebuttal
13 testimony and exhibits in this proceeding?

14 A Yes, I have.

15 Q And do you have those testimonies with you?

16 A Yes, I do.

17 Q Do you have any changes to make to your amended
18 direct or rebuttal testimony?

19 A No, I do not.

20 Q If I asked you the same questions in your amended
21 prefiled direct and rebuttal testimony, would you give the same
22 answers that are in your prefiled testimony?

23 A I would.

24 MS. TRIPLETT: We request that the prefiled amended
25 direct and rebuttal testimony be moved into evidence as if it

1 was read in the record today.

2 CHAIRMAN EDGAR: The prefiled direct and rebuttal
3 testimony will be entered into the record as though read.

4 MS. TRIPLETT: Thank you.

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**IN RE: PETITION TO RECOVER THE COSTS OF THE CRYSTAL RIVER
UNIT 3 UPRATE THROUGH THE FUEL CLAUSE**

BY PROGRESS ENERGY FLORIDA

FPSC DOCKET NO. 070052

AMENDED DIRECT TESTIMONY OF DANIEL L. RODERICK

I. INTRODUCTION AND QUALIFICATIONS

1 **Q. Please state your name and business address.**

2 A. My name is Daniel L. Roderick. My business address is Crystal River
3 Energy Complex, Site Administration 2C, 15760 West Power Line Street,
4 Crystal River, Florida 34428.

5
6 **Q. By whom are you employed and in what capacity?**

7 A. I am employed by Progress Energy Florida ("PEF" or the "Company") in
8 the Nuclear Generation Group and serve as the Vice President Nuclear
9 Projects and Construction at Crystal River Unit 3 ("CR3"), PEF's nuclear
10 plant. Formerly, I was Director of Site Operations at CR3.

11
12 **Q. What are your responsibilities as the Vice President Nuclear Projects
13 and Construction?**

14 A. I am an officer of PEF and I am responsible for all aspects of major
15 projects and construction of nuclear generating assets in Florida.

1 Formerly, as director of Site Operations, I was responsible for the safe,
2 efficient, and reliable generation of electricity from CR3 and all plant
3 functions reported to me and were under my supervision.
4

5 **Q. Please summarize your educational background and work experience.**

6 **A.** I have a Bachelor of Science and Master of Science degree in Industrial
7 Engineering from the University of Arkansas and a Senior Reactor
8 Operator License. I have been at CR3 since 1996, serving in my current
9 position as Vice President Nuclear Projects and Construction and, prior to
10 that position, Director of Site Operations, Plant General Manager,
11 Engineering Manager, and Outage Manager, respectively. Prior to my
12 employment with the Company, I was employed for twelve years with
13 Entergy Corporation at its Arkansas Nuclear One plant in Russellville,
14 Arkansas with responsibilities in Plant Operations and Engineering.
15

16 **II. PURPOSE AND SUMMARY OF AMENDED TESTIMONY**
17

18 **Q. Did you previously file direct testimony in this proceeding?**

19 **A.** Yes, I did.
20

21 **Q. What is the purpose of your previously filed direct testimony?**

22 **A.** The purpose of my direct testimony is to support the Company's request
23 for cost recovery through the fuel clause for the replacement and

1 modification of equipment at CR3 to support an increase in reactor power
2 from the nuclear plant.

3 Specifically, I generally describe the Crystal River site and
4 CR 3. I explain the current planned changes to the nuclear plant that are
5 necessary to support the power uprate project. I also generally describe
6 the expected impact of the power uprate on the transmission system and
7 thermal limits on the discharged cooling water that must be addressed to
8 obtain the full benefits of the power uprate project at CR3. I also present
9 the Company's current cost estimates for the project, explain the
10 procedures in place to ensure the costs incurred for the project are
11 reasonable and prudent, and explain the economic need for the project
12 because the project will provide additional, reliable base load capacity to
13 customers while generating substantial fuel savings. I also explained the
14 adverse consequences to the Company and its customers if the CR3 uprate
15 project is delayed.

16
17 **Q. What is the purpose of your amended direct testimony?**

18 **A.** I am amending my direct testimony to explain the division of the CR3
19 uprate project into three phases, with the expected completion of the first
20 phase of the project during the 2007 nuclear refueling outage, followed by
21 additional uprate project phases during the 2009 and 2011 refueling
22 outages, respectively. In my previously filed direct testimony, based on
23 the best information available at the time, the CR3 uprate project was

1 divided into two phases covering the 2009 and 2011 refueling outages.
2 Now, based on additional information and the necessary review and
3 approval of the uprate project by the Nuclear Regulatory Commission
4 (“NRC”) as explained below, the uprate project needs to be in three
5 phases with the first phase beginning during the 2007 nuclear refueling
6 outage. This means PEF’s customers will receive additional nuclear
7 power from the CR3 uprate, and the corresponding fuel savings, earlier
8 than previously planned.

9 When I first filed my direct testimony it was in support of PEF’s
10 Petition for a Determination of Need for Expansion of an Electrical Power
11 Plant, for Exemption from Rule 25-22.082, F.A.C., and for Cost Recovery
12 through the Fuel Clause. The Commission has now granted PEF’s
13 Petition for a determination of need and for exemption from Rule 25-
14 22.082, F.A.C. for the CR3 Power Uprate. Accordingly, in my
15 amendment to my direct testimony to explain the changes to the CR3
16 uprate project, I have omitted my testimony in support of the requests in
17 PEF’s Petition that the Commission has already granted. I include only
18 my previously filed direct testimony, as amended, that has a bearing on
19 PEF’s remaining request in its Petition for recovery of the costs of the
20 CR3 Power Uprate through the Fuel Clause.

21
22 **Q. Why is the Company considering the CR3 power uprate project?**

1 A. The primary reason for this project is to reduce total fuel costs to
2 customers over the extended life of CR3 by increasing low cost nuclear
3 fuel generation and reducing or replacing generation from higher cost fuel
4 power plants or purchased power obligations. The Company has
5 performed studies to find innovative ways to reduce the total fuel cost to
6 the customer by expanding existing nuclear generation and implementing
7 new technological innovations. To illustrate, in preparing for the steam
8 generator replacement and related work during the Company's upcoming
9 2009 nuclear refueling outages necessary to extend the remaining life of
10 the nuclear unit, the Company determined that additional power can be
11 generated through increased efficiencies from technological advancements
12 and additional modifications to accommodate nuclear fuel enrichment at
13 the unit. The result of a power uprate at the nuclear unit from these
14 additional technological efficiencies and fuel enrichment modifications
15 will be increased generation capacity from the Company's lowest cost fuel
16 source. This will allow PEF to replace or reduce higher cost generation
17 from alternative fuel sources, resulting in significant fuel savings for
18 customers.

19
20 **Q. Do you have any exhibits to your testimony?**

21 A. Yes, I have supervised the preparation of or prepared the following
22 exhibits to my direct testimony.

- 1 • Exhibit No. ___ (DLR-1), an aerial view of the Crystal River complex,
2 including CR3.
- 3 • Exhibit No. ___ (DLR-2), a picture of the primary plant configuration for
4 the pressurized water reactor nuclear plant at CR3 that shows the major
5 components of the nuclear reactor and primary coolant system.
- 6 • Exhibit No. ___ (DLR-3), a schematic of the major components in the
7 primary system and the balance of the nuclear plant that shows the major
8 components in the secondary systems, including the main turbine and
9 main generator.

10 All of these exhibits are true and accurate.

11

12 **Q. Please give an overview of the Company's presentation in this**
13 **proceeding.**

14 **A.** In addition to my own testimony, the Company will present the amended
15 testimony of the following witnesses:

- 16 • Mr. Samuel Waters, who will provide testimony regarding the significant
17 fuel savings that will be realized from the CR 3 power uprate project. Mr.
18 Waters will further generally describe the Company's existing facilities
19 and other supply resources and the Company's Demand-Side Management
20 resources (DSM).
- 21 • Mr. Javier Portuondo, who will generally discuss the costs of the CR3
22 power uprate project and the anticipated fuel savings including the net
23 present value of the benefit to customers. Mr. Portuondo will further

1 explain that the CR3 power uprate project costs were not anticipated in the
2 Company's last base rate proceeding and are not recognized in the
3 Company's base rates. Finally, Mr. Portuondo will explain that the
4 significant fuel savings the Company's customers will realize from the
5 project justify recovery of the power uprate project costs by the Company
6 through the Fuel and Purchase Power Cost Recovery Clause ("Fuel
7 Clause").
8

9 **Q. Please summarize your amended testimony.**

10 **A.** The CR3 power uprate project is an innovative application of
11 technological advancements and efficiencies during existing planned
12 outages at CR3 to obtain increased nuclear fuel generation capacity. The
13 result of this increased production with low cost nuclear fuel will be the
14 reduction in or replacement of higher cost fossil fuel and purchased power
15 generation resources, yielding substantial fuel savings at a net savings to
16 the cost of the project for customers. The power uprate will increase the
17 level of nuclear production in the fuel supply mix on PEF's system,
18 increasing fuel diversity for PEF and the State of Florida. The CR3 power
19 uprate project represents a unique opportunity to increase fuel diversity
20 and reduce the reliance on fossil fuel generation at no net cost to
21 customers, but rather at a net savings to customers.
22

III. THE CRYSTAL RIVER SITE AND CR3 UNIT

1
2
3 **Q. Please describe the Crystal River site.**

4 **A.** The Crystal River site is a 4,700 acre site located in Citrus County, Florida
5 that contains four coal-fired generating units, one nuclear generating unit,
6 and related support facilities, such as fuel transportation and storage
7 facilities. The site generators are connected to a transmission substation.
8 The Crystal River substation contains both 230 kv and 500 kv
9 transmission lines that supply power generated at the site to the
10 Company's transmission system. The four coal-fired and one nuclear
11 power units at the site generate approximately 3,200 MWe. Exhibit No.
12 ___ (DLR-1) is an aerial photograph that accurately depicts the Crystal
13 River site, including CR3.

14
15 **Q. Please describe the nuclear generating unit at the Crystal River site.**

16 **A.** CR3, the nuclear generating unit, is a B&W pressurized water reactor that
17 includes a Primary and Secondary System. The Primary System is located
18 within the containment building and includes the reactor vessel,
19 pressurizer, steam generators, primary coolant system, and related
20 equipment. Exhibit No. ___ (DLR-2) is a picture of the major components
21 of the Primary System, including the nuclear reactor and the primary
22 reactor coolant system.

1 The Primary System is a closed loop system. The nuclear reactor
2 produces heat that eventually is turned into steam then into electricity.
3 The heat is removed from the reactor by water in the primary coolant
4 system that is continuously pumped around the Primary System. Heat
5 transfers from the fuel cells to the surrounding metal fuel cladding which
6 in turn heats the water flowing between and around the fuel rods. The
7 heated water then travels from the core through pipes to the steam
8 generators. In the steam generators, heat is transferred from the reactor
9 primary coolant system to the physically separated secondary coolant
10 system producing steam in the secondary system. The Primary System
11 operates at about 600 degrees F and 2150 PSI. The high pressure prevents
12 the water in the primary system from turning to steam.

13 The secondary water coolant system is under less pressure,
14 operating at over 450 degrees F and 850 PSI, and when the water in the
15 secondary coolant system is heated it turns to steam, which turns the
16 turbine that powers the generator. The steam exiting the turbine is then
17 condensed to water. The water is pumped back to the steam generators by
18 a series of pumps and heat exchangers where it is once again converted to
19 steam, thereby completing the cycle. Exhibit No. ____ (DLR-3) is a
20 schematic of the major components of the Primary and Secondary
21 Systems, including the main turbine and main generator. It also shows the
22 electricity produced in the generator passes through some transformers
23 before being passed on to the switchyard at Crystal River, and then onto

1 the transmission grid. The Company's transmission system is part of the
2 peninsular Florida interconnected electrical grid of all transmission-
3 owning electric utilities in the State and also part of the interface with the
4 transmission facilities of utilities in the Southeastern United States at the
5 Florida border.

6 CR3 was the third generating unit constructed at the site and it
7 currently produces about 900 MWe. CR3 provides power into the 500 kv
8 transmission system connected to the Crystal River site and uses the 230
9 kv system at the site for on-site backup power. CR3 supplies its own
10 power needs during normal operation.

11 IV. THE CR3 POWER UPRATE PROJECT

12
13
14 **Q. What is the CR3 power uprate project?**

15 **A.** The power uprate project for CR3 increases the electrical power output
16 from the plant from about 900 MWe by approximately 180 MWe to 1,080
17 MWe. The total cost for the uprate project is estimated at \$381.8 million.
18 Of this amount, approximately \$250 million is for the power uprate itself.
19 The additional costs address anticipated modifications to the transmission
20 system to handle the additional power, estimated at \$89 million, and
21 anticipated modifications to address Point of Discharge ("POD") issues
22 caused by the additional heat generated by the power increase, which are
23 preliminarily estimated at \$43 million.

1 The power uprate project involves increasing the power or thermal
2 MWs produced in the reactor core by making modifications to the design
3 to allow for use of more highly enriched fuel. The costs associated with
4 this are for making the physical changes needed to allow for use of this
5 more highly enriched uranium in a safe and economical fashion, not the
6 fuel itself. In addition, some modifications to supporting equipment are
7 necessary to support the additional heat from the power increase to
8 accommodate all designed accident conditions in the plant. The additional
9 heat will raise the temperature exchange between the Primary and
10 Secondary Systems and create more steam to turn the turbines.

11 In the design of these plants in the 1960's, the analytical modeling
12 that exists today was not available, and the result was that the best designs
13 of the time over-compensated for the available computer modeling with
14 built-in assumptions having very large safety margins to ensure adequate
15 protection was in place to accomplish all intended functions. Many of
16 these initial safety margins, given today's analytical engineering tools and
17 advanced testing capabilities, allow for an increase in reactor power with
18 limited physical primary plant changes. Most of these primary system
19 changes may involve increasing Emergency Cooling Pump flow rates and
20 the setpoints for actuation of safety systems.

21 The major modifications resulting from the power uprate involve
22 the secondary system specifically, the turbine generator set, which has
23 three parts, two low pressure and one high pressure rotors, and the

1 generator, plus their supporting systems and equipment. The secondary
2 system must be modified to accept the additional heat produced by the
3 reactor core. This is accomplished by increasing the secondary system
4 water flow to the steam generators. Increasing the flow requires larger
5 pumping capacity than currently exists, which requires modification or
6 replacement of some existing pumps and heat exchangers. A detailed
7 pinch point study for these flows will define which pumps and motors will
8 need to be upgraded or replaced based on the lowest cost required to
9 achieve the necessary secondary system water flow.

10 In addition to the reactor power increase, design improvements to
11 some major system components will allow for increased efficiencies,
12 providing additional steam power beyond that obtained from the more
13 enriched fuel. These design improvements to obtain the steam efficiencies
14 are factored into the CR3 power uprate costs. For example, when the
15 steam turbine high pressure rotor was designed in 1962, a multi-piece
16 assembly was made. These multi-piece assemblies cause drag on the
17 system, but better technology did not exist at the time. Since then, in the
18 late 1990's, technological advancements have resulted in a single piece
19 rotor blade that has less drag and, therefore, provides increased megawatt
20 output for the same steam input.

21 The CR3 power uprate project, including all modifications and
22 technological advancements, will generate an additional 180 MWe by the
23 end of 2011. The power uprate project will make CR3 the largest single

1 generating unit in Florida at 1,080 MWe. On April 25, 2007, we
2 requested a licensed power change for CR3 from the NRC for the Phase 1
3 uprate project that addresses the Measurement Uncertainty Recapture
4 ("MUR") and we have met with the NRC to develop a plan to gain
5 approval in November 2007.

6
7 **Q. Has a power uprate of this kind ever been performed on a B&W**
8 **pressurized water reactor?**

9 **A.** While the innovative power uprate planned for CR3 has not been
10 undertaken at any other B&W designed plant, similar power uprates have
11 been accomplished and approved by the NRC at other nuclear plants
12 designed by Westinghouse and General Electric. Initial discussions with
13 the NRC indicate that a similar process to the one used for licensing power
14 uprates at Westinghouse and General Electric designed plants would be
15 used to license CR3 to the additional power level.

16
17 **Q. What is the likelihood that the NRC will approve the license extension**
18 **for CR3?**

19 **A.** The power uprate project assumes that the ongoing activities to renew the
20 license of CR3 will be successful and that the license now due to expire in
21 2016 will be extended to 2036. License renewal of nuclear power plants is
22 an ongoing nuclear industry process that requires technical information
23 submitted by the applicant and approval by the NRC for the operating

1 license to be extended for 20 years. License renewals have been granted
2 for Progress Energy's Robinson and Brunswick Units 1 and 2 plants. In
3 addition, four of the seven plants of a similar design to CR3 have already
4 received approval for license renewal. No license extensions for plants
5 have been rejected after a detailed NRC review and no utility has been
6 told that it would not be able to renew its license. As a result, there is a
7 high likelihood that the license renewal for CR3 will be granted by the
8 NRC and therefore the 2036 date used in the economic model for the
9 power uprate can be achieved.

10
11 **Q. Are there any environmental benefits from the CR3 power uprate**
12 **project?**

13 **A.** Yes, there are. The CR3 power uprate will use nuclear fuel, which is the
14 cleanest fuel source on PEF's system. During normal operations, there are
15 no greenhouse gas emissions and no emissions of other pollutants
16 common to other fuel sources for power production such as carbon
17 monoxide, sulphur dioxide, aerosols, mercury, nitrogen oxides, and
18 particulates or photochemical smog. Further, because the CR3 power
19 uprate will displace higher cost fossil fuels with nuclear fuel there likely
20 will also be a reduction in the greenhouse gas and other emissions from
21 fossil fuel resources. From an environmental viewpoint, the CR3 power
22 uprate project is an attractive means of obtaining cost-effective generating
23 capacity.

1

2

Q. What is the schedule for the CR3 uprate project?

3

A. The CR3 power uprate project is planned for the scheduled refueling outages for CR3 in 2007, 2009 and 2011. Phase I, the MUR, is being installed during the 2007 refueling outage. The MUR is a series of engineering analyses to measure the "secondary heat balance" with improved accuracy through modifications to plant instrumentation and associated calculations. The improved accuracy in measuring the secondary heat balance, however, allows the rated thermal power to be increased by 12 MWe. The cost estimate for the MUR is about \$6 million. NRC approval of the MUR is required but the process for obtaining such approval is well-documented because the MUR has been successfully completed at a number of nuclear plants throughout the nation.

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The MUR was originally part of the work contemplated for the 2009 refueling outage. As a result of further, detailed evaluations of the CR3 uprate project and meetings with the NRC and industry operating experiences, PEF and the NRC agreed that PEF should separate the MUR away from the major turbine and steam generator work that was taking place in 2009. For planning purposes the PEF project team then made Phase 1 the MUR to be installed in the fall of 2007, followed in 2009 by the remaining steam efficiencies described below as Phase 2, and then the actual extended power uprate in Phase 3 in 2011.

1 Phase 2 of this project is a series of improvements to the efficiency
2 of the secondary plant also known as the Balance of Plant ("BOP"). The
3 Company currently anticipates, for example, that all or at least part of the
4 turbine and electrical generator replacement can be completed during the
5 BOP phase. The BOP phase is scheduled concurrently with the steam
6 generator replacement during the 2009 refueling outage. Other
7 modifications and replacements will be evaluated for inclusion in the 2009
8 refueling outage if the outage is not extended, appropriate resources are
9 available to support the changes, and the impact of further modifications
10 or replacements for the power uprate project on the duration of the
11 scheduled 2011 refueling outage can be minimized.

12 The changes during the BOP phase do not increase the licensed
13 output of the nuclear reactor but they will improve the efficient use of that
14 output to produce a higher electrical output. The estimated increase in
15 output is 28 MWe from the BOP phase.

16 The full power uprate is scheduled for the 2011 refueling outage,
17 when the remaining work necessary to provide the full 180 MWe power
18 uprate, called the Extended Power Uprate ("EPU") phase, will be
19 completed. The BOP phase improvements will be sized to support the
20 EPU. The EPU maximizes the output of the reactor and the BOP to their
21 ultimate capacity.

1 The modifications and equipment changes necessary to support the
2 CR3 uprate will be scheduled to minimize any plant outage time while
3 assuring that appropriate resources are available to support the changes.
4 To meet the schedule and ensure that the CR3 uprate project is performed
5 during the scheduled outages, PEF has already ordered equipment and
6 material.

7
8 **Q. Will the CR3 uprate project require changes to other units or the
9 Crystal River site?**

10 **A.** No. All changes necessary to generate the full power uprate are internal to
11 the CR3 power block and switchyard. No changes to the Company's
12 current plant siting are required. However, modifications to the
13 transmission system and to address POD issues to accommodate the full
14 180 MWe power uprate may be necessary.

15
16 **Q. Why may changes to the current transmission system be necessary as
17 part of the CR3 power uprate project?**

18 **A.** After the power uprate project is complete, CR3 will become the largest
19 power generator on the Company's system. Changes may be necessary to
20 the transmission system to accommodate the 1,080 MWe CR3 will
21 generate following the uprate project. The Company is studying and will
22 continue to study the impacts of this additional power to the transmission
23 system and what modifications, if any, are necessary. The final study will

1 not be completed until closer to the time that the power uprate project
2 commences because the transmission system changes periodically with
3 transmission additions or modifications that are occasioned by other
4 generators and users on the interconnected transmission grid, particularly
5 within peninsular Florida, but also extending to the interface with the
6 southeastern United States utility transmission systems. Current cost
7 estimates of \$89 million are preliminary, based on the existing
8 transmission system and known transmission projects that are underway.
9 The Company believes these cost estimates are reasonable and sufficient
10 for the Company to proceed with the project. Refinements to the cost
11 estimates, however, will be made over time to account for any changes to
12 the transmission system or changes in labor, commodity, and land market
13 conditions.

14
15 **Q. What changes are anticipated to address the POD issues?**

16 **A.** The power uprate from the project will generate additional heat and steam
17 thereby increasing the water temperature of the cooling water for the CR3
18 unit. This additional heat will likely cause the Company to exceed the
19 thermal permit requirements for the cooling water discharge. An optimal
20 solution has not yet been identified but we have preliminarily assumed an
21 estimated cost of \$43 million to address the POD issues at the discharge
22 canal associated with the uprate project. The Company will evaluate all
23 reasonable options before making a final determination of how to address

1 the POD issue. Whatever modifications are necessary to address the
2 thermal cooling water discharge limit, however, will accommodate the full
3 power generated by CR3.
4

5 **Q. Is the POD impact the only environmental issue associated with the**
6 **CR3 power uprate?**

7 **A.** Yes, we believe it is. CR3 is located at the Crystal River Energy Complex
8 and is currently being operated under license from the NRC and necessary
9 federal and state permits. The environmental issues associated with the
10 Crystal River site have therefore been addressed and resolved under the
11 prior license and permits. Because the CR3 power uprate project is
12 limited to the CR3 power block and switchyard the project's impact on the
13 site is minimal and most if not all of the current permit requirements for
14 the operation of CR3 will not be affected by the power uprate project. The
15 potential impact to the environment that we see from the project is the
16 effect of the additional heat from the power uprate on the temperature of
17 the discharge water.
18

19 **Q. Are the costs of the power uprate project reasonable and prudent?**

20 **A.** Yes. The Company will conduct competitive bids for the purchase of
21 major components for the power uprate project. This process involves a
22 detailed review of designs and pricing to make sure the best quality for the
23 price is obtained. In addition, benchmark comparison to power uprates

1 performed at other plants in Progress Energy's system will be made to
2 factor in the latest experience gained from those uprates. By incorporating
3 a competitive bidding process and relying on efficiencies achieved from
4 experience, the Company will ensure that the power uprate costs are
5 reasonable and prudent.

7 V. CONCLUSION

8
9 **Q. Please summarize the benefits of the CR3 power uprate project.**

10 **A.** By undertaking and completing the CR3 power uprate project PEF will
11 generate substantial fuel savings for its customers that will be a significant
12 benefit to them and the Company. The Company will also increase fuel
13 diversity to its benefit and the benefit of the state, all by providing
14 additional, reliable base load generation from an environmentally friendly
15 source. No additional base load generation source can provide additional,
16 reliable electrical power at a net fuel savings to customers comparable to
17 that provided by the CR3 power uprate project. We urge the Commission
18 to approve the cost recovery of the project through the Fuel Clause.

19
20 **Q. Does this conclude your testimony?**

21 **A.** Yes, it does.
22

**IN RE: PETITION TO RECOVER THE COSTS OF THE CRYSTAL RIVER
UNIT 3 UPRATE THROUGH THE FUEL CLAUSE**

BY PROGRESS ENERGY FLORIDA

FPSC DOCKET NO. 070052

REBUTTAL TESTIMONY OF DANIEL L. RODERICK

I. INTRODUCTION AND QUALIFICATIONS

1 **Q. Please state your name and business address.**

2 A. My name is Daniel L. Roderick. My business address is Crystal River
3 Energy Complex, Site Administration 2C, 15760 West Power Line Street,
4 Crystal River, Florida 34428.

5
6 **Q. Have you previously submitted testimony in this docket?**

7 A. Yes, I filed both Direct and Amended Direct Testimony in this docket to
8 support the Company's request for cost recovery through the fuel clause
9 for the replacement and modification of equipment at Progress Energy
10 Florida, Inc.'s ("PEF" or the "Company") nuclear unit at Crystal River
11 ("CR3") to increase reactor power from the nuclear plant (the "Uprate
12 Project").

13

14 **Q. Have any of your duties changed since filing your Amended Direct**
15 **Testimony?**

1 A. No.

2
3 **II. PURPOSE OF REBUTTAL TESTIMONY**

4
5 **Q. Have you reviewed the intervener testimony of Daniel J. Lawton and**
6 **Patricia W. Merchant, filed on behalf of the Office of Public Counsel**
7 **(“OPC”), and of Jeffrey Pollock, filed on behalf of the Florida**
8 **Industrial Power Users Group (“FIPUG”)?**

9 A. Yes.

10
11 **Q. What is the purpose of your rebuttal testimony?**

12 A. The purpose of my rebuttal testimony is to respond to their uninformed
13 arguments that the Uprate Project is not an innovative project and that the
14 work necessary to address point of discharge (“POD”) issues and
15 transmission upgrades are not part of the Uprate Project. Simply put, the
16 Uprate Project is innovative for the CR3 unit design and the estimated
17 POD and transmission costs must be incurred as a result of and only
18 because of the Uprate Project. Further, I will address intervener witness’
19 misplaced claims that the Uprate Project cost estimates are too preliminary
20 by explaining that they use accepted engineering estimating methods
21 based on the best available information.

1 **III. THE INNOVATIVE UPRATE PROJECT**

2

3 **Q. On page 11 of his testimony and using Exhibit JP-2, Mr. Pollock**
4 **argues that the pending CR3 Uprate is not new and innovative. To**
5 **begin with, do you know if Mr. Pollock has experience in the**
6 **operation of or engineering work on an operating nuclear plant?**

7 **A.** I understand from his deposition testimony that he is not a nuclear
8 engineer, nor does he have any operational experience to draw the
9 conclusions that he does regarding his Exhibit JP-2.

10

11 **Q. Do you agree with his argument that the Uprate Project is not new**
12 **and innovative?**

13 **A.** No. Mr. Pollock's assertion that the CR3 uprate is not innovative, by
14 simply referring to a list of Nuclear Regulatory Commission ("NRC")
15 approved nuclear uprate projects in his Exhibit JP-2, is misleading and
16 incorrect. CR3 is a Babcock and Wilcox ("B&W") designed reactor
17 system that is unique, in operating methods, physics, technology, and
18 physical constraints, from any other plant design. While the NRC
19 administrative process of approving a power uprate has been used for
20 other nuclear plant designs, no operator of a B&W plant has ever made an
21 extended power uprate such as the one contemplated in the Uprate Project.

22 Of the uprate projects included in Exhibit JP-2, only TMI-1 (on
23 page 4 of 8) and CR3 (on page 7 of 8) are B&W designs. More

1 importantly, both uprates reflected here were minor (less than 1.3%)
2 uprates. The technical and analytical reviews necessary to perform an
3 extended uprate on these B&W type units have never been performed.
4 The innovations are the solutions sets necessary to modify the B&W plant
5 designs to make an extended uprate.

6 Additionally, of the uprate projects identified in Exhibit JP-2, only
7 one plant, Clinton Power Station (page 6 of 8) qualifies as a power uprate
8 with the same percentage increase in megawatt production (20%) as the
9 CR3 Uprate Project will achieve. Thus, the size of the Uprate Project also
10 sets it apart from all but one of the previous NRC-approved uprate
11 projects.

12 Simply put, then, the Uprate Project is a unique, innovative uprate
13 project because it involves a B&W plant design and an extended and
14 significant power increase that sets the Uprate Project apart from other
15 uprates while providing substantial fuel savings to the customer.

17 IV. UPRATE PROJECT TRANSMISSION AND POD COSTS

18
19 **Q. Intervener Witnesses dispute that the Uprate Project should include
20 transmission upgrades and POD costs. Do you agree?**

21 **A.** No. Intervener Witness Lawton, for example, refers to my testimony that
22 the transmission costs are required because CR3 with the Uprate Project
23 will be the single largest generation unit on the Florida grid. He claims

1 this means the transmission costs estimated in my direct testimony are
2 needed for transmission reliability and, therefore, should not be included
3 as part of the Uprate Project costs the Company seeks to recover through
4 the Fuel Clause. (Lawton Test., pp. 37-38). Mr. Lawton ignores the direct
5 link between the Uprate Project and the transmission costs. The only
6 reason for PEF to incur these transmission costs is if CR3 becomes the
7 largest, single generation unit on the Florida grid, and that occurs only as a
8 result of the CR3 Uprate. If it were not for the CR3 Uprate, PEF would
9 not incur these transmission costs at all. The estimated transmission costs
10 included in my Amended Direct Testimony are, therefore, directly linked
11 to the CR3 Uprate and properly included as costs eligible for cost recovery
12 through the Fuel Clause along with the other Uprate Project costs.

13 Likewise, the POD cost estimates are directly linked to the CR3
14 Uprate. But for the CR3 Uprate there would be no additional increase in
15 the discharge water temperature that must be addressed. The costs
16 necessary to address this POD issue are therefore also necessarily a part of
17 the CR3 Uprate and should be included with the other costs for which
18 recovery is sought through the Fuel Clause.

19
20 **Q. Intervener Witnesses Merchant and Lawton both argue that the**
21 **transmission and POD cost estimates are too preliminary for fuel**
22 **clause recovery. Can you please explain the basis of these cost**
23 **estimates?**

1 A. Yes. To begin with, the cost estimates for potential transmission
2 upgrades were developed on a reasonable engineering basis, using the best
3 available information to the Company. The transmission cost estimates
4 were derived from a realistic transmission scenario, which was included as
5 a placeholder, based on the installation or upgrade of about 35 miles of
6 230KV lines in northern Florida to gain system flexibility for transporting
7 additional power if CR3 was forced off line. The transmission scenario
8 includes potential upgrades such as additional transformation, additional
9 transmission line capacity, and other associated modifications. The
10 transmission cost estimate was based on PEF's standard per-mile cost
11 estimates, which are regularly updated and adjusted for expected price
12 increases, taking into account the most recent transmission construction
13 project costs of a similar type and location. This estimation method is an
14 accepted engineering practice for transmission cost estimates and it is
15 consistent with utility industry practice.

16 Engineering studies are in fact on-going, however, and these cost
17 estimates may change. But we are comfortable at this point that the
18 transmission cost estimates are reasonable.

19 Likewise, PEF's estimate for the POD cooling solution is
20 reasonable and based on the best available information. The POD cost
21 estimate is based on the cost of the permanent cooling towers installed in
22 1993. This cost was then inflated to 2011 dollars and adjusted based on
23 the expected needed flow rate to offset the uprate impact given the actual

1 flow rate of the original cooling towers. In general, PEF expects to need
2 some form of additional cooling to offset the thermal impact of the CR3
3 Uprate. This will likely include some type of cooling tower or cooling
4 tower upgrade, as well as additional pumping capacity to increase the total
5 flow rate of cooling water. PEF's POD cost estimate has taken these
6 factors into account using PEF's most recent, applicable experience, and
7 updating those costs to account for expected price increases. PEF's
8 estimation of the POD costs is based, then, on reasonable, engineering
9 methods applicable to the POD issue.

10 As the Uprate Project progresses PEF will refine these cost
11 estimates. But, again, we are comfortable based that the cooling solution
12 cost estimate is reasonable.

13
14 **Q. Intervener Witness Merchant, on page 4 of her testimony, states that**
15 **the project costs have increased \$68 million since the filing of the**
16 **amended testimony in this case. Do you agree with her argument?**

17 **A.** No. The estimated costs for the Uprate Project have not increased since
18 the filing of the amended testimony in this proceeding. Ms. Merchant is
19 comparing the cost estimates provided in my amended direct testimony to
20 a number provided by Mr. Portuondo in response to a question about the
21 estimated revenue requirements. I understand the cost figures provided by
22 Mr. Portuondo include Allowance for Funds Used During Construction
23 ("AFDUC"). The cost estimates I provided in my amended direct

1 testimony are estimates for the actual costs the Company will pay for the
2 Uprate Project, excluding AFUDC, and those cost estimates have not
3 increased. Ms. Merchant is comparing apples and oranges by comparing
4 these two figures.

5
6 **Q. On page 17 of her testimony, Intervener Witness Merchant claims**
7 **that PEF's cost estimates are best case scenarios. Do you agree?**

8 **A.** No. The estimated costs for the Uprate Project were developed using a
9 reasonable engineering methodology which estimates a best case, worst
10 case, and base case scenario. PEF did not use the lowest possible cost
11 estimates, or best case, for the project costs. Rather, PEF chose a
12 reasonable, base case scenario, which represented a reasonable estimate
13 within the spectrum of cost estimates. This methodology is routinely used
14 by PEF in estimating project costs.

15
16 **Q. Does this conclude your rebuttal testimony?**

17 **A.** Yes.

1 BY MS. TRIPLETT:

2 Q Do you have a summary of your amended prefiled
3 testimony?

4 A I do.

5 Q Will you please summarize your testimony for the
6 Commission?

7 A Thank you. Many of you, I know, have been to Crystal
8 River. I've seen some of you there on tours, and so I'm
9 stepping into your world now. So I appreciate the time to talk
10 to you about this project a little bit.

11 Our Crystal River 3 Unit is a pressurized water
12 reactor of Babcock & Wilcox design. It is one of only five
13 sites in the United States that has that technology that it
14 uses. It's a, it's a unique design. It is something that is a
15 smaller fleet of the 103 nuclear reactors in the United States.

16 The output that we're talking about here is to
17 increase our power uprate from 900 gross megawatts to
18 approximately 1,080 megawatts. The total cost of our project,
19 as it has been from my initial testimony, is 381.18, excuse me,
20 \$381.8 million before allowance for funds used during
21 construction.

22 The Crystal River 3 power uprate project is a very
23 innovative application of several technological advancements
24 and thermal efficiencies within the existing planned outages
25 that are already scheduled at the Crystal River 3 plant to

1 obtain increased nuclear fuel generated capacity. The primary
2 reason for considering this project is to lower total fuel
3 costs to our customers over the extended life of
4 Crystal River 3. This is accomplished by increasing the
5 generation from nuclear fuel and reducing or replacing the
6 generation of higher cost fuel from other generating sources.

7 The Crystal River 3 uprate will also provide for a
8 greater fuel diversity by increasing safe nuclear generation on
9 Progress Energy Florida's system without greenhouse gases.

10 This project will be implemented in three phases.
11 The first phase of the project is what we call our measurement
12 uncertainty recapture or the MUR project which we are
13 installing currently this fall at Crystal River 3. Those
14 expenditures -- based on our anticipation of the outcome of
15 this, we already went ahead to try to capitalize on those
16 outages that we have planned. That will bring additional
17 megawatts into the, into the system earlier, about
18 12 megawatts.

19 The second phase of our, of our uprate that involves
20 innovation is to really try to ensure the most modern
21 technology advances that we can put into the plant in the 2009
22 outage, and we'll generate an additional 28 megawatts in that
23 uprate.

24 The third phase, which will complete the full power
25 uprate, is scheduled to be completed in 2011. Many of the

1 improvements that are necessary for each of those outages have
2 long lead time items. I'll give you an example. To have the
3 turbine rotors that we need in 2009, the lead time on those is
4 30 months. So the expenditures for those rotors start now. We
5 have to buy the steel, we have to fabricate. It's not
6 expenditures that would happen later in the project life.

7 The, because the uprate at Crystal River 3 will
8 generate 1,080 megawatts at the end of this, the current single
9 largest plant that if we lost it in our system in Florida is
10 the St. Lucie Nuclear Power Plant. After the uprate that would
11 move to this side of the state. And while one may wonder why
12 that would cause transmission issues in the system, what we're
13 required to do is to be able to withstand the largest single
14 load being lost in the state and still keep the lights on for
15 everyone in the state. As you drop a very large load like
16 that, the system has to be able to respond very quickly to that
17 load, and that's why we ensure as part of our process that that
18 can be accomplished with Crystal River becoming the largest
19 single generating unit in the state. These requirements are
20 very controlled within state regulatory bodies and agencies,
21 and we're complying with those requirements as part of this
22 project.

23 These reasonable costs have been estimated at
24 \$89 million as a bounding estimate for, for what we think the
25 most bounding solution would be. We've never decided that is

1 the solution we will use. What we have tried to provide you
2 with is something that would bound the transmission cost at
3 this point in time.

4 The power uprate from this project will also generate
5 additional heat and steam, thereby increasing water temperature
6 of the cooling water discharged from the Crystal River 3 Unit.
7 This additional heat will cause the company to exceed the
8 existing thermal permits for cooling water discharged into the
9 Gulf of Mexico. As a result, we've had to find technical
10 solutions to reduce that water temperature to stay within what
11 our current limits are for discharge into the Gulf of Mexico.
12 Those estimated costs of \$43 million will address these point
13 of discharge temperatures to minimize any environmental impact
14 and basically stay within what our current discharge permit
15 limits are at Crystal River's site.

16 You may hear testimony from Intervenor witnesses that
17 Progress Energy's, Progress Energy Florida's cost estimates,
18 that the cost estimates have changed. I'll tell you, because
19 we worked on those estimates very hard to try to ensure that we
20 had the best estimates we could provide that would give a
21 bounding, reasonable cost for the project based on engineering
22 technology estimates and give what would be the minimal amount
23 of megawatts that we would produce. Those estimates that we
24 have provided have not changed. We have held those estimates
25 from day one. Our studies that we have have concluded that

1 many of our assumptions that we made originally are correct.
2 Some individual prices have changed, some of them went up, some
3 of them went down, but we still stand by the original number
4 that we provided.

5 The Intervenor witnesses have not analyzed these cost
6 estimates and have not offered any estimates of their own to
7 refute them. And as the study has progressed, the total
8 project cost confidence increases that we have as we have
9 gotten further along in the study to completion.

10 Some of the Intervenor witnesses also challenge
11 whether the Crystal River 3 uprate is an innovation. Because
12 an uprate of this size has never been completed on a B&W type
13 generating unit, the Crystal River 3 Unit uprate project is
14 indeed innovative, and we have resolved many technical
15 challenges throughout this process and provided new technology
16 that does not exist for a B&W designed reactor.

17 To conclude, Progress Energy Florida's Crystal
18 River 3 uprate project will increase the nuclear generation at
19 a net significant savings, not net cost to the customers. It
20 will be beneficial for Progress Energy Florida's customers,
21 which was our charter when we started trying to look at this
22 project. It's very beneficial to our environment and in the
23 fuel diversity mix that we have here in the state. These kinds
24 of innovations need your support as a Commission, and that's
25 what we're requesting from you today. That concludes my

1 comments.

2 MS. TRIPLETT: Thank you, sir.

3 We tender Mr. Daniel Roderick for cross-examination.

4 CHAIRMAN EDGAR: Thank you.

5 Ms. Christensen.

6 CROSS EXAMINATION

7 BY MS. CHRISTENSEN:

8 Q Good morning, Commissioners. Good morning,
9 Mr. Roderick.

10 The first series of questions I would like to ask you
11 are regarding the MUR project.

12 A Okay.

13 Q Would you agree that PEF has estimated the cost of
14 the MUR phase of the CR3 uprate at \$6 million?

15 A That's correct.

16 Q Okay. And of that \$6 million, the engineering costs
17 for preparing the analytical work for the NRC is approximately
18 \$4 million; is that correct?

19 A I'm not exactly for sure of that number, but it's
20 close to that.

21 Q Okay. And that \$4 million for analytical preparation
22 was based on a firm fixed price or contract price.

23 A That's correct.

24 Q And PEF has a firm fixed contract price for the
25 fabrication of the spool piece and the instrumentation; is that

1 correct?

2 A That's correct. Uh-huh.

3 Q And what portion of the \$6 million for the MUR cost
4 is attributable to the spool piece and the instrumentation?

5 A It's just over \$1.1 million.

6 Q And as of May 2007, am I correct to understand that
7 PEF was still working on its labor contract with the cost not
8 to exceed provisions; is that correct?

9 A Yes, ma'am. That contract has since been finalized
10 and we have that now.

11 Q Okay. And do you know what the dollar cap is on that
12 labor contract?

13 A I know the total project cost, when we included that
14 in to have a total fixed price, is still at \$6 million. So it
15 was within our estimate.

16 Q Okay. And that contract has a cap on it; am I
17 correct in understanding that?

18 A It's a fixed price contract. Yes.

19 Q Okay. And have you submitted the MUR for approval
20 with the NRC?

21 A Yes, we have.

22 Q Okay. And do you know when you would expect NRC
23 approval for that MUR phase?

24 A We're meeting with the NRC regularly right now. We
25 have gotten some comments from them, which is very normal in

1 that process. We're answering those comments right now, and
2 we're expecting to have approval back before the startup of the
3 outage coming out this fall.

4 Q And what date would that be?

5 A I believe the date right now is October. It's the
6 second week of October.

7 Q Okay. And now is that a fixed firm date from the NRC
8 for approval?

9 A I would never commit for an agency. That is what
10 they have told us they're working towards.

11 Q Okay. And if the MUR request is not approved by the
12 November outage or the end of the scheduled outage, would it be
13 correct that PEF would be required to stay at the current power
14 levels?

15 A That's correct.

16 Q Okay. And the cost savings analysis for the MUR
17 project assumes availability of that phase at the end of the
18 2007 outage; is that correct?

19 A We -- in the original numbers that we used before we
20 split the phases out we had not included it, but in the latest
21 analysis I believe we have.

22 Q Okay. And --

23 A We would get the megawatts, about 12 megawatts, we
24 would get those at the end of the year.

25 Q Okay. And so it would follow that if the NRC

1 approval is delayed, those cost savings would be affected by
2 the amount of time that the approval was delayed.

3 A That's correct. Uh-huh. As would the recovery be
4 delayed.

5 Q Now regarding the uranium fuel cost, referring to
6 your response to OPC Interrogatory Number 17, PEF responded
7 that it anticipates using additional quantities of slightly
8 more enriched, excuse me, uranium to provide the energy
9 necessary for the uprate; is that correct?

10 A That's correct.

11 Q Okay. And you have stated previously that the cost
12 savings analysis assumed that the cost of the more highly
13 enriched uranium and the current uranium is at the same cost
14 per megawatt; is that correct?

15 A Correct.

16 Q And that assumption is built on the fact that you
17 believe you'll be getting extra megawatts out of the more
18 highly enriched --

19 A Yes. How, how we calculate the price per megawatt is
20 basically you take the fuel, total cost of the fuel, which will
21 go up because you're buying more uranium, but your divisor on
22 the bottom to get to a cost per megawatt, you'll add more
23 megawatts on the bottom so the number will come out within --
24 and for the purposes of the economic analysis we took out to
25 two decimal spots. And when you look at that, it doesn't

1 really have a meaningful change at all when you go out two
2 decimal spots and round it off. And in Mr. Waters' testimony
3 basically that analysis rounds out to two decimal spots. So
4 that's why we're saying it's effectively the same cost from
5 what our analysis is providing.

6 Q Okay. So if I am understanding you correctly, you
7 would agree that you'll be spending more for the total fuel
8 load; correct?

9 A That's correct.

10 Q And in your, built in your assumption is that there
11 is no material difference in the price of fuel per megawatt, or
12 the price per megawatt is based on the expectation that the
13 enrichment process for the more highly enriched uranium will,
14 will cost approximately the same as the current uranium; is
15 that correct?

16 A On a per megawatt basis.

17 Q Okay.

18 A You know, we're talking about going from 4.1 to
19 4.2 percent, so.

20 Q Okay. And then as of July 17th, 2007, however, am I
21 correct that PEF has not concluded its studies to compare the
22 price of the more highly enriched uranium to the current
23 uranium that's being used; is that correct?

24 A We haven't finished the final fuel design. That's
25 correct.

1 Q Okay. And you would agree further that you will not
2 have the price of the 4.1, I think, percent enriched uranium,
3 which is the more highly enriched uranium, to compare to the
4 current 4.0 percent enriched uranium until the final study is
5 complete; is that correct?

6 A For a final number, that's correct. And, again, what
7 we wanted to use was what would be a number relative to the
8 economic analysis. The volume of savings between what we're
9 comparing, like I said, within rounding takes you out to two
10 decimal spots and we just truncated it after two decimal spots.

11 Q Okay. But we don't have the final numbers for that?

12 A That's correct.

13 Q Okay. Referring to Phases 2 and 3 of the uprate
14 projects, the replacement of the steam generator for CR3 during
15 the 2009 outage was in the works since about 2000; is that
16 correct?

17 A Yes.

18 Q And is it correct that while there is no technical
19 tie between the steam generator project and the uprate, the
20 steam generator project creates a window where CR3 would be
21 offline long enough for PEF to install the uprate project's
22 major modifications; is that correct?

23 A Yeah. We looked for what was the total aggregate
24 lowest cost we could come up with, and that window provided
25 that opportunity.

1 Q And Phase 2 consists of the turbine replacement,
2 condensation pump replacements and other things which cost
3 approximately \$150 million?

4 A Yeah. I need to look at that in my testimony. I
5 think it's something like that.

6 Q Okay. And PEF is just now getting bids for this
7 phase of the project and evaluating those bids; is that
8 correct?

9 A That's correct. We finalized -- those bids came in
10 last Friday. Yeah.

11 Q Okay. And right now the company is in the process,
12 as you said, of conducting a detailed pinch point study to
13 determine which of the pumps and motors will be needed to be
14 upgraded or replaced based on the lowest cost to achieve the
15 necessary secondary water flows; is that correct?

16 A That's correct.

17 Q And that study has not been completed and will not be
18 completed until the first quarter of 2008; is that correct?

19 A That's correct.

20 Q And at this point the cost of the \$150 million is
21 based on estimates made in the feasibility study based on
22 information from other sources; is that right?

23 A It's made from many things. It's made from our
24 engineering analysis, it's made from other sources, talking to
25 vendors, it's made from requests for proposals that we've sent

1 out. It's a culmination of things that we have.

2 Q And is my, is my understanding correct that this
3 estimate is based on what would be considered a
4 middle-of-the-road base case scenario?

5 A What we did is tried to get a 90 percent certainty in
6 sensitivity analysis and engineering space of what would be a
7 number that would be in something that would be reasonable,
8 reasonably appropriate.

9 Q But you would agree that this is not a best-case
10 scenario nor a worst-case scenario.

11 A I think the more unknown something was, we tended to
12 go more to a worst-case scenario until the studies were done,
13 like in transmission, for example. I think in, in the things
14 that we do more routinely like designing pumps and motors and
15 things like that, technology we have in-house, obviously the
16 precision we have with that is better than, than some of the
17 things that we haven't solved before.

18 Q Okay. So you're not disagreeing with the statement
19 in your rebuttal testimony on Page 8, Lines 8 through, what is
20 it, 13, where you stated that the estimated costs for the
21 uprate project were developed using a reasonable engineering
22 methodology which estimated a best, worst-case and base case
23 scenario. And PEF did not use the lowest possible cost
24 estimates or the best case for the project costs. Rather, PEF
25 chose a reasonable base case scenario?

1 A No. That's correct.

2 Q Okay. In putting together the estimates for Phase 2,
3 you had a list of items that you believed would be needed to be
4 replaced in that phase; is that correct?

5 A Yes.

6 Q But you have yet to complete a detailed analysis or
7 complete all the studies, so that list would be subject to
8 change.

9 A That's correct.

10 Q And to summarize that, you may need to replace items
11 that you didn't think you would need to replace and not replace
12 other items on that list; is that correct?

13 A That's correct. Uh-huh.

14 Q Okay. Specifically referring to Phase 3, the nuclear
15 core, of the estimated cost of \$250 million for the uprate
16 project, you estimated that \$100 million of costs associated
17 with the nuclear core costs are for analytical analysis that
18 has yet to be done; is that correct?

19 A Yes.

20 Q Okay. And at present, PEF has requested bids from
21 engineering companies; correct?

22 A At present, as of last Tuesday, we have those bids
23 and have ordered (phonetic) a contract.

24 Q Okay. And you had received back previously some of
25 the bids for the licensing part of the extended power uprate

1 for the 140 megawatts; correct?

2 A Yes, from different vendors. Uh-huh.

3 Q Okay. And it would be correct to say that having
4 just received the bids back, what did you say, last week, that
5 PEF is still working through those bids?

6 A Yeah. I think what I said earlier is still the case.
7 As we've gotten the bids in, it has substantiated our estimates
8 and actually provided more confidence factor in our estimates.

9 Q Were you able to receive fixed price bids from the
10 vendors or were they still nonfixed price bids?

11 A We have fixed price bids in from the vendors for the
12 engineer, we have fixed price bids in for the turbine for the
13 delivery of the megawatts. It's a fixed price turbine contract
14 that has specific performance guarantees to assure these
15 megawatts.

16 Q Okay. And so suffice it to say, since you just
17 received those bids, Intervenors haven't had the opportunity to
18 review those?

19 A That's correct.

20 Q And is it correct that the analytical work that is to
21 be done will tell PEF whether there are physical modifications
22 that need to be made and where and what they are, if any?

23 A Yeah. That is the purpose of those analysis. Yes.

24 Q And you would agree that some of the cost of the
25 uprate projects will be a function of the analysis that will be

1 conducted by those contractors in the future; correct?

2 A Yes.

3 Q Regarding the transmission, would you agree that the
4 estimated cost of the transmission upgrades associated with
5 Crystal River plant becoming the largest single load or
6 generator in Florida is approximately \$89 million; correct?

7 A Yes.

8 Q And this would be the case irrespective of the type
9 of plant addition made at Crystal River so long as the
10 additional megawatts being added to the site created it as the
11 single largest load or generator into the Florida system?

12 A Maybe I could get you to restate that. It has to be
13 from one plant, if that was your question.

14 Q Right. But irrespective of fuel type or the type of
15 plant that was being --

16 A If you made a coal plant 1,080 megawatts, you'd have
17 the exact same issue.

18 Q Or if it was a gas turbine combined cycle that was
19 adding an additional 180 megawatts or --

20 A No. It has to be 1,080 megawatts.

21 Q 1,080.

22 A It's the total -- it not the size of the uprate, it's
23 the size of the plant.

24 Q The size of the plant?

25 A Yeah.

1 Q Okay. And currently you're in the process of doing a
2 formal study to validate the potential solutions and options
3 for the transmissions; correct?

4 A That's correct.

5 Q But that study has yet to be done.

6 A Yeah. That will be done in the fourth quarter.

7 Q Okay. And with the point of discharge, that project
8 is approximately \$43 million; correct?

9 A That's correct.

10 Q And right now you also are in the process of studying
11 the options of reducing the incremental increase in water
12 temperature; correct?

13 A That's correct.

14 Q And at this point you are still getting bids and
15 determining the appropriate solution; correct?

16 A Yeah. And working with state agencies looking at the
17 different options with that.

18 Q And that final study has not been completed yet?

19 A That's correct.

20 MS. CHRISTENSEN: Okay. No further questions.

21 CHAIRMAN EDGAR: Thank you.

22 Mr. Wright, questions for this witness?

23 MR. WRIGHT: Just a couple, Madam Chairman.

24 CROSS EXAMINATION

25 BY MR. WRIGHT:

1 Q Good morning, Mr. Roderick.

2 A Good morning.

3 Q I just want to follow up on a couple of things you
4 said in your summary and in response to questions by
5 Ms. Christensen.

6 In responding to the questions from Ms. Christensen,
7 you mentioned that a number of the cost components of the
8 project are going to be subject to fixed price contracts; is
9 that accurate?

10 A That's correct.

11 Q What, if anything, is not subject to fixed price
12 contracts?

13 A There are some labor contracts in the 2011 outage
14 which, which have not yet been made fixed contracts. Some
15 contracts are better to work on a time and materials basis,
16 some are better to -- if the scope is where you can actually
17 bid it and have a defined scope and you can force a vendor into
18 performance for that scope and price, then we're on that with a
19 fixed price contract. If the scope isn't defined at this point
20 in time, sometimes we're better off to contract that as time
21 and materials so we can manage the scope as it, as it unfolds.

22 Q Can you tell the Commission with any more specificity
23 what it is that's not subject to fixed price contracts? You
24 did mention in responding to Ms. Christensen several items that
25 are subject to fixed price contracts.

1 A We have, we have welding, for example, that has to be
2 done in 2009 and in '11 that we're going to use the competitive
3 labor market on. So I don't yet know, for example, will it be
4 a union contract, will it be a nonunion contract? What, what
5 people are reluctant to do is to fix price labor out five or
6 six years into the future? And so some of those are really
7 more of a market-driven labor cost that we work off of whatever
8 that, that labor rate is. What we negotiate with them on is
9 what the markup is. It's primarily labor. All the big
10 components -- because of the volatility of steel prices that
11 we've seen, we're trying to lock those in with fixed prices.
12 So the variability is really in, in people labor.

13 Q Is there any exposure to Progress and ultimately to
14 Progress's customers that the costs under the fixed price items
15 that you have discussed could be higher than what you believe
16 them to be as of now?

17 A Well, I mean, obviously with any contract you can
18 discover things; while you're doing work you may find something
19 else. But we have spent a lot of time and energy with our
20 engineering staffs writing these contracts because we want to,
21 to minimize that risk to all of us in this room.

22 Q In your summary you made the statement, I believe,
23 that you stand by your cost estimates. Is that an accurate
24 characterization of your testimony?

25 A Yes.

1 Q Well, my question for you then is is Progress willing
2 to bear the risk of cost overruns?

3 A I don't think at this point in time, because, again,
4 we haven't actually priced it out like that. Mr. Portuondo in
5 his testimony will kind of work through a lot of that. But,
6 you know, what we're trying to do at this point in time is make
7 sure we understand what it looks like going forward. The
8 process has to work this way. So I don't know at this point in
9 time.

10 MR. WRIGHT: Thank you.

11 Thank you, Madam Chair.

12 CHAIRMAN EDGAR: Thank you.

13 Mr. McWhirter, questions for this witness?

14 MR. McWHIRTER: While I'm questioning Mr. Roderick,
15 my beautiful assistant will pass out an extract from the review
16 plans.

17 CROSS EXAMINATION

18 BY MR. McWHIRTER:

19 Q Mr. Roderick, you are the -- your job title has
20 changed at Crystal River. You were the Director of Site
21 Operations?

22 A That's correct.

23 Q And now you are Vice President of Nuclear Projects
24 and Construction. What, what is the difference in those two
25 operations?

1 A Well, as the Site Director at Crystal River I had the
2 overall responsibility for the operation of the unit and the
3 engineering and technical training and things. With the advent
4 of us considering building new nuclear in Levy County, we've
5 created a separate department to try to go look at that about
6 adding new nuclear generation in the state. So that's what
7 that department was created to do. So I moved from the Site
8 Director at Crystal River into this role.

9 Q Is the operations of your department part of the cost
10 of this uprate?

11 A No. What, what is part of this uprate is, is no
12 different than what was under Crystal River 3 at that point in
13 time. We just moved that over into a group to be very focused
14 on this project, on the steam generator replacement project and
15 on Levy County. We clearly are, are doing our diligence to
16 ensure that we have the right project management techniques and
17 controls on these projects at a time when, when there's
18 volatility in a lot of materials, labor prices and steel
19 prices.

20 Q Did you become aware of the potential fuel cost
21 savings that could be derived from the CR3 uprate before 2005
22 or has it only come to your attention recently?

23 A I think it really came to our attention -- as a
24 company we were out looking for different innovations. We were
25 looking at many different things over the last couple of years

1 here to try to find -- again, you know, as you said earlier,
2 there is, there is no one master to any of us and there's
3 actually more than two, if you think about it. You know, we
4 have environmental stewardship responsibilities, we have
5 reliability as a priority for us, we have price as a priority
6 for us. It isn't any one of those masters that we serve. And
7 we went and sent different technical teams together to go look
8 at things like energy efficiency, at renewables, at can we get
9 more capacity out of our different units, and that study came
10 up with this power uprate project. I say study. That team
11 that was looking at that came up with this power uprate project
12 as something that needed further investigation.

13 Once we decided to start that investigation, then we
14 obviously needed to understand the process by which we would
15 use to do that study, and that's what brought us into this
16 process.

17 Q And my question was what date did that study
18 initiate? Was it before 2005, after 2005?

19 A No, it was not before, it was not before 2005.

20 Q Was it within the last year?

21 A It was in the last two years.

22 Q And you, of course, from your education and
23 experience are aware that uprates of nuclear facilities have
24 been going on for a number of years, hasn't it?

25 A There are limited uprates. The uprates that have

1 happened really to date are very small compared to what we're
2 talking about. Most uprates are around 1, 1.5 percent, some of
3 them, the bigger ones are at 8 percent. We're talking about a
4 20 percent total increase in generation for the site. It is
5 significantly different. And on top of that, most of the
6 uprates that have happened have been on boiling water reactors,
7 which is a completely different design. You can't use
8 operators between one and this type of design; it's completely
9 different. So for a Babcock & Wilcox design there's never been
10 a plant that has ever achieved an uprate like this.

11 Q What is it that brought it to your attention that
12 this was an opportunity for your company?

13 A Well, and, again, what we were trying to look at is
14 what else is in the original designs back in the 1960s when
15 these plants were designed, what margins are out there, what
16 new analytical methods are out there that maybe would let us
17 look at things differently?

18 So, for example, in 1960 there wasn't a lot of
19 technology on, on some parts of reactor design. And so what
20 engineers do at that point in time is we go bigger. We use, we
21 build margin in uncertainty. And so when you go back today, we
22 have different analytical techniques that let us go back and
23 look at that margin and make decisions about whether that
24 margin could be used or not and still safely operate the unit.
25 And so that's what we did is we went with modern -- with some

1 of the techniques we've had to pay to be developed to go look
2 at technology, and found that our reactor could, in fact, be
3 uprated about 17 percent. And then the other increase comes
4 out of steam efficiencies.

5 So once the reactor can be uprated, then it's a
6 matter of designing the rest of the plant around the reactor to
7 size it to handle the steam that the reactor can put out.

8 Q And the -- and you started on the study within the
9 last year, year and a half?

10 A That's correct.

11 Q Okay. Now the first phase -- let me ask you this.
12 On Page 3 of your testimony at Line 11, you say there's an
13 economic need, but the project will provide additional
14 reliable, reliable baseload capacity.

15 Is it your testimony that this uprate has a two-fold
16 purpose: One, to improve reliability and meet your need for
17 your growing, the growing demand on your system and, secondly,
18 the economic need?

19 A No. This project was -- from the charter I got to go
20 figure this out, which, remember, I'm in the technical side --

21 Q Right.

22 A -- was to try to find ways to reduce fuel cost. It
23 was -- we never, we never did anything from a generation
24 standpoint. We went purely after trying to find ways to reduce
25 fuel costs.

1 Q Well, do you think that this plant will operate 24
2 hours a day and will provide part of your base operating
3 system?

4 A Well, I've spent the last 15 years of my life making
5 that happen. So, yeah, I do believe -- I have a lot of
6 confidence in that unit. We've done a good job making that
7 unit be recognized as one of the top operating plants in the
8 United States. So, yes, I do believe that.

9 Q And because it's there, it will obviate the need to
10 build another 140 megawatts somewhere else; is that correct?

11 A I don't follow you on that.

12 Q I beg your pardon?

13 A I didn't follow your -- I mean, what, what, what we
14 did is we looked at displacing coal. That was -- you know, we
15 didn't go look at displacing future generation. We really
16 looked at ours and said, "What could we displace?" And so all
17 of our analysis, the whole project study was all built around
18 displacing coal.

19 Q I understand that. But as a matter of the result of
20 what you've done and will do, is it true that this will
21 obviate -- do you know what obviate means?

22 A Yes.

23 Q Will obviate the need for building another
24 140 megawatts somewhere else?

25 MS. TRIPLETT: Madam Chairman, I'd interject.

1 CHAIRMAN EDGAR: Ms. Triplett.

2 MS. TRIPLETT: Object for lack of foundation.

3 CHAIRMAN EDGAR: Mr. McWhirter?

4 MR. McWHIRTER: Well, I'm trying to ask him a
5 question to build the foundation. Does he know whether --
6 well, do you know whether it will --

7 THE WITNESS: No. I don't -- my --

8 CHAIRMAN EDGAR: Mr. Roderick, Mr. Roderick, I'm
9 sorry. Let us, let us work through it and then we'll come back
10 to you.

11 THE WITNESS: Okay. Thank you.

12 CHAIRMAN EDGAR: Okay. Ms. Triplett.

13 MS. TRIPLETT: This is our, our nuclear witness, and
14 we have another witness who can address Mr. McWhirter's
15 question about resource planning.

16 CHAIRMAN EDGAR: Mr. McWhirter?

17 MR. McWHIRTER: Madam Chairman, I'll move on.

18 BY MR. McWHIRTER:

19 Q It's your opinion that this will, this plant will
20 operate and when it is completed will produce 140 megawatts of
21 power in addition to the production it has today; is that
22 correct?

23 A 180 megawatts.

24 Q 180 megawatts.

25 A That's correct.

1 Q Forty from the first phase and 140 later?

2 A 140 for the second.

3 Q All right. And that first phase is what you call a
4 measurement uncertainty recapture. What does that mean? Are
5 you measuring something?

6 A The first phase is the measurement uncertainty
7 recapture and the balance of plant redesigns and efficiency.

8 Q Right.

9 A The measurement uncertainty recapture is really where
10 the -- again, going back to the '70s and '60s -- where
11 instrumentation was not overly accurate, we had the engineer
12 margin into that instrumentation. So in the 1960s, 1970s, even
13 into the 1980s and 1990s, the ability for instrumentation to
14 measure with a nuclear regulatory approved certainty, in other
15 words, it can't be wrong, was a 3 percent margin.

16 And so as we have redesigned these now, new
17 technology came out in the mid 1990s on this part of it to have
18 transducers that will actually come within a percent of, of
19 what it actually is.

20 So the margin that we don't have to keep anymore is
21 3 percent. We can actually increase power by using more
22 sophisticated instrumentation. We don't have to keep that
23 engineering margin in the plant anymore because we have more
24 accurate instruments. So that's what we're talking about
25 measurement uncertainty recapture. It has to do with more

1 refined instrumentation.

2 Q Would it be fair to say that the instruments that
3 were installed 30 years ago are now obsolete and you're
4 replacing those instruments with new instruments to measure?

5 A In some cases. In some cases just because it's 30
6 years old doesn't mean it's not good.

7 Q I understand.

8 A I mean, we have a lot, a lot of good equipment in
9 that plant still.

10 It may just -- again, looking 30 years ago, it's
11 still a good design. It's just when you can get some megawatts
12 out of it, and, again, that's what we went very much after is
13 trying to get megawatts, these were, were megawatts that we
14 could pick up as part of this project.

15 Q Well, what -- are we dealing with meters and dials
16 and things like that?

17 A We're dealing with everything from meters and dials
18 up to 600,000-pound rotors, and we're dealing with really
19 taking, for those of you that have been at the plant, taking
20 everything on the turbine deck where the turbine generator is
21 and all those huge components and removing them from the plant
22 and putting new ones in. Because the technological advances in
23 rotors that have been made in the last five years with going to
24 a uniblade design allow us to get 40 megawatts out of those
25 turbine rotors for, for a cost that we can displace fossil and

1 it still be a payback for, it still can be a return back to the
2 customer.

3 Q Well, this plant is 30 years old and you're going to
4 renew the license and, as part of that, you're replacing the
5 steam generator; is that correct?

6 A No. The steam generators are not being replaced for
7 license renewal. The steam generators are being replaced
8 because of a, a material issue inside the steam generators that
9 we need to take care of independent of license renewal to get
10 to the extent of this license life.

11 Q I see. And that's not, the steam generator
12 replacement is not part of this uprate cost requirement.
13 That's something else.

14 A That's correct.

15 Q That's in base rates. And are the rotors that you're
16 talking about in those steam generators or are they somewhere
17 else?

18 A Well, now these rotors are on the electrical side.
19 These rotors are -- the steam generators are in the reactor
20 building. The rotors that we're talking about on the turbine
21 rotors are actually in the turbine building that are hooked to
22 the electrical generator. They actually turn the electrical
23 generator. I know I used the term "generator." We have steam
24 generators that take reactor steam and turn it into super
25 heated steam that we can use in the turbine and then out in the

1 turbine building. That's what turns the electrical generator.

2 Q And the rotors -- there are rotors there now.

3 A That's correct.

4 Q And those, the cost of those rotors was through base
5 rates; is that correct?

6 A They were bought before I came. I don't know.

7 Q You don't know. But you're replacing the rotors that
8 are there now with more efficient rotors.

9 A That's correct.

10 Q Is that the major part of the expense?

11 A That's correct. They're designed to be able to
12 withstand, you know, the entire uprate.

13 Q Now go to Page 18 of your testimony.

14 A This is direct or --

15 Q This is your most recent testimony dated May 4th. I
16 guess your rebuttal is the most -- it's amended direct
17 testimony.

18 Page 18, at Line 5, you start talking about this
19 \$89 million expenditure to upgrade the transmission line.

20 A Okay.

21 Q Have you found that?

22 A Yes.

23 Q In your deposition you indicated that \$83 million of
24 this \$89 million is the line that will run from Madison County
25 to Perry, Florida, 34 miles in length.

1 A That's correct. I'm not seeing it here.

2 Q Okay.

3 A It's not in this testimony. It's in -- that was
4 actually the --

5 Q No, it's not in the testimony.

6 A It was in cross-examination.

7 Q You told us that in discovery.

8 Now did you drive up here, sir?

9 A I did.

10 Q From Crystal River?

11 A I did.

12 Q Did you notice that it's 100 miles from Crystal River
13 to Perry?

14 A Yes.

15 Q And this line that you're putting in that relates to
16 this plant is 100 miles, the southern point of it is 100 miles
17 north of the Crystal River plant?

18 A Yes.

19 Q And is that the same line that will be used to bring
20 power in from Georgia?

21 A I can tell you this line that we're talking about,
22 it's only purpose in life -- and, realize, the grid is an
23 interconnected thing all across the state and into the rest of
24 the United States. We need the ability within seconds to bring
25 power from any source we can to put on the grid in case that

1 unit drops away. So that connect could just as easily have
2 been in Miami. That one was just one we found that was in a
3 place where we already had right-of-ways to be able to install
4 a corridor to get us power on the line when we needed it in
5 case Crystal River 3 dropped. Again, that was, that was
6 probably the most bounding thing we could find at that point in
7 time.

8 As we look at this more and as we've talked, I don't
9 believe that that may be the best solution. It is a bounding
10 solution that's out there, and we are continuing to study that
11 to find even better solutions with that. But that line really
12 has -- and the line -- by the way, without the power uprate,
13 there was no intention of installing that line by the company.

14 Q I see. So what you're saying is that CR3 is
15 presently 900 megawatts.

16 A That's correct.

17 Q And if you have a forced outage and you have to get
18 900 megawatts online rapidly to meet your demand, you wouldn't
19 need this transmission line at all.

20 A That's correct.

21 Q And it's only the additional 180 megawatts that
22 requires the need.

23 A Yeah. Because, because of the way the law is written
24 on if you're the largest single load in the state. Right now
25 the St. Lucie plant uses an interconnect into our grid over

1 here on, from Florida Power & Light to Progress Energy to do
2 the same thing for them. And so no matter who is the largest
3 single load is going to have to address that to show how they
4 are going to protect the grid.

5 Q What, what's the size of the St. Lucie plant?

6 A It's 1,030 megawatts.

7 Q Okay. So if, if you provided 50 megawatts less, you
8 could save \$89 million?

9 A Yeah. I would -- I don't know that for a fact, but
10 that would make sense. Because the only reason we're doing
11 that mod is because there's two things we have to address
12 legally with the Nuclear Regulatory Commission as well.

13 One is we have to ensure our reliability of offsite
14 power, and that's not going to be an issue. The second is the
15 largest single load, which is a state requirement. If we were
16 not the largest single load, we would not have that
17 requirement; therefore, we wouldn't need transmission.

18 Q We've handed you a document that has been identified
19 as ID Number 21. If you would take your pencil and strike
20 through that, make it ID Number 20, it will conform to the
21 exhibit list that we got this morning. And it's composed of
22 the review of, the Public Service Commission staff's review of
23 the Ten-Year Site Plans of all Florida's electric utilities.
24 And what I've done for the purpose of keeping the record
25 relatively short is I've just taken four pages of that 50-page

1 review, and I'd like you to look at Page 21, if you would,
2 where it says, "The North Florida Transmission Study." Would
3 you mind reading that paragraph and then telling us what that's
4 all about?

5 A I can certainly read it to you. I can tell you I'm
6 way outside my field of expertise to tell you what it's all
7 about. But I'll read it to you, if you'd like. I mean, but I
8 don't, I don't deal --

9 Q Well --

10 A As far as, as far as knowing what the Ten-Year Site
11 Plan for transmission is, I mean, I just -- that's not what I
12 do.

13 Q But it, but it looks like there's, the North Florida
14 Transmission Study has been in progress since 2005 to assess
15 the reliability of the transmission system in the region. I'm
16 just quoting from an extract of it. And you don't know
17 anything about that or what it amounts to?

18 A I don't. And, again, we did not try to address
19 transmission reliability, import power capability. Alls we
20 tried to address are the legal requirements that this project
21 creates for Crystal River 3 becoming the largest single load in
22 Florida. And whatever that takes, we're going to drive
23 whatever that is to whatever the lowest cost we can: Be that
24 build new 230, be that not build new 230. But we, we didn't
25 try to go in to solve anything else with our project.

1 Q Do you know whether this project will solve that
2 problem?

3 A I don't.

4 Q Okay.

5 A I don't.

6 MR. McWHIRTER: I tender the witness.

7 CHAIRMAN EDGAR: Thank you.

8 Mr. Brew, questions on cross for this witness?

9 MR. BREW: Yes. Thank you.

10 CROSS EXAMINATION

11 BY MR. BREW:

12 Q Good morning, Mr. Roderick.

13 A Good morning.

14 Q Not to beat a dead horse on transmission, but just a
15 real quick clarification so I understand it. With the capacity
16 uprate to 1,080 megawatts --

17 A Uh-huh.

18 Q -- CR3 becomes the number one or N1 contingency on
19 the Florida system?

20 A That's correct.

21 Q And so for Florida reliability purposes you're
22 talking about the transmission upgrade, the Florida system
23 issue?

24 A Yeah. What we're talking about is, is being able to
25 comply with what those requirements are. Yeah.

1 Q For reliability.

2 A Now I don't want to split hairs on a word, but that's
3 what that Commission is called, so I'll have to agree with the
4 word. Not reliability from a maintenance standpoint,
5 reliability from not losing the grid to go dark in the state.

6 Q Right. Because what you need is the capability to,
7 not to distribute the output from CR3 but to quickly replace
8 that output.

9 A Correct. That's correct.

10 Q Okay. Yes. Thank you.

11 All right. Then do you have with you a copy of the
12 company's response to OPC's first set of interrogatories?

13 A Is this dated July 17th?

14 Q I think that's -- unfortunately mine doesn't have a
15 date on it. But I was looking to, if you've got it, the
16 company's response to question number six, which referred to
17 your reference of balance of plant in Page 16 of your
18 testimony.

19 A I don't have that. But you can -- I can go to my
20 testimony and see what you're talking about there.

21 CHAIRMAN EDGAR: Mr. Brew, is that in any of the
22 exhibits that are --

23 MR. BREW: I thought it was a composite exhibit. No?

24 CHAIRMAN EDGAR: I'm not seeing it.

25 MR. BREW: All right.

1 CHAIRMAN EDGAR: But if you can point me, we --

2 MR. BREW: I can, I can quickly go through my
3 questions without it then.

4 CHAIRMAN EDGAR: Okay.

5 BY MR. BREW:

6 Q The balance of plant additions that you referred to
7 on Page 16 of your testimony.

8 A Uh-huh.

9 Q Do you have that?

10 A Yeah. One second. This is in amended, because I'm
11 on Page 16 of my original testimony and it's talking about
12 transmission and point of discharge.

13 Q I'm looking at your amended direct.

14 A Okay. Hold on.

15 Q Page 16, Line 2.

16 A Okay.

17 Q All right. And you've talked with Mr. McWhirter
18 about replacing or modifying a number of items on the turbine
19 deck.

20 A Uh-huh.

21 Q Low pressure turbines, are you replacing them or
22 modifying them?

23 A Replacing.

24 Q Replacing them. High pressure turbines, replacing or
25 modifying?

1 A Replacing.

2 Q The electrical generator, replacing or modifying?

3 A Modifying.

4 Q Okay. Main steam reheater, heat exchangers?

5 A Replacing.

6 Q Feed water heater exchanges?

7 A We're replacing some of them. Some of them we've
8 determined we don't have to replace.

9 Q Okay. And you've got feed water booster pumps.

10 A We're replacing those.

11 Q Condensate pumps?

12 A Replacing.

13 Q Circulating water pumps?

14 A Replacing.

15 Q All right. In the company's revenue requirement
16 analysis, do you know if the company has shown retirements for
17 any of the existing assets that are there?

18 A I would ask Mr. Portuondo that question. I'm not --
19 I don't know.

20 Q So you don't know. Okay.

21 On the, on the first phase MUR project, did you say
22 that you're working with a 3 percent instrumentation error now?

23 A Yeah. What we have is, and I'm averaging a number up
24 here, but what, what we have right now within those bounds is,
25 is that we, we're trying to basically reduce that by about

1 2 percent, which will give us 1.6 reactor power. So our end
2 number we're after is 1.6 reactor power, which will give us 12
3 electrical megawatts.

4 Q Okay. I understand. But what I was asking, is your,
5 the error that you're working with now 3 percent or 2 percent?

6 A I need to look it up in my testimony, if that's, if
7 you'll give me just a second.

8 Q Go ahead.

9 (Pause.)

10 A It's 2 percent, so.

11 Q Okay.

12 A Okay.

13 Q I was just a little confused because I thought you
14 said, used 3 with Mr. McWhirter.

15 A Yeah. 2 percent. I'm sorry.

16 Q The main instrumentation change you're talking about
17 is moving to ultrasonic flow meters?

18 A Correct. Uh-huh.

19 Q And compared to the differential measurement types
20 you use now.

21 A Uh-huh.

22 Q And utilities operating nuclear plants have been
23 shifting to these UFMs over the last ten years; is that right?

24 A Yes.

25 Q And did Progress order such a UFM for its Robinson

1 plant back in 2002?

2 A Yes.

3 Q And over 30 utilities have installed these types of
4 approaches?

5 A Yeah. This was actually, like I said, this part of
6 the uprate was, that's the reason we were able to accomplish
7 this one early on. The Robinson plant you mentioned though
8 is -- one of the things we needed to do is learn some lessons.
9 Many of the plants that had installed these originally had
10 significant maintenance issues with them, and Robinson was one
11 of those plants. And so we wanted to ensure and have ensured
12 that our fabrication of this, of the feed water flow
13 instruments, that those issues do not recur. And so, you know,
14 sometimes you're Johnny-on-the-spot good and sometimes you're
15 the first one on the road and you'll suffer some of that.

16 So we have -- we went through all the lessons learned
17 from Robinson, from the other plants that had installed that.
18 We did get a system price based on that Robinson contract that
19 was, which ended up saving us some money to use that. But, so,
20 yeah, that particular part of this mod, unlike the other parts
21 I've talked about, you know, that small uprate has been done
22 before.

23 Q Okay. And so you'd be using the Caldon meters then?

24 A Correct. Caldon. Uh-huh.

25 Q Okay. And over 50 units have installed the Caldon

1 meters of some kind or another as far as you know?

2 A Yeah. There are several.

3 Q Okay.

4 A It's -- like I said, that's about 12 of the
5 180 megawatts.

6 Q Okay. But would you accept that Caldon claims that
7 more than 53 nuclear plants have installed those devices?

8 A Sure. I mean, I don't know. That's probably about
9 right.

10 Q So at this point in its development shifting from
11 '60s technologies to today is kind of like going from bias-ply
12 tires to using radials? In the '60s everybody wore the old
13 tires, but nowadays everybody would use the radials because
14 they're simply more efficient?

15 A Well, I think there's many reasons why you change
16 technology. One could be that the vendors that serviced your
17 old technology are out of business, they've closed shop, moved,
18 whatever.

19 The second reason you do it is that it's, that you
20 can get some benefit out of it. In these cases what we're
21 finding is that, that we've got -- we're going after the
22 megawatts, things that make megawatts. For example, most of
23 the plants that did the MUR that you're talking about failed to
24 miss another opportunity that they had on the main steam
25 temperature indications which we're using. Part of our

1 study -- we're not -- we didn't try to just get narrow with
2 what other people were doing. We tried to look more broadly,
3 again, trying to capture as many megawatts as we could. And so
4 we actually went beyond even what Caldon did as far as what
5 we're installing coming up.

6 Q But in terms of, in terms of the MUR phase, this is
7 not a dying business. This is a growing business because this
8 is the type of thing that virtually every operator is looking
9 at or doing.

10 A For the MUR?

11 Q Yes.

12 A Yeah. I think about half, 50 percent.

13 Q Okay. That's fine.

14 Just quickly going back to the transmission upgrade.

15 A Okay.

16 Q Your, for lack of a better term, your plug-in on the
17 transmission estimates was that 34-mile line, assuming
18 \$89 million, which is about \$2.5 million a mile. What does
19 that assume in terms of land right-of-way construction time?

20 A Well, and, again, there was two, two parts we needed
21 with this when we looked at what option would bound us. And
22 one of the things we knew we needed was we needed land we
23 already had access to. Because if we had to go through the
24 condemnation process, you might not get that done before 2011.
25 Okay. So we wanted land we could -- we had land that we could

1 get on top of quick and start building quick, and that's why we
2 felt we could accomplish that by 2011 as a, as basically a
3 scenario that for sure would solve it. But we knew there's
4 many other options that we wanted to go study. But, you know,
5 when we first started talking about it, everybody, you know,
6 wants to know all the precision details as you start a study
7 and that's why we picked that solution set.

8 Q Does the \$89 million assume you'd have to buy land?

9 A No.

10 Q Okay. The POE -- POD discharge plan for 2011.

11 A Uh-huh.

12 Q Will your NPDES permit expire before then?

13 A No.

14 Q Doesn't it expire in 2010?

15 A Well, we'll actually hit into this in 2009, but the
16 big one will come in 2011. So, you know, we had made some
17 initial discussions with the state about changing the NPDES
18 permit and that was not very well received. And so we
19 basically went after mitigation instead of, instead of trying
20 to go for a permit change.

21 Q But you have your existing permit run through 2010;
22 is that correct?

23 A Correct.

24 Q So you may have other issues regarding your NPDES
25 apart from the point of discharge; is that right?

1 A I'm not aware of any.

2 Q Have you studied it?

3 A My, my business -- no. I mean, that's an
4 environmental side of the company.

5 MR. BREW: All right. That's all I have. Thank you.

6 CHAIRMAN EDGAR: Thank you.

7 Mr. Twomey.

8 MR. TWOMEY: Yes, Madam Chair, thank you. Just a
9 couple.

10 CROSS EXAMINATION

11 BY MR. TWOMEY:

12 Q Good morning, sir.

13 A Good morning.

14 Q As I understand it, the three stages of the project
15 are each designed to make CR3 operate more efficiently; is that
16 correct?

17 A It's designed to generate more megawatts. I mean,
18 raising the reactor power doesn't necessarily make it generate
19 any more efficiently, it just makes it generate bigger. You
20 know, I don't know what efficiency -- it doesn't make the unit
21 have a higher capacity factor. It just means that it's going
22 to generate more megawatts.

23 Q Well, I thought I heard you say that there would be
24 resulting fuel savings.

25 A Maybe I'm just using a term out of my business

1 differently. But, you know, when you say efficiency, are we
2 going to get -- does the unit now run at 80 percent of
3 100 because of equipment issues and now it's going to run at
4 85 percent? So the unit should still run at 100 percent power,
5 it's just that power level will generate more megawatts.

6 Q Yes, sir. I understand that.

7 A Okay.

8 Q Thank you. But didn't I hear you testify in the last
9 hour that there would be fuel savings to result from the
10 uprate?

11 A Correct.

12 Q And to the extent that there are fuel savings, isn't
13 that a form of efficiency?

14 A It's -- that's not the term I'd use. I mean, just --

15 Q Okay.

16 A I mean, I --

17 Q Okay. You said that the, the uprate would result in
18 reduction in a certain level of greenhouse gases, did you not?

19 A Yeah. What I said was it would displace coal units,
20 which -- and so these are greenhouse emission-free megawatts.
21 Yes.

22 Q To the extent that the displaced coal generation
23 isn't taken up by new load; right?

24 A Yeah. I mean, that's always true.

25 Q Okay. The, the, it strikes me that the, the uprate

1 is the correct thing to do in an engineering sense, is it not?

2 A It's a, it's a very technically challenging project,
3 so therefore all engineers get excited about that.

4 Q But, I mean, it's beneficial in all regards
5 apparently.

6 A I mean, everything I've seen looks like a good
7 project that provides a good value to the customers.

8 Q Okay. Mr. Roderick, is there any suggestion in the
9 testimony of any of the company's witnesses that the company
10 will not carry through on this uprate if it's denied the fuel
11 clause treatment requested in this petition?

12 A No. I think what we've said in our testimony is that
13 when we set out on this project, this was the vehicle we
14 selected to use within what the current guidance that Mr. Walls
15 talked about and Mr. Portuondo will talk more about. And that
16 if that doesn't, doesn't work, then we'll have to go back and
17 look at that compared to all the other priorities for the same
18 money that we have to compete with.

19 Q So you are suggesting that --

20 A I'm saying I don't know.

21 Q Let me finish the question, please.

22 A Okay. Sorry.

23 Q It sounds to me you are suggesting that if you don't
24 get the treatment that you're asking the Commission here to
25 have recovery through the fuel adjustment clause, that there is

1 a, at least a veiled hint that the company won't go through
2 with the, with the uprate. Is that true or not?

3 A No, I don't think I said that. I think what I said
4 was, is I don't know. We'll have to go back and relook at
5 everything. And, you know, I mean, it's, it's like any other
6 business. You know, you have to prioritize and see what you've
7 got.

8 Q So apparently you're unprepared to say that you'll go
9 ahead with the uprate even if you don't get the requested fuel
10 clause treatment here?

11 A Yeah. I'm saying I don't know that we will.

12 Q Even though everybody apparently admits that it's a
13 beneficial project.

14 A I think we've all testified and we're all in violent
15 agreement to that fact, that this is a good deal for the
16 customers from our side.

17 Q And yet if you don't get the fuel treatment requested
18 here, there's some suggestion that you may analyze --

19 A There's no suggestion. I'm just saying --

20 Q -- you may analyze your priorities and decide not to
21 do it.

22 A I'm saying that any time we have anything -- you
23 know, I mean, if you want to treat it -- if you think about
24 base rates or whatever, those go through prioritization
25 processes. I just don't know. I'm just saying what we've been

1 chartered to do is to come up with what is the best value for
2 our customers and put that on the table and take it through
3 this process. And that's what we're here doing today.

4 Q Can you here and now name me one project that would
5 have a higher priority than making this uprate?

6 A Well, hurricane hardening.

7 Q I'm sorry?

8 A In 2004, 2005 it would have been hurricane hardening.
9 I mean, again, there's many masters you're trying to serve.
10 We're trying to have the grid and system and our power plants
11 ready for hurricane hardening. I don't know. I'm just saying
12 right now those will go back through those processes and we'll
13 have to go through it.

14 Q But you don't know right now.

15 A That's correct.

16 Q Okay. Now you mentioned, I guess, the uniblade
17 rotors. Were those the ones you referred to, I believe, in
18 your summary where you said that there were going to be, there
19 was going to be at least a 30-month lag time for ordering the
20 devices and then installing them?

21 A Correct. Uh-huh.

22 Q Okay. Now what is the total projected cost for the
23 rotor replacement, if you know?

24 A For the rotors and the generator we have a fixed
25 price of approximately \$90 million.

1 Q \$90 million?

2 A Uh-huh.

3 Q And that project is the, I guess from the, the
4 time -- when do you start spending the money that you
5 mentioned? When will you start spending money on the rotors?

6 A We're spending money right now.

7 Q I see. And the project will be greater than 12
8 months in duration of necessity?

9 A To order the rotors, four to be installed in two
10 years, we have to commit millions of dollars this year.

11 Q Okay. Now if you know enough about utility
12 regulation in this regard, if the fuel clause recovery
13 requested in this petition is denied, isn't it true that during
14 the course of the construction of the repairs, that is the
15 replacement, that the company will earn allowance for funds
16 used during construction, interest on the cost of the rotors?

17 A I'd rather Mr. Portuondo answer that. I don't know
18 how that's set up.

19 Q Okay. Again, if you know, isn't it true likewise
20 that if the fuel clause recovery treatment requested in this
21 petition is denied, that upon the completion of the repairs,
22 the installation and when the rotors and the unit goes back
23 into service, isn't it true that that \$90 amount, \$90 million
24 amount will go into the company's rate base? Do you know?

25 A Again, I don't know.

1 MR. TWOMEY: Okay. That's all I have, Madam Chair.
2 Thank you.

3 CHAIRMAN EDGAR: Thank you, Mr. Twomey.
4 Commissioners, are there any questions for this
5 witness at this time?

6 Commissioner Skop.

7 COMMISSIONER SKOP: Thank you, Madam Chair. I just
8 have a few questions. I think some of those were, my questions
9 were addressed or fleshed out on cross-examination.

10 But, Mr. Roderick, your amended testimony answered
11 one of my key questions, and that was, again, between the
12 difference in the need determination which mentioned two phases
13 to the uprate versus the three phases in the, your amended
14 direct testimony.

15 Just with respect to that for my own knowledge, at
16 what point did Progress know that you would be able to do it in
17 three stages to the extent of the MUR that's going to happen in
18 2007?

19 THE WITNESS: We basically had realized in some early
20 discussions we had with the Nuclear Regulatory Commission and
21 with our own staff about lessons learned from plants that had
22 went out and installed the MUR in early 2006 to, to not do that
23 with a steam generator replacement. In the original plans we
24 had thought we were going to do that in the same outage as the
25 steam generator replacement. The problem with that is you

1 change too many plant variables at the same time. You're
2 changing steam flow from the steam generator replacement and
3 now you're changing how you measure it, and you're trying to
4 figure out which one is correct. And so that's industry
5 operating experience that we in the nuclear industry use to try
6 to do that. So really in January/February time frame 2006 is
7 when we made the decision to try to go ahead and split out
8 those costs into a separate phase.

9 COMMISSIONER SKOP: Okay. And as a follow-up to
10 that, what risk is there in any, in trying to accelerate being
11 able to procure and install the instrumentation that would
12 happen in the MUR in the earlier time frame in 2007?

13 THE WITNESS: Well, I think our risk that we took to
14 go ahead and put it in there was we had to provide additional
15 management oversight, again making sure that some of the
16 fabrication mistakes that were made in the mid '90s and early
17 2000 time frames weren't replicated for ours. That involved,
18 we put inspectors at the factory ensuring that the design was
19 fully adhered to, that the welding processes were adhered to,
20 that what we learned from our Robinson experience was not
21 repeated. So that's really the biggest issue is management
22 oversight.

23 COMMISSIONER SKOP: Okay. Thank you. And then my
24 second question relates to transmission, and some of that,
25 again, was a little bit fleshed out on cross-examination. But

1 if I could draw your attention to your rebuttal testimony, Page
2 6, Lines 5 through 7, please.

3 THE WITNESS: What was the page again? I'm sorry.

4 COMMISSIONER SKOP: It is -- I have on the rebuttal
5 testimony Page 6, Lines 5 through 7.

6 THE WITNESS: Okay.

7 COMMISSIONER SKOP: One of the points that I had a
8 question was with, and I think it was explained but I just want
9 to make sure that I have it correct, is that to gain system
10 flexibility for transporting additional power if CR3 was forced
11 offline, and that is the requirement that you spoke to about
12 having that capability to bring in additional power into the
13 grid, into Florida should that major generating asset be forced
14 offline for some reason.

15 THE WITNESS: Yes, Commissioner. It's not even just
16 to even bring it into Florida. It may be move it from one side
17 of the State of Florida to the other side. You just have to
18 have the -- you know, in mechanical engineering space it's the
19 pipes to be able to do that. In this case we've got to have
20 the transmission corridor to be able to quickly bring that
21 power from somewhere it's not right now to replace it so that
22 the grid doesn't dip in voltage.

23 COMMISSIONER SKOP: Okay. And with respect to that,
24 I think Mr. McWhirter on cross-examination mentioned the
25 corridor in terms of Madison to Perry and that being

1 geographically distant from the generation site and Crystal
2 River. And I understand the balancing, and, by all admission,
3 transmission is not my expertise and I think you mentioned it
4 wasn't yours. Do you know if there will be any more direct
5 testimony that will be offered to maybe clarify that particular
6 point, that that is in fact the right thing to be doing to
7 provide that reliability balancing, if you will, if the uprate
8 were to go forward?

9 THE WITNESS: Well, I mean, we certainly chartered
10 the transmission people to do that study. And I can tell you
11 I, even though I may not be an expert in it, I have delved into
12 it because that is a bounding solution. And certainly we've
13 got other things, everything from load management we're looking
14 at to other options to be able to do the same, same
15 characteristic, which is why I think at the end of the day our
16 transmission study will give us other options other than that
17 one.

18 COMMISSIONER SKOP: Okay. And I just have two more
19 quick questions on two related points.

20 With respect to the point of discharge and also in
21 your rebuttal testimony, Page 6 and Page 7, and I think it
22 begins with Line 20 on Page 6 and continues on Page 7, Lines
23 1 through 12, and that was also a point that was brought out in
24 the cross-examination. In your direct testimony or your
25 rebuttal testimony you mentioned that a lot of that is due to

1 the additional heat content coming out associated with the
2 uprate. I know that currently before the Commission that's
3 coming up in agenda conference, they're looking at the modular,
4 excuse me, modular cooling towers for CR1 and CR2, and I think
5 that's coming up next Tuesday, if my memory serves me
6 correctly.

7 But in that, in that request, and I have it, it's
8 Docket Number, I think, 060162-EI, they mention that the
9 justification provided is the increased inlet water from the
10 cooling canal into the, you know, the cooling towers to begin
11 with. Is that also part of the argument? I didn't see it
12 mentioned in your rebuttal, so I just want to make sure. It
13 seems to me, you know, from an engineering perspective if your
14 inlet water temperatures are high to begin with, then you're
15 also going to need additional cooling to absorb the heat input
16 that would come from, you know, cooling the system prior to
17 being able to discharge it to maintain your environmental
18 permits.

19 THE WITNESS: I mean, there's really two parts there.
20 One, the gentleman mentioned about a component that's going to
21 be replaced is our circulating water pumps at the waterfront.
22 There's two ways to -- either we're going to push more water
23 across it and dissipate that heat by more flow or we're going
24 to make the same amount of flow we have now hotter. And so
25 we're going to do both. We're actually going to push more

1 water across, which will dissipate the heat less per gallon of
2 water that flows. So we're going to move the water faster with
3 these more efficient and better pumps. And that's going to
4 solve what you're talking about is to try to take and recognize
5 that that inlet temperature coming in is, is changing and, and
6 deal with that going out by, by increasing the velocity through
7 the system.

8 COMMISSIONER SKOP: And with respect to -- I think
9 the cost projected associated with the uprate for the POD is
10 \$43 million. Would you suspect that that would also be the
11 same cost with the CR1 and CR2 or is it different?

12 THE WITNESS: This is, this is purely the incremental
13 resultant amount of heat we have to take out because of the
14 power uprate. It leaves everything else being dealt with a
15 different way. It just says incrementally we're going to add
16 this much heat and this is the best solution we have to be able
17 to get rid of that heat that we'll have left over.

18 COMMISSIONER SKOP: Okay. And then a final question.
19 I just want to follow up on a point that was raised by Mr. Brew
20 on cross-examination.

21 But with respect to some of the components mentioned,
22 and this gets to the question I had about the, the turbines
23 themselves in terms of the rotors, are they replacing the
24 entire rotor or are they just doing the first stage steam
25 buckets or looking at reblading the, you know, different stages

1 or the entire rotor replacement?

2 THE WITNESS: It is an entire rotor replacement of
3 the stationaries and the rotors. The stationaries also have to
4 be basically machined out and put new stationaries in as well.

5 COMMISSIONER SKOP: Okay. But are the casings going
6 to remain or is it just completely new turbines that are
7 coming?

8 THE WITNESS: The outer casing will remain. It just,
9 they'll be redesigned inside of that.

10 COMMISSIONER SKOP: Okay. And then with respect to
11 some of the other secondary loop components that were
12 mentioned, it seemed like that they were doing some substantial
13 replacement of those components in lieu of a modification.
14 And, you know, I'm okay with that just in principle. But I'm
15 just wondering, I know that Progress has asserted Commission
16 precedent to the extent that the Commission previously allowed
17 FPL to recover in this manner for its thermal uprate to its
18 reactor. And looking at the, in the order, the cost of that
19 uprate, I believe, was about \$10 million as opposed to this,
20 which is a little bit more substantial, but this is a much
21 bigger uprate on a percentage of not only reactor power but
22 also some of the secondary loop components.

23 Do we know to what extent there's an apples-to-apples
24 comparison in terms of what they did on the turbine deck in
25 terms of replacement of components or modification of those

1 components?

2 THE WITNESS: I mean, I don't know for sure. I can
3 tell you you can't buy a turbine rotor for \$10 million. That
4 much I can tell you. So, but, you know, the components are,
5 that we're talking about being replaced are all adding
6 capacity. So all these components we're replacing, it's not
7 like we're putting one right back that just happens to be new.
8 We have to add flow through all those components.

9 COMMISSIONER SKOP: Right. Thank you very much.

10 CHAIRMAN EDGAR: Commissioner Argenziano.

11 COMMISSIONER ARGENZIANO: Thank you. I have kind of
12 a strange microphone here, so I'm going to hold it for a while
13 here.

14 In regards to the water temperature increasing, I
15 guess, to the point where it could exceed the thermal permit
16 requirements, I just have a question. Excuse me if I don't
17 grasp this, and maybe you can help me. It says in your
18 testimony that optimal, "An optimal solution has not yet been
19 identified, but we have preliminarily assumed an estimated cost
20 of \$43 million to address."

21 A couple of questions there. How much heat are we
22 talking about, increased heat are we talking about? And if you
23 don't have an optimal solution, how do you estimate a cost?

24 THE WITNESS: Okay. What we can do is we can
25 calculate what is the temperature change that's going to be

1 resultant from the power uprate. And so when we talk two
2 degrees, basically a change in temperature, we can use existing
3 technology, what we already have at the plant with the, the
4 helper cooling towers that are already there, we could just
5 build another one of those and we could dissipate the heat that
6 way.

7 What we're looking at and working with the state DEP
8 with this is there's also other issues in play right now with
9 them with what's called 316 BRAVO, which is entrainment of
10 aquatic life.

11 COMMISSIONER ARGENZIANO: Right.

12 THE WITNESS: And so it may be, we might have to
13 address both of those issues as part of this project. And so
14 that might be a different solution set than just building a
15 modular cooling tower, even though we're confident -- excuse
16 me, forget the word modular, I picked that up -- but another
17 helping cooler tower that's already there, just building
18 another one of those would take care of the power uprate.

19 COMMISSIONER ARGENZIANO: So the cost of \$43 million
20 is looking at building --

21 THE WITNESS: It's building. It's concrete and fans
22 and cooling.

23 COMMISSIONER ARGENZIANO: Okay. Even though you
24 haven't identified that as the optimal, that's where you get
25 the 43.

1 THE WITNESS: That's correct. What we, what we've
2 tried to do in every case is to come up with what we know to be
3 a technical solution that solves the problem and then work
4 backwards from those, those options.

5 COMMISSIONER ARGENZIANO: Okay. And second question,
6 third maybe at this point.

7 In increasing the speed of the water, are you then
8 running into environmental problems again?

9 THE WITNESS: Absolutely. I mean, it's -- and that's
10 why the other option we're looking at is possibly instead of
11 the water going back to the Gulf of Mexico, taking it to a
12 cooling tower and then returning it back to the plant. So the
13 additional flow then is not seen by the Gulf of Mexico, nor is
14 the temperature because we're cooling it and then returning it
15 back to the intake. And that also minimizes the impact on
16 marine and aquatic life because you're just pulling water in
17 once and you're using it twice. And so, again, those are the
18 things that, that we're, we're very active. And, again, we're
19 very committed to our environmental stewardship on this issue,
20 and so we're trying to find that balance of those issues, so.

21 COMMISSIONER ARGENZIANO: And just to reiterate, you
22 said the degree that it may go up would be 2 degrees possibly?

23 THE WITNESS: Well, right now we're not allowed to
24 take it up any. And so our, our solution is that the Gulf of
25 Mexico is not going to see the power uprate. The estimates

1 that we have in here are to accomplish that so that you're not
2 going to see it. It's just --

3 COMMISSIONER ARGENZIANO: It would remain the same.

4 THE WITNESS: You know, we looked at whether or not
5 there was a possibility based on studies, evaluations of
6 raising the existing permit. I just don't think that's going
7 to be possible.

8 COMMISSIONER ARGENZIANO: Thank you.

9 CHAIRMAN EDGAR: Commissioners, any other questions?
10 Commissioner McMurrrian.

11 COMMISSIONER McMURRIAN: I have one quick follow-up.

12 Is the \$43 million that Commissioner Argenziano was
13 asking you about, is that also a bounding estimate?

14 THE WITNESS: Well, it's what we believe right now to
15 be, to be a reasonable estimate based on not having our study
16 finished. And, you know, again, in this process all of us
17 would like to have all the definitive costs before we study it.
18 But our study right now has -- you know, again, I think we're
19 finding that we have solutions. I still believe there's an
20 issue that we still have to work through with the DEP on how to
21 deal with possible 316 BRAVO issues on, on aquatic life. And
22 so those are all technically solvable, but it could change the
23 cost a little bit.

24 And throughout this project, and, you know, I said
25 that from my original testimony on, there's going to be some

1 things that we overestimated, there's going to be some that we
2 underestimated. Steel prices change. But overall as the
3 numbers have come in, we're still, we're still within what we
4 had said we could deliver the 180 megawatts for. And we wanted
5 the megawatts to be pessimistic and we wanted the -- or, excuse
6 me. We wanted the megawatts to be -- we think we'll get more
7 than 180 megawatts and we think the cost is going to, is going
8 to be in that, in that close area, but I need to finish the
9 studies to be able to, to say that.

10 COMMISSIONER McMURRIAN: So just to clarify, unlike
11 the \$89 million with respect to the transmission that is a
12 bounding estimate, the \$43 million could get bigger or smaller.

13 THE WITNESS: It could get bigger. Because the
14 transmission fix we can do within us; I don't need the DEP, I
15 don't need anybody else, I just need to go put up towers and
16 wire. When I, when I get into the environmental issue, there's
17 just a lot more at stake. And so it's going to -- that's why
18 I'm a little less confident about exactly what that's going to
19 look like right now.

20 CHAIRMAN EDGAR: Commissioners? Questions from
21 staff?

22 MS. BENNETT: No, Madam Chair.

23 CHAIRMAN EDGAR: No questions. Questions on
24 redirect?

25 MS. TRIPLETT: Yes, very brief. Thank you.

REDIRECT EXAMINATION

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BY MS. TRIPLETT:

Q Mr. Roderick, Ms. Christensen asked you some questions about the NRC approval for the MUR phase. Do you have any reason to expect that you will not get NRC approval by the time the MUR phase is implemented?

A I don't. We've been in very, very close contact with them. Obviously it's hard for us to commit on behalf of the federal government. You know, we are working with them and we're staying in contact with them and turning around questions they have very quickly. So I have confidence we're going to have it.

Q There were also several questions from Intervenors about PEF's cost estimates. Did anything anyone asked you today change your opinions about the reasonableness of PEF's cost estimates for this project?

A No.

Q And if you could, how does -- PEF's process for estimating the costs in this project, how does that compare to the process you would use for other projects that the company is considering?

A I mean, we used a very, very consistent process. We've, we've tried to be conservative on the megawatts because we don't want to overstate what we think the savings are going to be to the customer. But they're very -- the way we estimate

1 is normal business for us.

2 MS. TRIPLETT: Thank you. No further questions.

3 CHAIRMAN EDGAR: Thank you.

4 Okay. Let's take up the exhibits.

5 MS. TRIPLETT: Yes, ma'am. DLR-1, 2 and 3, and it
6 looks like it's hearing Exhibits 2 through 4.

7 CHAIRMAN EDGAR: Yes. 2, 3, 4 on the comprehensive
8 exhibit list. Seeing no objections --

9 MR. McWHIRTER: FIPUG would like to proffer Exhibit
10 20 for identification.

11 CHAIRMAN EDGAR: Okay. 2, 3 and 4 will be admitted
12 into the record.

13 (Exhibits 2, 3 and 4 marked for identification and
14 admitted into the record.)

15 FIPUG had distributed an excerpt from the report that
16 is listed on the comprehensive exhibit list as 20. To me, it
17 does look on the list like that's the entire report and what we
18 have here before us, I believe, are three pages of it. Do we
19 need to clarify?

20 MS. BENNETT: Yes. We can change to Excerpt of 2006
21 Ten-Year Site Plans dated December 2006.

22 CHAIRMAN EDGAR: Mr. McWhirter, is that consistent
23 with your intention?

24 MR. McWHIRTER: Yes.

25 CHAIRMAN EDGAR: It is? Okay. Any objection?

1 MS. TRIPLETT: Just to be clear, he's identifying,
2 he's not asking for it to be entered as an exhibit?

3 CHAIRMAN EDGAR: Okay. My understanding of the
4 request is that we slightly amend the description of the
5 Exhibit 20 on the comprehensive exhibit list to be more in
6 keeping with the excerpt that was distributed and that,
7 therefore, this excerpt would be admitted into the record
8 rather than the entire report.

9 Mr. McWhirter, is that accurate with your intention?

10 MR. McWHIRTER: Yes, that's correct.

11 CHAIRMAN EDGAR: Okay. Ms. Triplett, any objection?

12 MS. TRIPLETT: Well, I don't think -- when
13 Mr. McWhirter was asking Mr. Roderick about this exhibit, he
14 didn't know anything about it. So I'm not sure the basis for
15 admitting it into evidence at this point.

16 CHAIRMAN EDGAR: Mr. McWhirter?

17 And, Ms. Triplett, you're referring to the discussion
18 between Mr. McWhirter and the witness about the paragraph
19 labeled North Florida Transmission Study?

20 MS. TRIPLETT: Yes, ma'am.

21 MR. McWHIRTER: The way it stands is I requested that
22 the Commission take official notice of its own staff report,
23 and it was stipulated that that would be acceptable with the
24 proviso that there could be objections to its relevance. The
25 objection now has changed to the fact that this witness says he

1 doesn't know anything about it. But, nonetheless, it's still
2 an official report of the staff of the Public Service
3 Commission and it relates to transmission problems in the
4 northern part of the State of Florida and it's relevant. And
5 even though this witness doesn't know anything about it, I
6 think it's admissible into evidence.

7 MR. TWOMEY: May I weigh in, Madam Chair?

8 CHAIRMAN EDGAR: I'm sorry. Oh, Mr. Twomey. Yes,
9 sir.

10 MR. TWOMEY: Just briefly. That was my understanding
11 too from the prehearing conference that there was a discussion
12 about official notice and everything, and I was of the belief
13 that it was resolved by the decision that, in the agreement
14 that they would be stipulated in. And it strikes me that if
15 that's correct, that it's not, it shouldn't be relevant which
16 witness it comes in on. But I thought we had a stipulation it
17 would come in.

18 CHAIRMAN EDGAR: Well, not having engaged in that
19 conversation, I'm going to ask for some clarification. So let
20 me start with Mr. Walls and then I'll come back, Ms. Helton, to
21 you.

22 Mr. Walls.

23 MR. WALLS: We have no objection to taking official
24 notice of what was clearly a Public Service Commission
25 document. I think what Ms. Triplett was making clear was there

1 was no relevance established with this witness about how this
2 document was coming in or how it would be used with this
3 witness. And so if he has further questions with other
4 witnesses that may know something about this document, we
5 certainly have no objection to him raising it at that time. We
6 didn't see any relevance established for this document coming
7 in with this witness. He didn't know anything about it.

8 CHAIRMAN EDGAR: Ms. Helton.

9 MS. HELTON: Just for the record, let me read to you
10 from the prehearing order on Page 26, which I believe reflects
11 Commissioner Carter's ruling as the Prehearing Officer.

12 "The parties stipulated that the items included in
13 FIPUG's motion for official recognition will be included in the
14 comprehensive exhibit list to be entered into the record.
15 Parties reserve the right to object to the relevancy of each
16 document."

17 I believe that Ms. Triplett's objection concerning
18 the excerpt here dealt with lack of foundation. My
19 recollection is that I don't think that Mr. McWhirter did lay a
20 foundation to enter the exhibit into the record. So my
21 suggestion, Madam Chairman, would be that there has not been a
22 foundation laid.

23 CHAIRMAN EDGAR: Mr. McWhirter, do you have potential
24 questions for the next witnesses that, that may --

25 MR. McWHIRTER: Yes, ma'am.

1 CHAIRMAN EDGAR: -- bring us back to this document?

2 MR. McWHIRTER: Yes, ma'am.

3 CHAIRMAN EDGAR: Would you like to -- how about we
4 hold off on admitting it until we get to those questions at
5 that point in time.

6 MR. McWHIRTER: That's satisfactory.

7 CHAIRMAN EDGAR: Okay. All right. Then the excerpt
8 that is labeled Exhibit 20 is not admitted into the record as
9 of this time.

10 Any remaining matters with this witness? Seeing
11 none, the witness is excused. Thank you very much.

12 MS. TRIPLETT: Madam Chair, may he be dismissed?

13 CHAIRMAN EDGAR: Ms. Triplett.

14 MS. TRIPLETT: May he be dismissed from the
15 proceeding?

16 CHAIRMAN EDGAR: He may be dismissed.

17 MS. TRIPLETT: Thank you.

18 CHAIRMAN EDGAR: Thank you. Okay. Let's take a
19 short stretch. When we come back we will take up your next
20 witness. About 12 minutes.

21 (Recess taken.)

22 We are back on the record and you may call your next
23 witness.

24 MS. TRIPLETT: Progress Energy Florida calls Samuel
25 Waters to the stand.

1 SAMUEL S. WATERS

2 was called as a witness on behalf of Progress Energy Florida
3 and, having been duly sworn, testified as follows:

4 DIRECT EXAMINATION

5 BY MS. TRIPLETT:

6 Q Would you please introduce yourself to the Commission
7 and provide your address?

8 A My name is Samuel S. Waters. My business address is
9 100 East Davie Street, Raleigh, North Carolina 27601.

10 Q Who do you work for and what is your position?

11 A I'm employed by Progress Energy Carolinas as Director
12 of System Planning and Regulatory Performance.

13 Q Have you filed prefiled amended direct testimony and
14 exhibits in this proceeding?

15 A Yes, I have.

16 Q Do you have your prefiled testimony and exhibits with
17 you?

18 A Yes.

19 Q Do you have any changes to make?

20 A I do not, with the exception of the address I just
21 gave is different than the address in my direct testimony.
22 I've changed offices since I filed the testimony.

23 Q And if I asked you the same questions in your amended
24 prefiled testimony today, with the exception of the address,
25 would you give the same answers that are in your prefiled

1 testimony?

2 A Yes.

3 MS. TRIPLETT: We request that the prefiled testimony
4 as amended by the witness regarding his address be moved into
5 evidence as if it was read in the record.

6 CHAIRMAN EDGAR: The amended prefiled direct
7 testimony will be entered into the record with the correction
8 noted by the witness as if read.

9 MS. TRIPLETT: Thank you.

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**IN RE: PETITION TO RECOVER THE COSTS OF THE CRYSTAL
RIVER 3 UPRATE THROUGH THE FUEL CLAUSE**

BY PROGRESS ENERGY FLORIDA

FPSC DOCKET NO. 070052

AMENDED DIRECT TESTIMONY OF

SAMUEL S. WATERS

I. INTRODUCTION AND QUALIFICATIONS

1 **Q. Please state your name, employer, and business address.**

2 **A.** My name is Samuel S. Waters and I am employed by Progress Energy Carolinas
3 ~~410 S. Wilmington Street~~, Raleigh, North Carolina,
4 100 East Davie Street,
5 27601.

6 **Q. Please tell us your position with PEC and describe your duties and**
7 **responsibilities in that position.**

8 **A.** I am Director of System Planning and Regulatory Performance for Progress Energy
9 Carolinas (PEC). At the outset of this proceeding I was responsible for directing the
10 resource planning process for both Progress Energy Florida ("PEF" or the
11 "Company") and PEC. In March, I assumed my current position stated above. I
12 continue to testify on behalf of PEF in this proceeding. Our resource planning
13 process is an integrated approach to finding the most cost-effective alternatives to
14 meet each company's obligation to serve, in terms of long-term price and reliability.

1 We examine both supply-side and demand-side resources available and potentially
2 available to the Company over its planning horizon, relative to the Company's load
3 forecasts. In my capacity as Director of System Planning and Regulatory
4 Performance, I oversaw the completion of the Company's most recent Ten Year Site
5 Plan ("TYSP") document filed in April 2007.

6
7 **Q. Please summarize your educational background and employment experience.**

8 **A.** I graduated from Duke University with a Bachelor of Science degree in Engineering
9 in 1974. From 1974 to 1985, I was employed by the Advanced Systems Technology
10 Division of the Westinghouse Electric Corporation as a consultant in the areas of
11 transmission planning and power system analysis. While employed by Westinghouse,
12 I earned a Masters Degree in Electrical Engineering from Carnegie-Mellon
13 University.

14 I joined the System Planning department of Florida Power & Light Company
15 ("FPL") in 1985, working in the generation planning area. I became Supervisor of
16 Resource Planning in 1986, and subsequently Manager of Integrated Resource
17 Planning in 1987, a position I held until 1993. In late, 1993, I assumed the position of
18 Director, Market Planning, where I was responsible for oversight of the regulatory
19 activities of FPL's Marketing Department, as well as tracking of marketing-related
20 trends and developments.

21 In 1994, I became Director of Regulatory Affairs Coordination, where I was
22 responsible for management of FPL's regulatory filings with the FPSC and the

1 Federal Energy Regulatory Commission ("FERC"). In 2000, I returned to FPL's
2 Resource Planning Department as Director.

3 I assumed the position of Manager of Resource Planning with Progress Energy
4 in January of 2004, and assumed the position of Director of System Resource
5 Planning in October of 2005. I am a registered Professional Engineer in the states of
6 Pennsylvania and Florida, and a Senior Member of the Institute of Electrical and
7 Electronics Engineers, Inc. ("IEEE").

8
9 **II. PURPOSE AND SUMMARY OF AMENDED TESTIMONY**

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

12 **A.** Yes, I did.

13
14 **Q. What is the purpose of your previously filed testimony in this proceeding?**

15 **A.** My primary purpose is to present the fuel savings and overall cost effectiveness to
16 customers of the proposed power uprate project at the Company's Crystal River Unit
17 3 ("CR3"), the Company's nuclear unit. A more detailed description of the CR3
18 power uprate project is provided in Mr. Roderick's testimony.

19 I also generally describe the Company, its generation resources, including
20 purchased power, its transmission and distribution systems, and CR3's place in the
21 system. Finally, I generally describe the Company's conservation measures and
22 explained why conservation measures cannot mitigate the economic need for the CR3
23 power uprate project.

1

2 **Q. Why are you filing amended testimony?**

3 **A.** The CR3 power uprate project has been divided into three phases, instead of the
4 original two phases, with the first phase beginning in 2007 instead of 2009. As a
5 result, an increase of 12 MWe is expected in 2008, following the first phase of the
6 CR3 power uprate project during the CR3 2007 refueling outage. I have filed
7 amended testimony reflecting the revised net fuel savings resulting from the
8 acceleration of part of the CR3 power uprate project to the 2007 refueling outage.
9 The revised CR3 power uprate phases and the revised schedule for these phases are
10 explained in the amended direct testimony of Daniel L. Roderick.

11 Because the Commission has granted the Company's petition for a
12 determination of need for the expansion of the CR3 power plant and the exemption
13 from Rule 25-22.082, F.A.C., I have omitted my testimony that was directly related to
14 those requests in the Company's Petition in my amended direct testimony and I
15 included the testimony that is relevant to the Company's petition for recovery of the
16 costs of the CR3 power uprate through the Fuel Clause.

17

18 **Q. Are you sponsoring any exhibits to your testimony?**

19 **A.** Yes. I have prepared or supervised the preparation of the following exhibits to my
20 testimony:

- 21 • Amended Exhibit No. ____ (SSW-1), an amended Summary of Annual Fuel
22 Savings of the Proposed Power Upgrade to CR 3; and

- 1 • Amended Exhibit No. ____ (SSW-2), an amended Summary of the Overall
2 Cost Effectiveness of the Proposed Power Upgrade to CR 3 to the retail
3 customer.

4 These amended exhibits to my testimony are true and correct.

5
6 **Q. Please summarize your testimony.**

7 **A.** The CR3 power uprate will provide customers substantial fuel savings of over \$2.6
8 billion for the extended life of CR3 and enhanced fuel diversity on PEF's system and
9 in Florida. The CR3 power provides retail customers an estimated net fuel savings
10 benefit, when compared to the costs of the power uprate, of \$320 million on a present
11 value basis. In addition, PEF's customers receive additional, reliable base load
12 capacity from the lowest cost fuel generation source available to PEF. All of these
13 benefits demonstrate the clear value of the CR3 power uprate to PEF's customers and
14 support the Company's request that the Commission grant its Petition for cost
15 recovery through the Fuel Clause.

16
17 **III. OVERVIEW OF THE COMPANY AND THE PROJECT**

18
19 **Q. Please generally describe the Company.**

20 **A.** PEF is an investor-owned public utility, regulated by the Florida Public Service
21 Commission ("PSC"), with an obligation to provide electric service to approximately
22 1.6 million customers in its service area, which covers approximately 20,000 square
23 miles in 35 of the state's 67 counties. PEF supplies electricity at retail to

1 approximately 350 communities and at wholesale to 22 municipalities, utilities, and
2 power agencies plus 9 rural electric cooperatives in the State of Florida.

3 PEF serves one of the faster growing areas of the country. Its forecasted annual
4 customer growth is projected to be 1.8 percent over the next 10 years. Annual sales
5 growth is projected to be approximately 2.5 percent during the same period.

6
7 **Q. What are the Company's current supply-side generation resources?**

8 **A.** PEF currently owns and operates a diverse mix of supply-side resources, consisting of
9 generation from nuclear, coal, oil, and gas, along with purchases from other utilities
10 and purchases from non-utility generators such as cogenerators. The existing
11 generating capacity includes one 788 MW nuclear steam unit (reflecting the
12 Company's ownership interest in CR3), four combined cycle units with a total
13 capacity of 1,885 MW, 12 fossil steam units totaling 4,008 MW in capacity, and
14 3,087 MW of capacity in 47 combustion turbine units. The Company's existing total
15 winter net generating capability is 9,768 MW.

16 PEF purchases over 1,300 MW of capacity from 19 qualifying facilities and
17 two investor-owned utilities. The qualifying facilities from which the Company
18 purchases power are fueled by a variety of sources, including natural gas, wood waste,
19 and municipal waste. PEF is also engaged in two long-term contracts for power. One
20 contract is with The Southern Company, which sells the Company 414 MW from the
21 coal-fired Miller and Scherer Plants. The other contract is for system power from
22 Tampa Electric Company. This contract increased to 70 MW in 2005. Altogether,
23 these purchased power resources account for approximately 12 percent of PEF's

1 generation resources.

2
3 **Q. What is the Company's Demand-Side Management (DSM) Program?**

4 **A.** To comply with the directives of the Florida Energy Efficiency and Conservation Act
5 ("FEECA"), PEF must file with the PSC a DSM Plan to meet the conservation goals
6 established by the PSC pursuant to FEECA. The PSC established conservation goals
7 for PEF that span the ten-year period from 2000 through 2009 in Order No. PSC-99-
8 1942-FOF-EG issued October 1, 1999 in Docket No. 971007-EG. Consistent with
9 these conservation goals established by the PSC, the Company filed its DSM Plan on
10 December 29, 1999. PEF's DSM Plan was approved by the PSC in Order No. PSC-
11 00-0750-PAA-EG, Docket No. 991789-EG, issued on April 17, 2000.

12 PEF proposed new conservation goals for the ten year period from 2005
13 through 2014, as well as a new DSM Plan for meeting the proposed goals, in a filing
14 with the Commission as part of Docket No. PSC-040031-EG. Over the five
15 years from 2005 to 2009 the proposed conservation goals are generally lower than the
16 existing set of goals, reflecting less available savings from demand-side resources.
17 The proposed new conservation goals were approved by the Commission in Order
18 No. PSC-04-0769-PAA-EG, Docket No. PSC-040031-EG, on August 9, 2004. The
19 new approved conservation goals will lead to an increase in PEF's firm winter and
20 summer peak demand.

21 Approximately 389,000 customers participated in the Energy Management
22 program in the Company's DSM plan at the end of 2006, contributing about 755,000
23 kW of winter peak-shaving capacity for use during high load periods.

1

2 **Q. Can you please provide a general description of the Company's transmission**
3 **and distribution facilities?**

4 **A.** Yes. PEF is part of a nationwide interconnected power network that enables power to
5 be exchanged between utilities. PEF has approximately 5,000 circuit miles of
6 transmission lines including about 200 circuit miles of 500 kV lines and about 1,500
7 circuit miles of 230 kV lines. PEF has distribution lines of approximately 35,000
8 circuit miles, including about 13,000 circuit miles of underground cable. Distribution
9 and transmission substations in service have a transformer capacity of approximately
10 45,000,000 kVA in 614 transformers. Distribution line transformers numbered
11 356,930 with an aggregate capacity of about 18,000,000 kVA.

12

13 **Q. Please describe the CR3 unit.**

14 **A.** CR3 is the Company's nuclear unit. It was the third unit built at the Crystal River
15 site, which is a 4,700 acre site located in Citrus County, Florida. The other units
16 located at the Crystal River site are all coal-fired units (Crystal River Units 1, 2, 4,
17 and 5). The CR3 unit is a pressurized water reactor that currently generates
18 approximately 900 MWe. A more detailed description of the CR3 unit is provided in
19 the amended testimony of Mr. Roderick.

20

21 **Q. What is the CR3 power uprate project?**

22 **A.** The CR3 power uprate project consists of three stages of modifications and efficiency
23 enhancements that will increase the power output of CR3 from about 900 MWe by

1 180 MWe to 1,080 MWe. The CR3 power uprate project will be performed during
2 the scheduled refueling outages for the CR3 unit in 2007, 2009 and 2011. Additional
3 detail about the CR3 power uprate project is contained in the amended testimony of
4 Mr. Roderick.

5
6 **IV. BENEFITS OF THE CR3 POWER UPRATE PROJECT**

7
8 **Q. Please describe how the CR 3 power uprate will benefit PEF's customers.**

9 **A.** There are two important ways that increasing the amount of nuclear energy available
10 to PEF customers will provide benefits (1) decreased system fuel costs and (2) a
11 lower need for new capacity in the future. By increasing the amount of power
12 available from CR3, additional energy will be produced, and nuclear energy is the
13 lowest cost energy available to the system. Additional energy from the unit will
14 displace energy from other, higher cost, generation sources that would otherwise be
15 used to meet the total demand for electricity, resulting in substantial fuel savings to
16 the system, which translates to lower fuel charges to customers.

17
18 **Q. Can you estimate the prospective fuel savings to PEF's customers?**

19 **A.** Yes. Using a detailed production costing model, I have calculated the expected
20 savings resulting from the combined uprates of 12 MW in January of 2008, 28 MW in
21 December of 2009, and 140 MW in November of 2011. The results of the analysis
22 are shown in my amended Exhibit No. ____ (SSW-1). As shown in this exhibit, the
23 total nominal fuel savings for the years 2009 through 2025 are more than \$1.4 billion.

1 If we look out through 2036 (when the license extension will end), we expect
2 nominal savings to exceed \$2.6 billion.

3
4 **Q. What are the costs associated with the increased rating to CR3?**

5 **A.** There are three components to the costs associated with the proposed increase in
6 rating. First, there are the costs associated with the power uprate itself, and Mr.
7 Roderick has identified total costs of approximately \$250 million. Second, there are
8 the costs for additional cooling at the site, and the costs are estimated at \$43 million,
9 according to Mr. Roderick. Third, additional transmission requirements to
10 accommodate the power increase will result in a cost of approximately \$89 million, as
11 explained by Mr. Roderick. The total costs to achieve the benefit of the full 180 MW
12 power increase is estimated to be \$381.8 million.

13
14 **Q. Does the rating increase to CR3 provide savings to PEF customers?**

15 **A.** Yes. I have compared the net present value of savings to costs in my amended
16 Exhibit No. ___ (SSW-2), which shows a net benefit of approximately \$320 million
17 NPV to the retail customer. This amount has been updated since my original direct
18 filed testimony to consider the early addition of 12 MWe from the initial MUR
19 (Measurement Uncertainty Recovery) phase being completed at the end of 2007 as
20 opposed to 2009. The reasons for the change in timing are discussed in detail in the
21 Amended Direct Testimony of Daniel L. Roderick. As we updated our calculations
22 for this change, we noticed that the calculation of AFUDC had a formula error in the

1 outer years. This error has been corrected and the effects are included in the revised
2 numbers in amended Exhibit No.__(SSW-2).
3

4 **Q. How does the increase in ratings reduce the need for new capacity in the future?**

5 **A.** PEF plans to a 20 percent reserve margin, so each additional MW that is available
6 from CR3 reduces the need for one MW of new capacity to maintain the same reserve
7 margin. The 180 MW of "new" capacity that will be available therefore reduces the
8 need for 180 MW of capacity beyond 2011.
9

10 **Q. Have you quantified the value of the capacity benefit provided by the increase in
11 rating?**

12 **A.** No. To be conservative, I have not added these benefits, but there is no question that
13 the additional capacity will reduce future needs. The 180 MW is roughly equivalent
14 to one new combustion turbine eliminated from the future capacity plan. The real
15 need for the CR3 power uprate project however, is economic, not reliability. As I
16 have explained, the total nominal fuel savings will exceed \$2.6 billion and the present
17 value of net savings to retail customers will be approximately \$320 million. There is
18 no other generation alternative available to the Company that can provide an
19 additional 180 MW of reliable, base load energy at a net savings to PEF's customers.
20 The CR3 power uprate project is, therefore, cost effective even without consideration
21 of the additional capacity benefits.
22

1 **Q. Are there other benefits provided by the CR3 unit power uprate?**

2 **A.** Yes. Not only is nuclear energy the lowest cost energy available to the system,
3 history has shown that the nuclear fuel commodity (uranium) is more stable in price
4 than gas or oil and lately even coal, and this stability will help to reduce the overall
5 fuel price volatility to PEF's customers. Consider, for example, that a 10% change in
6 nuclear fuel prices might result in a change in the energy delivered from a nuclear unit
7 of 50 to 75 cents per MWh, while a 10% change in gas prices might result in a change
8 in energy delivered from a combined cycle unit of 5 to 7.5 dollars, based on prices
9 recently experienced. Beyond the impact that equal percentage changes in fuel prices
10 may have on the customer bill, clearly oil and gas prices have been extremely volatile
11 in recent times, with natural gas prices varying by as much as 50% just in the last
12 year.

13 In addition to the cost impacts, there is also a value to increasing fuel diversity
14 and lessening dependence on oil and gas in the Company's overall fuel mix. Even a
15 relatively small increase in the nuclear capacity contributes to a decrease in the
16 exposure of the system, and therefore customers, to interruption in natural gas, oil and
17 coal supplies.

18
19 **Q. Was the CR3 power uprate project included in the Company's TYSP filed with**
20 **the Commission in April 2006?**

21 **A.** No, it was not. At the time the CR3 power uprate project was developed, during the
22 Company's preparation for the steam generator replacement and related work during

1 the upcoming nuclear fuel outages, the Company's future capacity needs had already
2 been identified for filing in the TYSP. The project, therefore, was not included in the
3 Company's reserve margin requirements and for that reason it was not included in
4 PEF's 2006 TYSP. As I have explained, the CR3 power uprate project is needed to
5 achieve the economic benefits of substantial fuel savings for PEF's customers and to
6 increase the Company's fuel diversity.

7
8 **Q. Does this conclude your testimony?**

9 **A. Yes.**

10

1 BY MS. TRIPLETT:

2 Q Mr. Waters, do you have a summary of your amended
3 prefiled testimony?

4 A Yes, I do.

5 Q Would you please summarize your testimony for the
6 Commission?

7 A Yes. Good afternoon, Commissioners. The Crystal
8 River 3 power uprate will provide customers substantial fuel
9 savings of over \$2.6 billion for the extended life of Crystal
10 River 3. It will enhance fuel diversity on Progress Energy
11 Florida's system and in the State of Florida. The Crystal
12 River 3 power uprate provides retail customers an estimated net
13 fuel savings benefit when compared to the costs of the power
14 uprate of \$320 million on a net present value basis.

15 In addition, Progress Energy Florida's customers
16 receive additional reliable baseload capacity from the lowest
17 cost fuel generation source available to PEF. All of these
18 benefits demonstrate the clear value of the CR3 power uprate to
19 PEF's customers and support the company's request that the
20 Commission grant its petition for cost recovery.

21 By increasing the amount of power available from
22 Crystal River 3, additional energy will be produced. Because
23 nuclear energy is the lowest cost energy available to the
24 system, this additional nuclear energy will displace energy
25 from other higher cost generation sources that would otherwise

1 be used to meet the total demand for electricity. This will
2 result in substantial fuel savings which translates into lower
3 fuel charges to customers. Using a detailed production costing
4 model I calculated the expected savings resulting from the
5 combined uprates of 12 megawatts in January of 2008,
6 28 megawatts in December of 2009, and 140 megawatts in November
7 of 2011. The total nominal fuel savings for the years 2009
8 through 2025 are more than \$1.4 billion. If we look out
9 through 2036 when the license extension for Crystal River 3
10 will end, we expect nominal savings to exceed \$2.6 billion.
11 Reduced to net present value, this represents fuel savings of
12 about \$640 million to Progress Energy Florida's customers.
13 With the uprate costs taken into account, the expected net
14 benefit to customers is \$320 million.

15 The need for the Crystal River 3 power uprate project
16 is an economic one, not a reliability need. The total nominal
17 fuel savings will exceed \$2.6 billion, and the present value of
18 net savings to retail customers will be approximately
19 \$320 million. There is no other generation alternative
20 available to the company that can provide an additional
21 180 megawatts of reliable baseload energy at a net savings to
22 Progress Energy Florida's customers. The CR3 uprate project is
23 beneficial to customers and the company's petition should be
24 approved. Thank you. That concludes my summary.

25 MS. TRIPLETT: We tender Mr. Samuel Waters for

1 cross-examination.

2 CHAIRMAN EDGAR: Thank you.

3 Mr. McGlothlin.

4 CROSS EXAMINATION

5 BY MR. MCGLOTHLIN:

6 Q Mr. Waters, one component of the calculation of fuel
7 savings that you are sponsoring would be the cost of the uprate
8 project; is that correct?

9 A That's one component of net savings. That's true,
10 yes.

11 Q And that would incorporate the, the cost of the MUR
12 portion, the cost of the steam efficiency portion and the cost
13 of the enhancement to the nuclear core; is that correct?

14 A As I understand the definition of those projects,
15 that's correct.

16 Q Also the cost of the transmission upgrades associated
17 with the project?

18 A Yes.

19 Q And the point of discharge aspect of the project?

20 A Yes.

21 Q Now do I understand correctly that those estimates of
22 costs were provided to you, that you did not independently
23 estimate the costs?

24 A That's correct.

25 Q Would you agree that the accuracy of your calculation

1 of fuel savings depends on the accuracy of the estimates that
2 went into, estimates of costs that went into it?

3 A Yes. I think that's always the case. These are
4 estimates based on forecasts and estimates. That's true.

5 Q And another component of the calculation of fuel
6 savings would be the assumptions you incorporated regarding the
7 cost of fuel in the future; correct?

8 A That's correct.

9 Q And we're speaking not only of nuclear fuel, but also
10 of oil, gas, coal, all fuels that are consumed by the company
11 in producing electricity over time.

12 A Yes, that's correct. And all of our estimates are
13 consistent with our normal planning process and the way we
14 develop our resource plan that goes into the Ten-Year Site
15 Plan, for example.

16 Q Now with respect to your reference to the normal
17 planning process, do I understand correctly that typically the
18 company prepares a fuel forecast covering 20 years for its
19 general corporate purposes?

20 A Yes. Generally that's correct.

21 Q And that's why you have as one reference point the
22 year 2025 because that's as far into the future as the 20-year
23 forecast of fuel prices extends; correct?

24 A That's correct.

25 Q But you've also included values extending through

1 2036 because that is the expected life of the project or the
2 expected termination point of the license to operate the
3 nuclear unit; correct?

4 A The extended license, yes.

5 Q Now do I understand correctly that with respect to
6 the years after 2025 and through 2026 the company has not
7 prepared a forecast of fuel prices per se, and so you therefore
8 simply trended through 2036 the, the patterns that you saw
9 prior to that point in time?

10 A That's correct. We trended the last ten years based
11 on the fuel savings we saw generated in the earlier years.

12 Q So for each of the years 2026 through 2036 there is
13 no effort at analysis or rationale or expectation per se for
14 the price of fuel that's attributed to those years.

15 A To clarify, when you say there's no rationale, I
16 think the rationale is a trending based on what we see in fuel
17 price trends prior to that time and the production cost model
18 prior to that time. So there is a rationale to it, but it is
19 not based on specific fuel price forecast during that period.
20 That is true.

21 Q Would you agree that with respect to projections of
22 fuel costs, the farther into the future one projects, the
23 greater the uncertainty attached to that projection?

24 A Generally I would agree. And I think, just to be
25 clear, that's the whole purpose of net present valuing. It

1 places more weight on the early years than on the later years.
2 So while we're more uncertain of the later years in the
3 analysis, the value added in the later years is heavily
4 discounted in the, in the net present value calculation.

5 Q So would the answer to my question be, yes, there's a
6 greater uncertainty?

7 A Yes. Yes.

8 Q If you know, would you agree that one justification
9 for a special cost recovery clause mechanism for recovering
10 fuel costs is the volatile nature and the unpredictable nature
11 of such costs?

12 A I don't know. I think any cost recovery questions
13 would have to be directed to Mr. Portuondo.

14 Q You have no opinion on whether that's one of the
15 justifications cited for having a separate fuel clause?

16 A I don't know.

17 Q If you know, did the estimates of project costs that
18 were provided to you take into account the impact of
19 retirements of existing facilities?

20 A I do not know.

21 Q If you know, did the estimates of cost, project costs
22 provided to you take into account the impact of the project on
23 decommissioning costs?

24 A There was nothing explicit in those estimates, so I'm
25 not aware of any.

1 Q In your prefiled testimony and also in your summary
2 you referred to some nominal values and also to net present
3 value of fuel savings. And the notes I took were that through
4 2025 the projection is that there will be 1.4 billion nominal
5 dollars of fuel savings and through 2036 the expectation is
6 that figure will be \$2.6 billion nominal; is that correct?

7 A Yes. The \$1.4 billion is through 2025. \$2.6 billion
8 through the 2036 period.

9 Q Now do I understand correctly that the term "nominal"
10 means that one values a dollar in 2025, say, to use an example,
11 in the same manner that one, a person would view it in the Year
12 2025?

13 A I don't want to confuse the issue, but a dollar is a
14 dollar. Nominal dollars is just simply adding up the dollars
15 spent in each year without any recognition that a dollar in
16 2025 might be less valuable than the dollar today or have less
17 buying power, for example.

18 Q But, in fact, the expectation is that a dollar in
19 2025 will be less valuable than a dollar in 2007; correct?

20 A That's where the net present valuing comes in.
21 That's what we do is discount it.

22 Q Yes, sir. A step at a time.

23 Do I understand correctly that the dollar in 2025 is
24 deemed to be less valuable than a dollar in 2007?

25 A In the economic analysis, that would be correct.

1 Q And so when you're speaking in terms of nominal
2 dollars, the nominal dollars do not take into account the time
3 value of money and the fact that in 2007 a future dollar is
4 worth less than a dollar currently.

5 A That's correct.

6 Q And when you speak in terms of \$320 million, that is
7 the result after applying the discount to recognize the time
8 value of money and to reduce the value of nominal dollars to
9 the present.

10 A Yes.

11 Q Would you agree --

12 A Although, just to be clear, that's not the equivalent
13 of the \$2.6 billion. When you say the \$320 million, you're
14 talking about the net savings number?

15 Q Yes.

16 A Okay. It's not -- the \$2.6 billion is nominal fuel
17 savings. The \$320 million is net present value net savings,
18 which includes the cost. I believe the comparable number to
19 the \$2.6 billion is about \$640 million.

20 Q Yes. Thank you for that correction. I do have that
21 note.

22 And so the, the net present value of the nominal
23 dollars projected for fuel savings represents the discounting
24 of all those fuel savings through 2036; correct?

25 A Correct.

1 Q Including the 11 or 12 years for which there is no
2 explicit forecast of the fuel prices and for which you simply
3 applied a trending approach to, to arrive at a value there.

4 A That's correct.

5 Q Are you familiar with the concept of a midcourse
6 correction that is used in the regulatory proceedings before
7 the PSC?

8 A Generally, yes.

9 Q And would you agree with me that a midcourse
10 correction is the procedure used when a forecast of fuel prices
11 in the next year is off by 10 percent or more and there is a
12 need to make an adjustment?

13 A I'm not intimately familiar with the conditions that
14 generate a midcourse correction. But to be clear, I would say
15 I think you're talking about fuel costs rather than fuel
16 prices. It's not just the fuel prices that might be off, it's
17 the generating patterns. There are any number of reasons that
18 total fuel cost on the system might be off 10 percent or more
19 beyond prices.

20 Q Would it be fair to say that in projecting fuel
21 savings you take into account not only fuel prices but also
22 everything else that affects fuel costs?

23 A Yes.

24 MR. MCGLOTHLIN: No further questions.

25 CHAIRMAN EDGAR: Thank you.

1 Mr. Wright.

2 MR. WRIGHT: No questions, Madam Chairman. Thank
3 you.

4 CHAIRMAN EDGAR: Mr. McWhirter.

5 CROSS EXAMINATION

6 BY MR. McWHIRTER:

7 Q Mr. Waters, you stated that the nominal fuel savings
8 will be \$2.6 billion. What percent of the total amount of
9 money spent on fuel is \$2.6 billion?

10 A I really don't know. I haven't done that
11 calculation. I'd have to go back and look at the total over
12 the 30-year period.

13 Q Well, in the current year what is your company
14 spending in total for fuel?

15 A I don't know the exact number. That would be part of
16 our fuel cost recovery filing.

17 Q If you'll look at your testimony entitled -- on
18 May 4 you had an Exhibit SSW-1.

19 A Yes.

20 Q And your total fuel costs there without the uprate is
21 what amount of money for the year 2008?

22 A 2008 without the uprate is a little over \$3 billion.

23 Q So would it be unfair to assume that if you
24 multiplied that number by 30 years, you'd come up with
25 something like \$90 billion even if there's no increase in fuel

1 costs?

2 A You could do that, sure.

3 Q And would it also be fair to say that \$2.6 billion is
4 a relatively small percentage of the total fuel costs that will
5 be expended over that period of time?

6 A I would not characterize it that way. Small is in
7 the eyes of the beholder, I guess. I would characterize
8 \$2.6 billion as a substantial savings.

9 Q And that's the savings that occur before you take
10 into consideration the capital cost expended to achieve those
11 savings; is that correct?

12 A That's correct. The \$2.6 billion is just fuel
13 savings.

14 Q So to be fair, you don't have to take into
15 consideration the amount of money that you spend in order to
16 get those savings. And when you redo the calculation, it's not
17 \$2.6 billion, but it's something like \$320 million over 36
18 years?

19 A That is the net present value. That's not really
20 redoing the calculation. It's recognizing the time value of
21 money and saying that's the net savings to customers.

22 Q Go to Page -- I'm looking at your May 4th testimony,
23 and on Page 6 of 13 at Line 11 you say that existing capacity
24 includes one 788 megawatt nuclear steam unit. But in this case
25 we talked about a 900 megawatt steam unit being upgraded to

1 1,080. What is the reason for the use of 788 megawatts?

2 A Just following that statement, the parenthetical on
3 Lines 11 and 12, it says it reflects the company's ownership
4 interest in CR3. The unit is a 900-megawatt unit. The portion
5 that we own and that is dedicated to our customers, Progress
6 Energy Florida's customers, is 788 megawatts.

7 Q And the proposal before this Commission is that the
8 Florida retail customers pay the entire cost of the uprate?

9 A The proposal is both -- yes. The proposal is both
10 that they would pay for the uprate, but they would also receive
11 all the benefits of the uprate the way the analysis has been
12 done. So there is a one-to-one correspondence there between
13 the cost and the benefits.

14 Q How are you able to cut off your co-owner share of
15 their entitlement to energy coming out of that unit?

16 A I don't think there's any suggestion we've cut off
17 the co-owner share. This question probably would have been
18 better addressed to Mr. Roderick, but there are discussions on
19 going with co-owners to see how the co-ownership shares will be
20 resolved.

21 We've presented it as if we have owned the entire
22 share. It is possible going forward that the co-owners may
23 decide to take their ownership share of the uprate also.

24 Q So if they do, ultimately the costs that you will
25 seek to collect from retail consumers will be less?

1 A That would be correct.

2 Q On that same page at Line 20 you talk about
3 414 megawatts from coal-fired Miller and Scherer plants in
4 Georgia; is that correct?

5 A Yes. I believe the Miller plant is actually in
6 Alabama, but they are Southern Company units.

7 Q My recollection of the testimony when those contracts
8 were approved was that the energy you were purchasing was not
9 all coal but there was some combined cycle energy that was
10 included in those plants; is that correct?

11 A I think the difference is the current contract, what
12 we're buying from today, and you're probably thinking of the
13 contract extension which goes from 2010 on, there is a combined
14 cycle portion piece beyond 2010.

15 Q Of the -- after 2010, of the 414 -- are you still
16 purchasing 414 megawatts?

17 A I believe the total is about 424 megawatts. It's
18 350 megawatts from the Scherer units and about -- or, excuse
19 me, 350 megawatts from the Franklin combined cycle and
20 74 megawatts roughly from the Scherer facility.

21 Q So the vast amount of the energy that will be coming
22 to Florida from Georgia will, will be from a gas-fired combined
23 cycle unit rather than a coal-fired unit; is that correct?

24 A I can say the vast majority of the capacity. Energy
25 I'd have to look at because combined cycle obviously doesn't

1 run all hours. But I would say that probably most of the
2 energy, although not the vast majority, is coming from the
3 combined cycle.

4 Q And these combined cycle plants in Georgia, in order
5 to get a firm commitment that you will be entitled to that
6 power, do you have to make a capacity payment?

7 A Yes.

8 Q So what, what is the term of that contract? Is it
9 another ten years or shorter?

10 A It's a five-year contract with an option to extend
11 the combined cycle portion of it two years beyond the five-year
12 term.

13 Q And how did you take those plants into consideration
14 when you made your calculations with respect to fuel savings?

15 A They are basically in both the study without the
16 uprate and the study with the uprate. In other words, they are
17 part of the resource plan because they're under contract.

18 Q You're planning to purchase that power for the next
19 30 years or for a shorter period of time?

20 A No. It would be a shorter period of time. And
21 the -- what we would do in the resource plan is when contracts
22 expire, we show a self-build replacement typically for the
23 contract in the plan.

24 Q So the contract will expire in 2015 and you're going
25 to replace that with a plant that you're going to build; is

1 that correct?

2 A Just to be very precise, I think the, the combined
3 cycle portion of the contract is assumed to extend because we
4 do have that option. And at that point, which would be around
5 2017, we would be showing replacement for that capacity.

6 Q What consideration did you give to the capacity
7 payments that you're making to Georgia when you calculated the
8 fuel savings?

9 A None, because it's the same fixed cost in both the
10 case with the uprate and without the uprate. So basically when
11 we're looking for a differential, which is what we're calling
12 the net savings here, the differential in payments would be
13 zero. We pay both ways.

14 Q Let me think out loud along with you.

15 Is it your proposition that you can build a power
16 plant and pay the full cost of that power plant, and then build
17 another power plant that's less expensive and pay the full cost
18 of that power plant so you're making payments on two power
19 plants, but sometimes you can back down the power from number
20 one and generate savings by running the other one full bore,
21 but you don't have to consider the capital costs that go into
22 the first power plant?

23 A Not as a change. I mean, looked at -- let me see how
24 I can explain the overall power system. Just take in the
25 extreme, for instance, combustion turbines on the, on the

1 system, they're there for reliability, they only run a few
2 hours a year. Obviously the fixed cost of that gets paid
3 throughout the year. The energy cost is only a few hours a
4 year. The fact that they may run 100 hours or 200 hours in
5 different scenarios, we capture the energy impact of that. But
6 the fixed cost component of that is irrelevant in looking at
7 two different scenarios because it is a fixed cost. The gas
8 turbines are already there and already being paid for in both
9 scenarios. You can't back out existing capacity or for that
10 matter existing contracts; you can't just stop paying because
11 you've done something after that.

12 Q Well, you just entered into these contracts last
13 year, didn't you?

14 A The extension?

15 Q Yeah.

16 A I have to look. I think the contracts were done at
17 the end of 2005, but I'd have to go back and look at the exact
18 date.

19 Q But at that point in time you made a decision to buy
20 power from Georgia and then at a later time you made a decision
21 to add 180 megawatts to your Florida nuclear plant; is that
22 correct?

23 A At a later time, that's correct. I mean, that's,
24 that's always part of the planning process. There are always
25 things that happen at a later date. The decision to extend a

1 contract or pursue a self-build option is made on the available
2 alternatives at the time, and we pursue what is going to be
3 lowest cost to customers at that time.

4 We can't forego a decision on the premise that
5 something better may come along at a later date. Because we
6 have to commit, for example, in the case of the Southern
7 contracts, we're talking about it extending in the year 2010.
8 The alternatives we knew about at that time to that contract
9 would have been self-build options which required at least the
10 amount of time between 2006 and 2010 to complete, for example,
11 adding combustion turbines or combined cycle instead of
12 extending that contract. We would have had to act at that time
13 to pursue those alternatives.

14 Q Well, you are going to finish this plant in 2011.
15 Could the nuclear uprate have been used to improve your
16 reliability in lieu of the purchases in Georgia?

17 A No. It was not an option at that time. It also
18 is -- it's 180 megawatts versus the 414 megawatts we're talking
19 about, so it would only fill part of the capacity. Even if
20 we'd known about it, it would have only filled part of that
21 capacity need. But it was not -- it was not in consideration
22 at the time we did the Southern contract.

23 Q Well, the fact that this plant is in existence
24 enabled you to postpone or -- yeah, postpone the construction
25 of 140 megawatts of power within your own service area?

1 A Well, it's 180 megawatts. And I think, yes, the
2 answer in the long run is that it eventually will take the
3 place of the equivalent of 180 megawatts of capacity in our
4 system.

5 Let me explain that a little. I think the, one of
6 the problems we have here is the project is so large it tends
7 to confuse whether it's a capacity addition or an energy
8 addition.

9 If we look at the phases, for example, the first
10 12 megawatts, I don't think there's much question that it
11 provides an energy benefit and it probably is not a capacity
12 addition because we, our load is growing about 200 megawatts a
13 year. So 12 megawatts is not going to meet even one year's
14 load growth. Even the 40 megawatts, the first two phases,
15 would not do that. It's not until you get to the third phase
16 where it becomes large enough you might consider it a capacity
17 addition.

18 What I can say about this though that differentiates
19 it from all the other, the contracts, the self-build options
20 and so on, this provides net fuel savings beyond the cost of
21 the project. New generating units that we add to meet the
22 20 percent reserve margin do not do that.

23 Put another way, if I had not one megawatt of need
24 going forward, my load was not growing, I had no need for new
25 capacity, this project would still make sense to save customers

1 money because it provides energy savings and fuel savings on
2 the system.

3 Q But according to your studies, you do, in fact, have
4 need to build additional capacity, don't you?

5 A Yes. And I've referenced that in my testimony. I
6 say that is an additional benefit to this 180 megawatts. We're
7 not denying that it contributes to capacity; it does, and that
8 is an additional benefit. But the primary benefit here and the
9 primary purpose here is an economic benefit to customers.

10 Q In your department do you have any responsibility
11 over the requirement to construct transmission lines as well as
12 generation?

13 A As you've asked the question, I currently do as of
14 April for the Carolinas. I have no responsibility for Florida
15 transmission. At the time this study was done in the part of
16 it I oversaw I did not have any responsibility for transmission
17 and still don't in Florida.

18 Q And do you know of your own knowledge whether or not
19 the energy that flows from Georgia to Florida comes over the
20 transmission line that's part of this uprate case?

21 A The, if the line was built -- I guess to be clear,
22 since the line doesn't exist, I can't say any power flows from
23 Georgia at this point. If the line was built, there may be
24 some megawatts that flow over that line. I don't know.

25 The purpose of the line, I think, as Mr. Roderick

1 made clear, has to do with a reliability concern of what
2 happens when the unit trips offline and we have an
3 instantaneous response in the system. As he described it, the,
4 the interconnected grid, really the whole east coast of the
5 U.S., all the generating units are set up to automatically
6 respond to contingency loss of units. We have to have
7 transmission capability to deliver that when those
8 contingencies occur, and that's really what we're talking about
9 here is the transmission required to do that.

10 Q Well, you're the one that's responsible for filing
11 the Ten-Year Site Plan for your company, and do you pay
12 attention to the staff review that is given to that Ten-Year
13 Site Plan?

14 A Yes.

15 Q And are you aware that the staff review in 2006 had
16 some concern about transmission constraints in North Florida?

17 A I saw the exhibit that was passed out previously and
18 I'm aware that they've referenced it. But I'm not aware of any
19 relationship at all to the current discussion and the projects
20 we're talking about.

21 Q Have -- your company is obviously the only one that
22 has knowledge of its transmission requirements. Have you -- is
23 there any witness in this case that can tell us whether or not
24 that transmission line benefits any other aspect of your
25 operations other than the need to provide available power in

1 the event that CR3 goes down?

2 A No.

3 Q There's no one in this case that's going to help us
4 with that?

5 A No. I think the only thing we can address and
6 Mr. Roderick did address was the relationship of that project
7 to this uprate.

8 Q Do you have the same problems if you have a forced
9 outage of CR3 at 900 megawatts that you do if it's at
10 1,080 megawatts?

11 A No. I believe Mr. Roderick covered that. When it
12 becomes the largest unit in the state, it changes the way it
13 has to be considered for planning purposes.

14 Q From your experience and background, do you know
15 anything about the way energy flows?

16 A Roughly, I guess, is a general response. Yes.

17 Q Well, my plebeian knowledge is that if a generator
18 goes down, replacement power must come into your system from
19 another source or from other units in your system; is that
20 correct?

21 A Actually from, it comes from a number of sources, not
22 just generators in your own system. Over, over a period of
23 time, yes, it has to be made up from your own system, but
24 instantaneously it comes from other systems. And in Florida we
25 have a reserve sharing agreement where everyone agrees that

1 they will provide or stand ready to provide a certain number of
2 megawatts based on the largest unit loss. So it's prescribed
3 as to where a lot of those megawatts will come from on a very
4 short-term or instantaneous basis.

5 Q And you know that if you lost 900 megawatts, it would
6 not have an adverse impact on the North Florida Transmission
7 Line. How do you know that?

8 A That's based on transmission studies that have been
9 done. I don't personally know that. But I know that the
10 transmission planning process accounts for that as one of the
11 contingencies they have to plan the system for. So that should
12 be done as part of the FRCC process.

13 Q Mr. Waters, I put before you a document entitled
14 "Extract from the 2005 Ten-Year Site Plan," and it's ID 22. On
15 the document, the comprehensive exhibit list we got this
16 morning the ID number is 21. If you don't mind marking it that
17 way. And this is a composite exhibit that is composed of
18 extracts from 2005, 2006 and 2007.

19 A Okay. I have that.

20 Q And these are, these are prepared under your
21 direction and supervision?

22 A The site plans, the original site plans, yes.

23 Q All right. Let's look at Page 1-3, and that page
24 shows your service area.

25 A Yes.

1 Q And Citrus County is about right in the middle of
2 your service area?

3 A Yes. On the west coast, right.

4 Q And as I understand it, the transmission line in
5 question is going to run 34 miles from somewhere in Madison
6 County to somewhere in Taylor County?

7 A I believe that's correct, yes.

8 Q All right. Now the next page is Schedule 1, and it's
9 Schedule 1 on each one of these reports, but that shows the
10 capacity that was in your system as of December 31st, 2004, and
11 then the next report shows what's happened in 2005 and so
12 forth. And you do that every year; is that correct?

13 A Yes.

14 Q And the purpose of that -- you used to have a
15 retirement date, but I notice that's been left off in recent
16 years. What's that all about?

17 A We don't have any planned retirements in the system,
18 at least in this report.

19 Q I see. And in Column 10 it shows when those units
20 were built. For instance, the Suwannee River unit was built in
21 1953. And that's still in operation; is that correct?

22 A That's correct.

23 Q And I, I'm not going to ask you this.

24 Now Schedule 2.1, this shows the consistency -- I
25 don't know what the word I want is. It shows the number of

1 customers you have and each type of class and how much that
2 class consumes; is that correct?

3 A It, it -- there are two pieces to this form. It
4 shows a ten-year historical period and a ten-year projected
5 period for, by customer class. That's correct.

6 Q And in 2005, the year of this report, the members of
7 the residential class, they would consume 20,000 -- 20 megawatt
8 hours of electricity over the course of the year; is that
9 correct?

10 A In 2005 --

11 Q Yes, sir.

12 A -- you're looking at?

13 Q Yes, sir.

14 A That's 20,000 gigawatt hours of electricity in that
15 year. Yes.

16 Q But it would be -- okay.

17 CHAIRMAN EDGAR: Mr. McWhirter, before you move on,
18 Commissioner Skop, did you have a question at this point?

19 COMMISSIONER SKOP: I do, but I'll just reserve it
20 until he's done.

21 CHAIRMAN EDGAR: You want to wait until the end?

22 Okay. Excuse me. Go right ahead.

23 BY MR. McWHIRTER:

24 Q Is it appropriate to divide that by 12 to see what
25 the average monthly consumption would be?

1 A If you want to know, yes, if you want to know average
2 monthly consumption. Although I'd point out that there is a
3 lot of seasonal variability to the consumption.

4 Q I guess what I really, I guess, am looking for is
5 Column 6, and that shows 14,000 kilowatt hours a year, and that
6 would be a little over about, what is that, about 1,200, 1,200
7 a month would be the average --

8 A Right.

9 Q -- residential consumption?

10 A Yes.

11 Q And the purpose of this is to project what the
12 residential consumption is going to be in future years to help
13 you in planning what to build?

14 A That is part of the equation, yes. This is sales.
15 And ultimately we need both the energy that we will serve and
16 the demand we will serve. So there's another form that gets
17 into demand.

18 Q Okay. In 2005 for the year 2014 you anticipate that
19 the average kilowatt hour consumption per customer for the
20 residential customer will grow from what it was in 2005 by
21 another 1,000 kilowatt hours a year; is that correct?

22 A That's roughly correct. Yes.

23 Q And if you'll go over to the comparable schedule for
24 the year 2007, you're presently projecting that the residential
25 consumption in 2014 will be some 400 kilowatt hours a year less

1 than it is in your 2005 projection?

2 A Well, hoping that I have the right forms here, I
3 believe that's correct. Yes.

4 Q Schedule 2.1.

5 A Right. I just want to make sure I have the right
6 year since they're all together in one exhibit. But I think
7 that's correct. I'm looking at -- in 2014, in the 2007
8 document as presented here I'm seeing 15,144 kilowatt hours
9 versus 15,475 in the 2005 filing.

10 Q But then in 2015 it's going to jump up to, by 400
11 kilowatt hours a year and that would be more than you projected
12 for 2014 in the original schedule. Can you tell me how you
13 come by those numbers, how you can project what residential
14 customers' consumption is going to be then?

15 A Only generally. Since I don't do the load forecast,
16 I can only give you a general description.

17 The reason for the change between 2005 and 2007, I
18 think, is primarily due to the increased emphasis on
19 conservation that we see in our own programs. That's a part of
20 the resource plan and an increasing part of the resource plan.
21 So we would expect to be able to, due to our own activities and
22 potentially the price of electricity because of higher fuel
23 prices, we would expect to see an energy reduction on a per
24 customer basis.

25 The growth over time has to do with trends that we've

1 seen, have seen for some time and continue to see an increased
2 electrification, meaning more end uses available to customers.
3 An example of that is more computers per household, more
4 digital video recorders, there are all sorts of things that
5 generate that. Plus we see a trend in larger homes; we've seen
6 that for some time. So all those things go into, are taken
7 into account in developing the forecast. Again, I'm speaking
8 very high level here, but it's an attempt to capture all the
9 trends we see currently, the trends we've seen historically,
10 and account for those going forward in the sales forecast.

11 Q And so you anticipate that not only will consumption
12 go up, but demand will go up from each customer class, and you
13 deal with demand in Schedule 3.

14 A Yes. Let me look at Schedule 3. Yes. I don't think
15 we -- I don't know that we calculate a demand per customer.
16 But we do expect demand overall to go up just as energy is
17 going up over time, if for no other reason, even if it was
18 constant per customer, we show an increasing number of
19 customers over time. So even if all other factors were equal,
20 demand would go up.

21 Q Okay. So for 2005 in Schedule 3.1.1, which is your
22 base case, you suggested that the retail demand for all your
23 customers would be 10,382 megawatts; is that correct?

24 A I'm sorry. Where is that number? I'm trying to --

25 Q Okay. It's in Column 4. It's 2-7 at the bottom of

1 the page and the schedule is 3.1.1.

2 A Okay. You're looking at the 2014 number?

3 Q Yes, sir.

4 A Okay. 10,382. Okay. I have that.

5 Q Now go to the same schedule for the year 2007. And
6 what do we see for that year?

7 A 10,968.

8 Q So you anticipate that your retail demand will go up
9 but your consumption will go down; is that correct?

10 A That -- yes. That is a function of the actual
11 demands we saw on the system in 2005 and 2006 were much higher
12 than we had forecast.

13 Q Uh-huh.

14 A So we had to reevaluate how we were doing the load
15 forecast and recognize that the demand was going up or had gone
16 up already. The load was already out there. The demand had
17 gone up much more than we had forecast. So that's one of the
18 primary causes of that change in the forecast demand is what we
19 had already seen as historical demand.

20 Q All right. Let's go, if you don't mind -- we're
21 still in 2005 and I'm about to wind this up. Go over to
22 Schedule 7, and that gives you a forecast at the time of summer
23 peak. Normally your system peaks in the summer as opposed to
24 the winter? Some years it's winter, but most of the time it's
25 summer?

1 A Historically it's been both. We project a winter
2 peak generally going forward if we get average weather, but I
3 think everyone knows in Florida weather in winter is extremely
4 variable. So some years we actually peak in the summer, but
5 going forward we forecast a winter peak.

6 Q Well, Schedule 7.1 shows that in 2005 you were
7 importing, including the power from Georgia, you were importing
8 799 megawatts, and in 2007 you plan to import 1,087 megawatts.
9 Is that right? Do you see that in Column 3?

10 A Okay. I see the 799. And you're saying in -- oh, in
11 2007. You're saying 2007 on the same form. Yes.
12 1,087 megawatts.

13 Q Now let's go to Schedule 7.1 for the year 2007, if
14 you will. And that original projection from 1,087 has now
15 jumped to 1,661 megawatts.

16 A Yes.

17 Q Do you know what decisions were made to, or why the
18 decision was made to import more capacity as opposed to
19 building generation?

20 A I can give you the primary reasons. The -- when we
21 say "firm capacity import," we're talking about buying from any
22 source outside our control area. So that does not necessarily
23 imply that we're buying from Georgia or anywhere else. It's
24 any source.

25 The factor I just talked about a moment ago about the

1 increase in the firm demand in the short-term in the forecast,
2 we saw actual demands on our system much higher than forecast.
3 In adjusting the forecast upward to account for existing load,
4 in order to maintain the 20 percent reserve margin that we
5 target for our system in the short-term, meaning the two- to
6 three-year horizon, we had to go make short-term purchases from
7 various sources to keep up with the load forecast basically.
8 So if you look at the pattern, the 2007 form, Schedule 7.1,
9 you'll notice that the first two years we're showing relatively
10 high amounts of firm import. Those are short-term purchases we
11 made to maintain 20 percent. And they basically drop off as we
12 add new self-build capacity and other sources to the system
13 over time.

14 Q Your -- when you calculate this reserve margin, is it
15 fair to say that you don't take into consideration the 389,000
16 customers that participate in your energy management program?

17 A No, it would not be fair to say. We base our reserve
18 margin on the net firm peak.

19 Q Right.

20 A So that is total demand less customers on
21 interruptible programs, residential load controls, so on. All
22 those are subtracted out before we calculate a net firm peak,
23 and the 20 percent is based on that final number, net firm
24 peak.

25 Q Well, let's go back to 3.1.1 again from 2005. And

1 for 2005 you had 633 megawatts of interruptible load from
2 industrial customers, I presume. Is that correct? And do you
3 count that 733 megawatts in calculating your reserve margin?

4 A The 633?

5 Q Yeah.

6 A Yes. If you look over at the far right-hand column,
7 net firm demand, and that will be the number that we use to
8 base our reserve margin on.

9 Q Well, but you show your retail sales at -- you show
10 your total sales at 9,500 megawatts and your retail at
11 8,500 and your firm at 8,100. So presumably something is
12 subtracted from your actual demand to obtain your net firm
13 demand; is that correct?

14 A Not -- well, it's subtracted from total demand to get
15 to net firm demand. Yes.

16 Q Well, isn't 633 subtracted from your total demand?

17 A Yes.

18 Q And isn't residential load management subtracted?

19 A Yes.

20 Q And residential conservation is subtracted?

21 A Yes. And all the other conservation and load
22 management and the column marked "Other Demand Reductions"
23 would be subtracted.

24 Q So aren't those 386,000 customers or 389,000
25 customers included in the people that are interruptible and

1 have demand-side management and so forth?

2 A Yes.

3 Q Yes?

4 A Yes.

5 Q All right. Now go to Schedule 8, if you would. And
6 based on your forecast in 2005, it looks like in 2007 you were
7 going to build 476 megawatts at Hines 5 and then you were going
8 to add 476 megawatts at Hines 6 and then another 476 in 2012,
9 2014, 2013 and 2014. Can you -- would it be fair to say that
10 that new capacity was being added in order to meet your
11 forecasted demand and consumption?

12 A Yes. And to maintain 20 percent reserve margin over
13 time. Yes.

14 Q Okay. Let's go to see what your plan is for 2008
15 with Schedule 8 for 2008, and that's the last page.

16 A Okay.

17 Q And Bartow is coming on and both Hines 4 -- or 5 and
18 6 have gone away; is that right?

19 A Yes.

20 Q So nine hundred and, what is it, sixty-62 megawatts
21 have gone away. And when Bartow is repowered, a net 715 will
22 come in. Is that fair to say?

23 A Yes. Summer capability. Yes.

24 Q Okay. So even though your load is growing, what
25 you've done is determined to build less and buy more; is that

1 right?

2 A In the time period you're talking about, yes, that's
3 correct, because the purchases were economic.

4 Q Now if you built those power plants, the investment
5 would go into your base rates or the return on that investment
6 would go into base rates; is that correct?

7 A Well, I believe that's correct pending a rate case.
8 But I -- in my analyses, just to be clear, I do not get
9 involved in the type of recovery on any of these.

10 Q All right. That's fair and I understand that. But
11 you do know that of your own knowledge or not?

12 A Yes.

13 Q Huh?

14 A Yes.

15 Q Okay. And do you know how you collect from customers
16 for the amount of capacity you buy as opposed to furnish with
17 your own units?

18 A Well, I think generally speaking it goes through the
19 capacity clause.

20 Q And it goes through the cost recovery, and not only
21 the energy cost but the capacity cost?

22 A I'm not sure how the energy costs are treated,
23 whether those are in fuel or not. But the capacity payments go
24 through the capacity clause and the energy may go through the
25 fuel clause. Mr. Portuondo could tell you the breakdown.

1 MR. McWHIRTER: All right. I tender the witness.

2 * * * * *

3 (Transcript continues in sequence with Volume 2.)

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1 STATE OF FLORIDA)
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I, LINDA BOLES, RPR, CRR, Official Commission Reporter, do hereby certify that the foregoing proceeding was heard at the time and place herein stated.

IT IS FURTHER CERTIFIED that I stenographically reported the said proceedings; that the same has been transcribed under my direct supervision; and that this transcript constitutes a true transcription of my notes of said proceedings.

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorneys or counsel connected with the action, nor am I financially interested in the action.

DATED THIS 13th day of August, 2007.

Linda Boles
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