BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 060635-EU

In the Matter of

PETITION FOR DETERMINATION OF NEED FOR ELECTRICAL POWER PLANT IN TAYLOR COUNTY BY FLORIDA MUNICIPAL POWER AGENCY, JEA, REEDY CREEK IMPROVEMENT DISTRICT, AND CITY OF TALLAHASSEE.
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VOLUME 10

Pages 1150 through 1213

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PROCEEDINGS:	HEARING
BEFORE:	CHAIRMAN LISA POLAK EDGAR COMMISSIONER MATTHEW M. CARTER, II COMMISSIONER KATRINA J. TEW
DATE:	Thursday, January 18, 2007
TIME:	Commenced at 10:35 a.m.
PLACE:	Betty Easley Conference Center Room 148 4075 Esplanade Way Tallahassee, Florida
REPORTED BY:	LINDA BOLES, CRR, RPR Official FPSC Reporter (850) 413-6734
APPEARANCES:	(As heretofore noted.)

I N D E X

WITNESSES

EXHIBITS

NUMBER:	ID.	ADMTD.

(REPORTER'S NOTE: No exhibits were marked or admitted in Volume 10.)

P R O C E E D I N G S

(Transcript continues in sequence from Volume 9.)

CHAIRMAN EDGAR: I call this hearing to order this morning. Welcome back. Glad to see you all gathered together with us again. I believe that where we left off when we concluded for the evening last week was that Witness Kushner had been tendered for questioning. Before we move to cross, is there anything else that we need to address?

MR. PERKO: Yes, Madam Chairman. Gary Perko on behalf of the applicants. We do need to make one minor change, correction to Mr. Kushner's revised rebuttal testimony, if we could do that, please.

CHAIRMAN EDGAR: Okay.

CONTINUED DIRECT EXAMINATION

BY MR. PERKO:

Q Mr. Kushner, I'd remind you that you have been sworn. Are there any changes you need to make to your revised rebuttal testimony?

A Yes. On Page 8, Line 13, the exhibit referenced should be "BEK-3R," and change "direct testimony" to "supplemental testimony."

MR. PERKO: Thank you. We'd just ask that that correction be made to the testimony that's already been admitted into the record.

CHAIRMAN EDGAR: Okay. Those changes will be noted

for the record.

MR. PERKO: Thank you.

CHAIRMAN EDGAR: Thank you.

Ms. Brownless, are you ready to begin cross?

MS. BROWNLESS: Yes, ma'am.

CHAIRMAN EDGAR: Okay.

CROSS EXAMINATION

BY MS. BROWNLESS:

Q Good morning, Mr. Kushner.

A Good morning, Ms. Brownless.

Q And I'm going to scoot up here so I can see you.

A Okay.

Q Did you prepare the responses to NRDC's first set of interrogatories numbers 1 through 26 numbers 22, 23 and 26?

A Yes, I did.

Q And are those -- and did you also provide the responses to NRDC's second set of interrogatories numbers 1 through 8 numbers 1 through 3 -- numbers 1 and 3? I'm sorry.

A Yes, I did.

MS. BROWNLESS: Okay. And for the record, Madam Chair, the NRDC's first set of interrogatories is Exhibit Number 108 and NRDC's second set of interrogatories is Exhibit 105.

BY MS. BROWNLESS:

Q At this time -- are these exhibits true and correct

to the best of your knowledge and belief?

A Yes, they are.

MS. BROWNLESS: Okay. And, Your Honor, that will complete all of the folks on the applicant side who have responded to all of the interrogatories contained in Exhibit 108 and 105. So we'll wait to the end to move that into the record.

CHAIRMAN EDGAR: That's fine.

BY MS. BROWNLESS:

Q Now, Mr. Kushner, I just want to take a minute to talk about kind of the basic scheme of the analysis that was done in this case. You started out developing a capacity and energy need for each applicant; is that correct?

A That's correct.

Q Okay. And then you developed a self-build option for each applicant to meet their own individual capacity and energy needs; is that right?

A A number of self-build alternatives were developed for each applicant, yes.

Q Okay. And those were the options that were developed by Mr. Klausner; right?

A That is correct.

Q Okay. And those were stated on his Exhibit CK-2, which I think has been identified as 53, and on Exhibit 3, revised Table A.6-37; is that right?

A Yes.

Q Okay. And all of the costs that reflected, that are reflected on all of these tables reflect the revised costs for TEC and also reflect the revised costs for all self-build supply-side options that are listed.

A That's correct.

Q Okay. Now when you got those all together, you ran the POWROPT program and the POWRPRO program using these different supply-side self-build options to develop the least-cost IRP plan; is that right?

A A least-cost capacity expansion plan was developed for each applicant. One --

Q As well as for the group as a whole.

A No, that's not correct.

Q Okay. So it was developed for each applicant.

A Correct.

Q And you modeled these different options to figure out what was least cost; right?

A That's correct.

Q Okay. And you came up with a chart, and I'm just going to hand it out, which is in Exhibit Number 3, and it's, that's TEC-1E. And I'll pass it out, Mr. Kushner.

And when you get this chart, Mr. Kushner, there are two handwritten things on it. There's Exhibit Number 3 up in the corner and there's a handwritten piece on the right-hand

side for each page that says "FMPA, JEA, RCID and Tallahassee." Now with the exception of those handwritten pieces, are these true and correct copies of these revised tables?

A The summary of sensitivity analysis tables are correct.

Q Okay.

A And if you'll give me a moment, I can check on Table A.6-37.

Q The last two pages. Sure.

A Table A.6-37 is correct also.

Q Okay. And the Tables A.6-37, Page 1 of 2 and 2 of 2, those reflect the details of the self-build options. Are those correct?

A That is correct.

Q Okay. And all of these numbers in here on both sets of tables reflect the higher cost for TEC; correct?

A The costs for TEC are not reflected in any of these tables. These are just the self-build alternatives to TEC.

Q Well, the first chart up here, expansion plan, CW.

A Okay. Yes. Yes. That's correct.

Q Right. That's the higher cost of TEC.

A Yes.

Q Okay. And the self-build options are higher costs for all of them.

A Yes, ma'am. Yes.

Q Okay. The very first chart on each one of the first four charts compares the least-cost self-build option IRP with and without TEC; is that correct? The first chart at the top.

A Yes.

Q Okay. And that's the same comparison for everybody, for FMPA, JEA, Reedy Creek and Tallahassee?

A Correct.

Q Okay. And the bottom line is the result of that comparison is that for JEA it is cheaper to go with their own self-build option, a second jointly owned pulverized coal unit, than with TEC and it's cheaper by $2.7 million; is that right?

A No, that's not correct.

Q Okay. Can you explain that chart to me?

A Yes. Correct me if I'm wrong, I think you're referring to one of the cases presented on the revised Table C.6-18, which is the low fuel price sensitivity.

Q Okay.

A In that sensitivity scenario, which is the only case for any of the applicants among the tables presented on this handout that show that TEC is not part of the least-cost expansion plan, the least-cost expansion plan for JEA includes a self-build CFB instead of participation in Taylor Energy Center.

Q Okay.

A So that is just one case out of all those.

Q So that's one sensitivity study in which you use low fuel prices in the model.

A That's correct. Yes.

Q Okay. And am I correct that it's cheaper by $12.7 million?

A Yes. That's correct.

Q Okay. Now can you tell me when you say CFB, is that a circulating fluidized bed coal plant?

A Yes. It's -- in the case for JEA it's a circulating fluidized bed unit that would be constructed at their existing North Side site, and it would use petroleum coke because that site currently has access to petroleum coke.

Q Okay. And what is the in-service date for that unit?

A December of 2012.

Q Okay. And if I look on Table A.6-37 under JEA brownfield options, Page 1 of 2, is that the circulating fluidized bed unit that's discussed there?

A Yes. Under JEA brownfield options. That's correct.

Q Yes. The one that says "250 megawatts CFB"?

A Yes. That's correct.

Q Okay. Now the -- you did a series of sensitivity analysis, and that's in the second set of charts on all the first four sheets; is that correct?

A No, that's not entirely correct. We -- I did a set of sensitivity analyses for each applicant.

Q Okay.

A The first line of the first table on each of those four pages on Exhibit Number 3 shows the, the base case analysis for each applicant.

Q Yes. Okay.

A All of the rest of the information presented there are representative of various sensitivity scenarios performed for each applicant.

Q Okay. Tell me the difference between -- I understand the first set of charts, okay, where it says base case, high fuel, low fuel, et cetera. Right? And then you ran your model modeling TEC in there, and the second one was with -- without TEC and then you got a differential; correct?

A Correct. Yes.

Q Okay. And that's putting TEC in the model with an in-service date of 2012; correct?

A May 2012. That's correct. Yes.

Q Okay. Now the sensitivities in the second set of charts for each applicant, how were they different?

A Okay. The sensitivities in the second set of charts for each applicant do not vary the input parameters. And by input parameters I mean our base case assumptions related to fuel price, emission allowance prices, load growth, capital costs, but instead provide the model the option to choose among various different supply-side alternatives.

Q Okay.

A For example, I looked at participation in a three-on-one combined cycle unit among the applicants' ownership shares in proportion proposed for Taylor Energy Center as a supply-side alternative to Taylor Energy Center. Going down that table then you can see a joint development integrated gasification combined cycle option was also analyzed, in-service date 2012, operating on 100 percent petroleum coke; gave the model the opportunity to choose among a second unit similar to Taylor Energy Center in the future; also looked at biomass alternatives and a sensitivity in which TEC operated on Powder River Basin coal and pet coke instead of Latin American coal and pet coke.

Q So the in-service dates for the three-on-one combined cycle, that was 2012?

A Yes, ma'am.

Q And the three-train IGCC, what in-service date was that?

A 2012.

Q Are they all 2012?

A No. Just the two joint development alternatives. Basically those alternatives would be viewed as direct alternatives to constructing Taylor Energy Center.

Q Okay. And then from there on down, second jointly owned pulverized coal unit, what in-service date would, would

that be?

A Each applicant was allowed to select a second jointly owned pulverized coal unit beginning as early as 2016.

Q Okay.

A The all natural gas capacity expansion plan, there were no constraints on the timing of any of the units included. The biomass supply-side alternatives assumed construction and operation of a biomass alternative in 2011, and the PRB, Powder River Basin coal for TEC assumed the operation of Taylor Energy Center in 2012 but just operating on a different fuel supply.

Q Got it. Okay. And then that second chart shows the results of these comparisons; correct?

A Yes, ma'am.

Q Okay. And when I look at the second jointly owned pulverized coal unit, I'm just looking at FMPA, the very first sheet, it appears to be a negative $365.4 million; is that correct?

A That's correct. What that represents is that if FMPA was given the opportunity to participate in a second jointly owned pulverized coal unit, for purposes of the model I used the greenfield capital cost estimate that was developed for Taylor Energy Center, similar O&M, operation and maintenance costs for a greenfield unit, similar fuel supply assumptions, that if FMPA were given the opportunity to participate in that unit in addition to Taylor Energy Center in 2012, the most

economical plan would be to select that unit and resulting in $365.4 million in cumulative present worth cost savings. So that case does include both Taylor Energy Center in 2012 and the ability to select a second large share -- a second share of a large supercritical unit in the future.

Q Okay. And the analysis, the basic explanation you've given for these sensitivity analyses is the same for JEA, the same for Reedy Creek and the same for Tallahassee?

A Yes. Although there's one exception I'd like to point out.

Q Sure.

A And that is on Reedy Creek's set of tables there is no all natural gas expansion plan.

Q Okay.

A Because their base case alternatives were all natural gas.

Q All right. Now all of the sensitivity analyses shown here in both the first chart and the middle chart model just one variable at a time, and by that I mean in your -- and I'm going to the first charts now. In your sensitivity case for high fuel prices, the only variable you change is a high fuel price; is that right?

A That's correct. Yes.

Q Okay. You don't have any -- there's no sensitivity study in which you modeled, for example, high fuel prices and

regulated CO2.

A That's correct.

Q Or any combination.

A Correct.

Q Okay. Now the third set of charts that you have here talks about comparisons of the base case to the bids received from the Southern Company; is that right?

A Yes. That's correct.

Q Okay. Now do these comparisons use new construction costs for the Southern Company bids or simply the numbers that Southern Company actually bid?

A The numbers that were provided by the Southern Company, yes.

Q Okay. And we heard Mr. Arsuaga talk about adjustments that he made to the Southern Company bid in their evaluation. Are those the numbers, Mr. Arsuaga's numbers that were used in this sensitivity?

A Yes. Similar adjustments were made to what Mr. Arsuaga spoke of for the Southern Company bids.

Q Okay. So you basically incorporated his adjustments into these sensitivities?

A Yes.

Q Or did you make your own? That's what I'm trying to figure out.

A No, I did not make my own. The only difference

between what Mr. Arsuaga discussed, he discussed emission allowance prices being added. I did that as well. But I based my emission allowance price adders on the emission allowance price forecast provided by Mr. Preston.

Q And that would be in his MP-5, his last --

A No. That would be the base case exhibit for Mr. Preston, which I don't believe was MP-5. It was the base case fuel forecast.

Q Okay. The base case fuel forecast, which I think was MP-2, did not have any CO2 emission allowances in it; is that correct?

A That is correct. Yes.

Q Okay. So this comparison does not have any CO2 emission allowance, allowances costs in it.

A Correct.

Q And the sensitivities for the bid used the new construction costs for TEC as well, right, when you were doing the comparison on the bid?

A Yes. The sensitivities for the bid reflect the, the new construction costs.

Q And those also don't reflect any CO2 emission allowance costs because your base case did not.

A That's correct.

Q Now with regard to demand-side management programs, is it a fair -- and this is a broad generalization -- to say

that demand-side management programs can reduce the capacity and energy demands for each applicant in this case?

A Not in a cost-effective manner, no.

Q We're not talking about whether it's cost-effective or not. I'm just saying as a general proposition can demand-side management programs reduce the capacity and energy demands for a utility?

A Yes.

Q Okay. And assuming that you have enough demand-side management that can be both cost-effective and effectively implemented, and by that I mean managed so that those programs produce the amount of savings that are forecasted, it can reduce or defer the amount of capacity needed in any given year; is that correct?

A That may be possible.

Q And so in the broadest sense demand-side management can be used as an alternative to building supply-side alternatives; is that right?

A In a very broad sense based on the previous assumptions you've outlined, yes.

Q Okay. And that means it can defer either the self-build options that were identified for each applicant or the TEC unit.

A Again, in the context of what you've previously outlined, yes.

Q Okay. Now obviously there's several different methods of analyzing whether a demand-side management program or portfolio of programs is cost-effective, and we've discussed basically two different approaches to that in this case. One cost, one method might be or is the City of Tallahassee's approach. And am I correct that that approach starts by screening programs on a dollar-per-megawatt-hour basis or the levelized cost basis over the life of the measure?

A That was the initial step taken. Yes.

Q Okay. And basically that analysis would be for each demand-side management program you determine what the dollar-per-megawatt levelized cost is and you compare that to the dollar-per-megawatt-hour cost of TEC; is that correct?

A No. That's not correct.

Q Okay.

A The levelized cost screening that you've outlined looks at levelized costs on a dollar-per-megawatt-hour basis, not per megawatt. And it's not appropriate to screen those costs against the costs of Taylor Energy Center because, as I believe Mr. Brinkworth explained, I think it was Friday of last week, you need to consider the duty cycles of the DSM measures versus the duty cycle of Taylor Energy Center.

Most DSM measures are going to provide savings during a time of peak periods; whereas, Taylor Energy Center will operate as a baseload unit at a 90 percent capacity factor. So

in that sense the duty cycles are drastically different.

Q Uh-huh. I understand what you're saying, but I just want to go back to a more fundamental concept here just so I can lay that out simply.

It's a dollar-per-megawatt-hour -- when the City of Tallahassee started looking at demand-side management programs, they figured out what the dollar-per-megawatt-hour cost was for those programs, and their very first initial step before they got to the second step that you've just described, which Mr. Brinkworth also described the further analysis, was to simply look at these programs and see which ones were less expensive than TEC's dollar-per-megawatt-hour cost. That was the very initial step.

A No, that's not correct. They were screened against like-duty cycles, not against TEC.

Q Well, I think they were screened against like-duty cycles in the next step of his analysis, but the very first initial step was to just look --

A Just develop the cost. Yes, that was the initial step. Sure.

Q And what I'd like to do is hand out the responses to 105 because I don't know if you have Exhibit 105 there with you again.

A Okay.

Q And if you look at Page 26 of that exhibit, which is

the data provided by Mr. Brinkworth --

A Yes.

Q -- then that shows exactly that very first initial step, the levelized dollar per megawatt hour and a description of the programs; correct?

A That is correct. Yes.

Q In your rebuttal testimony that was filed on November 21st of 2006 you stated as follows: "The 30-year levelized cost for TEC incorporating the updated capital cost estimate for TEC discussed in the rebuttal testimony of Paul Hoornaert and including sulfur dioxide, nitrogen oxides and mercury emission allowances prices is approximately $65.50 per megawatt hour. For informational purposes, consideration of the fuel and emission allowance prices corresponding to Hill & Associates' hypothetical carbon dioxide-regulated scenario as well as the updated TEC capital cost estimate results in the 30-year levelized cost for TEC of approximately $74.05 per megawatt hour."

Is this statement still true and correct to the best of your knowledge and belief?

A Yes, it is.

Q Can you explain what is meant by the term "levelized cost of energy"?

A Yes. The levelized cost of energy takes into consideration the capital cost of the alternative, and we'll

focus on supply-side alternative for this discussion. The capital cost of the supply-side alternative, fuel costs for the supply-side alternative, operation and maintenance costs and, in this case, SO2, NOx and mercury allowance prices.

It calculates an annual cost per megawatt hour which is then levelized based on the present worth discount rate, which for our analysis was 5 percent. So it takes into account the time value of those costs, aggregates all the costs over the 30-year period in this case and brings them back to current dollars.

Q Okay. And because you did not use the same methodology as the City of Tallahassee, you did not develop a dollar-per-megawatt-hour levelized cost for the 180 DSM programs that you analyzed; is that right?

A That's correct.

Q Now your analysis of cost-effectiveness for demand-side management programs was done using the FIRE model; is that right?

A Yes, ma'am.

Q And that's basically the initial method that you used to screen potential demand-side management programs. And you did -- you ran the FIRE model for DSM for JEA and FMPA; is that right?

A Yes. That's correct.

Q Okay. You did not run them for Reedy Creek or the

City of Tallahassee; is that right?

A That's correct. Reedy Creek --

Q Well, if I can --

A Oh, go ahead.

Q Okay. I can just maybe do this quicker.

And the reason you didn't run them for Reedy Creek is because with the exception of the thermal storage facility that Mr. Guarriello spoke about Reedy Creek has no demand-side management programs of its own. That's part of your reason; right?

A No, that's not part of my reason.

Q Well, is the -- is it true that Reedy Creek only has one program of its own, which is the thermal storage facility program spoken about by Mr. Guarriello?

A I don't think that's true.

Q Reedy Creek, not Walt Disney World or not the individual hotels.

A Okay. That may be true.

Q Okay. And that your understanding, based upon what Mr. Guarriello told you, was that Walt Disney World as well as the hotels were aggressively pursuing demand-side management conservation measures, all the measures that they deemed cost-effective; is that right?

A Yes. My understanding and the reason that no further analysis was performed was, as you mentioned, the unique

customer bases of Reedy Creek. Also taking into consideration Reedy Creek has a substantial need for additional capacity in the 2011/2012 time frame, coupled with their unique customer bases and the significant savings they're achieving through DSM already, there's no basis to believe that there are additional DSM measures that could be implemented and, therefore, none were evaluated.

Q Okay. Now with regard to the actual programs that Walt Disney World actually has in effect, its actual demand-side management programs, you made no independent analysis of that program, did you, any of those programs?

A That's correct. I did not.

Q Okay. And the same is true for any of the hotels that are part of Reedy Creek's system.

A Correct.

Q Okay. So you don't know if any of the programs that are actually being implemented by Walt Disney World at this time would pass the RIM test or not pass the RIM test; isn't that right?

A That's correct.

Q Okay. And the same would be true for the hotels; is that right?

A Yes, ma'am.

Q Likewise, you have -- since you didn't do a FIRE model evaluation of Tallahassee's new DSM portfolio, you don't

know how many of those, if any, would pass the RIM test; is that right?

A For the City of Tallahassee I don't know. I have done analysis of the City of Tallahassee's DSM portfolio, each of the measures included in that portfolio for FMPA and JEA, and none of those measures passed the RIM test.

Q Okay. So you had 180 programs that you looked at for FMPA and JEA, and those are listed on Pages 1 through 8 of Exhibit Number 105; is that right?

A I show them listed beginning on Page 10. Your question, if I might restate it, was the DSM measures evaluated for FMPA and JEA?

Q Let's see. If I look on NRDC's second set of interrogatories, which is Exhibit 105 -- do you have those?

A Yes, I do.

Q Okay. On Number 1 it says -- Table 1, it says, "List each DSM measure available or evaluated." And there's a list that starts on Page 2.

A Okay. Yes, I see that.

Q Okay. I was under the impression that those were the measures evaluated by -- in your DSM evaluation. Is that incorrect?

A No. You're correct.

Q Okay. Now ACEEE and other efficiency experts have stated in the Navigant report, which is Exhibit 106 in this

case, and in other reports that there are over 5,000 DSM programs currently available on the market. How did you choose the 180 that are listed here?

A The 180 DSM measures that are listed and were evaluated represent a wide range of end uses and are pertinent to residential, commercial and industrial customer classes.

Q Okay. Did you reference or consult any of the studies in the Navigant, referenced in the Navigant report regarding other DSM measures?

A No, I did not.

Q And you just testified and you said also at your deposition that there were industrial DSM measures considered. And looking on Pages 2 and 3 --

A Yes.

Q -- I can find residential and commercial but no industrial.

A Okay. The industrial measures are included in the commercial table, which I believe is Table 1 on Page 2.

Q Okay.

A And if you look, there's a description for the commercial measures, whether they affect what's labeled GSND, which is general service nondemand, GSD, which is general service demand, or GSLD, which is general service large demand.

GSND and GSD are commercial measures. GSLD, general service large demand, are the industrial measures.

Q Thank you. And would those GSLD also apply to manufacturing customers?

A They may if those manufacturing customers are classified as GSLD based on their demand.

Q Okay. Where do manufacturing customers -- do they -- in other words, what I'm trying to ask is is there any specific program that you evaluated aimed specifically at the manufacturing community?

A The manufacturing would likely fall under the GSLD or the industrial customers. Yes.

Q Okay. Now as I understood your testimony at deposition, these 180 programs are all new programs and not existing programs; is that right?

A That's correct.

Q Okay. And here's how I got a little confused about that.

When I look at your chart on Page 2, it says, "Commercial existing." And then it says on Page, on the next page, Page 3, "Commercial new." So how does that work?

A Well, it's -- commercial existing or residential existing, the nomenclature used in the application is the same. It means that the DSM measure targets existing construction, not that it's a program currently being offered by the applicant. The same with new. If it says new, it's a program aimed at new construction.

Another way to look at it is if it says existing, it would be kind of a retrofit of existing equipment. If it says new, you would install the equipment instead of standard equipment when constructing a new facility.

Q Okay. That's real helpful because I really was kind of confused about that.

Did you compare the 180 programs that you evaluated -- did you analyze the demand-side management programs that are currently in existence on FMPA's system or JEA's system to see if any of the programs that you analyzed were being implemented today?

A Yes, I did.

Q Okay. And what is the percentage of that?

A I don't think there were any that, that were evaluated that are currently being offered.

Q Okay. So all of the savings that could be realized from your 180 programs would be incremental savings on top of what they're already doing.

A Correct. The savings resulting from FMPA's, JEA's, Tallahassee's and Reedy Creek's individual DSM and conservation programs are reflected in their load forecasts. So, yes, my analysis would look at incremental DSM savings above and beyond what are being achieved by each applicant.

Q Okay. Do you know if FMPA keeps any data on their individual, or if their individual municipalities keep any data

as to how effective their existing programs are?

A I'm not familiar with how they track that information.

Q Okay. Do you know whether JEA does that?

A No, I don't.

Q Now in your FIRE model, can you briefly explain what the inputs are into that model?

A Yes. The FIRE model requires a number of inputs related to both the demand-side management measure being evaluated as well as the avoided unit, in this case Taylor Energy Center, as well as the utility's system. DSM measure inputs relate to energy savings, peak demand savings, ongoing or recurring costs for maintenance, if applicable, initial cost of implementing the DSM measure, any incentive that the utility would provide to the customer who implements the DSM measure, any administrative costs that would be incurred in implementing the DSM measure.

The assumptions related to the avoided unit would include capital costs, installed costs, operating and maintenance expenses, anything else related to the cost of the unit. And the FIRE model also takes into consideration the difference in system fuel costs between having the unit in place and not having the avoided unit on the system. And then the, from the utility's perspective existing utility rates are an input to the model as well.

Q Okay. Now I'm looking again on Page 2 where you laid out your analysis, and it says, "Customer kW reduction at the meter, customer kWh increase at the meter, customer kWh reduction at the meter."

What I'm interested in knowing is what is the time period indicated? For example, on the very first business on-call direct load control. Okay?

A Yeah.

Q And it says, "Customer kW reduction at the Meter 1. Customer kWh reduction at the Meter 1." Okay. So that's -- what -- over what period of time? Is this annually? What is it?

A Well, the example you discussed, on-call direct load control, is a direct load control program. So that would be occurring at the time of peak over the year. So it would reduce demand by one kilowatt when implemented.

I think it might be more illustrative to kind of go down to some of these other measures that have a higher kilowatt hour reduction associated with them.

Q Is this one -- I guess what I'm -- are these numbers annual numbers or are they -- I mean --

A Yeah. They're -- the numbers are annual numbers per participating customer.

Q Okay.

A Yes.

Q And where did these amounts come from? In other words, how did you -- I understand about the direct load control. That makes perfect sense. But for some of the other, some of the other measures, like if I go down to heat pump water heater for GSND and it says 4.65, where did that number come from? And that's down at the bottom, Mr. Kushner. I'll hold up my chart so you can see what that looks like.

A I see it. Thank you.

The heat pump water heater, again just for discussion purposes, it's a different type of heat pump water heater than would be the standard or using a heat pump water heater in place of a different type of water heater. So it's -- the customer kW reduction at the meter is based on information provided by manufacturers of the technology as far as efficiency gains that you would realize if you use the heat pump water heater. The same with the kWh reduction, it would be efficiency energy savings. So those are incremental kilowatt and kilowatt hour savings associated with the measure being considered.

Q Okay. And I believe you told me you got those from the industry, you got those from the manufacturer, the appliance guy.

Is there some database that the FIRE model uses for these?

A Not in particular. It's an ongoing database that I

maintain, and a lot of the information is available from consumer websites. You can get efficiency ratings on various appliances off of Home Depot's website, for example. Also there's different contracting and construction catalogues that include information on various different efficiency measures.

Q Okay. So this is a proprietary database that Black & Veatch maintains?

A More or less, yes.

Q Okay. And how often do you update that database?

A It's reviewed prior to being used in proceedings such as this. In addition, as more DSM programs or the costs associated with the DSM programs included in the database change, I'll update those appropriately. A good example is maybe five years ago the incremental cost for a fluorescent light bulb was $6. Now it's significantly lower. So as kind of time evolves and new events transpire it gets updated.

Q Okay. And I looked at the residential heat pump water heater estimates on your chart.

A Okay.

Q And got a 1,739-kilowatt hour a year reduction. And then I looked at the same measure on the City of Tallahassee's table, which is on Page 4, and they indicated it was a 2,102 annual kilowatt hour reduction. Is that just a difference in the databases?

A I don't see the initial number you pointed to. Can

you show me where that number is, please?

Q Yep, I hope so. It's the, it's the second from the bottom on Page 2 -- or Page 3. I'm sorry. You see where it says --

A Okay. Page 3.

Q -- "Add on heat pump water heater new residential"?

A Okay.

Q Okay. And then for, on Page 4 it says, "Heat pump water heater single family."

A Right. I see that. Yes.

Q Okay.

A I'm not terribly familiar with the source of the data presented in the City of Tallahassee's table as that was provided by a third party.

Q Uh-huh.

A So my speculation would be it's just a matter of looking at different sources.

Q Okay. And all of these measures were analyzed again on an individual basis. No programs were combined to reduce administrative or marketing costs or enhance or potentiate the effectiveness of programs.

A That's correct.

Q And am I correct that for FMPA they were modeled on an aggregate basis and no analysis was done for the individual 15 members, participating members?

A That's correct. The DSM evaluation for FMPA looked at the system costs associated with the dispatch of FMPA's all requirements project members on an aggregate basis, which is in actuality how the system is dispatched. Yes.

Q Okay. For the FMPA analysis you used the Kissimmee Utility Authority residential rates and the City of Leesburg rates for commercial; is that correct?

A Yes. Commercial and industrial. Yes.

Q Okay. And these were the lowest rates for those customer classes; is that right?

A Yes, ma'am.

Q Okay. Had you used the highest rates for residential or commercial, do you know what the effect on the model would be?

A Specifically I don't know what the changes would be. In general terms, use of higher rates decreases the cost-effectiveness of the DSM measures from the rate impact test perspective.

The decision to use the lower rates was actually in response to a request that I had received from the Public Service Commission staff in a previous need for power filing for FMPA in which we used the higher rates, and they requested that we rerun the analysis using the lowest rates. And that's the basis of my assertion that the lower rates actually provide more cost-effective results for the DSM.

Q Okay. Under the RIM test.

A Yes, ma'am.

Q Okay. Part of your model inputs that you discussed before was the total cost for the customer and the utility of implementing these programs. Do you know what payback period is assumed where customers are given rebates or incentives?

A Specifically I don't. The rebates that have been included are representative of what's being offered by other utilities who do offer similar programs.

One thing I'd like to point out too is a number of these show there's no rebate being offered by the utility. And when performing the analysis from the rate impact test perspective, that's a favorable assumption because if the utility had to incur additional costs, well, in this case any costs above zero, the results of the rate impact test would worsen.

Q Okay. And so you don't know whether the payback periods for these programs were less than two years or greater than two years?

A Again, I haven't specifically analyzed what the payback period would be. No.

Q And it could be that the payback period between programs is different; is that right?

A It could be. Yes.

Q And I think you told us that you used the rates for

each individual utility because obviously that's a necessary input into the RIM test. And the total cost for the avoided unit, is what you used in this FIRE analysis the -- I'm going to say this wrong -- $2,078,084,000 updated TEC cost?

A Give me a moment to check something, please.

Q Sure.

A Yes. That capital cost you referenced, just hopefully to avoid confusion in the future, is representative of the updated capital costs for Mr. Hoornaert for the unit and includes the cost for the initial coal pile that I added. And from an avoided unit perspective, in the FIRE model I also included transmission costs and losses.

Q Okay. And the transmission costs and losses that you included, those were in part of the record with Mr. Myers?

A No, I don't think it was Mr. Myers. Just for the sake of simplicity, I've discussed what those costs are throughout the application. They're based on the tariff rates for FPL and Progress Energy for JEA because at JEA we use both FPL's and Progress Energy's systems to get capacity from Taylor Energy Center to their service territory. And the rates used in the FIRE model for FMPA were based on Progress's rates as they would use Progress to get capacity from Taylor to their service territory.

Q And that's Progress's OASIS rates; right?

A Their tariff rates. Yes. Yes, ma'am.

Q Their tariff rates.

Okay. The fuel costs that you used are Latin American coal plus pet coke less than 30 percent; correct?

A That's correct. Yes.

Q Okay. And are those Mr. Myers' numbers, so they're adjusted Hill & Associates numbers?

A Yes. They are the delivered fuel price projections provided by Mr. Myers.

Q And did you use the same figures in this FIRE model for capital costs and fuel costs as were used in the base case for TEC?

A The updated cost estimates.

Q Right.

A Yes. The O&M costs are all the same also.

Q Okay. And did this include addition of the activated carbon injection variable O&M costs testified to by Mr. Hoornaert?

A No. The -- let me back up.

The capital costs for the activated carbon injection system is included as testified to by Mr. Hoornaert. The O&M costs were not included.

Q Okay. And did this include revised labor costs for the operation of the plant as testified to by Mr. Hoornaert?

A There are no revised labor costs.

Q Okay. Now the output of this FIRE model is contained somewhere starting on Page 10 of interrogatory -- that's, that's Interrogatory Number 3, is that right, of Exhibit 105?

A Yes, ma'am.

Q Okay. And that shows, describes the DSM measure and then gives a rate impact test ratio, a participant ratio and a total resource test ratio; is that right?

A That's correct.

Q Okay. And the ratio that's shown here is the ratio of the costs of the DSM program to the costs of the avoided unit, which in this case is TEC; right?

A It's a benefit-to-cost ratio; the benefits of the DSM program versus the costs of DSM program.

Q Okay. And the same TEC data is used for all of the applicants; right?

A The same capital costs, operating costs, fuel cost assumptions.

Q Right.

A Yes, ma'am.

Q Okay. And if I'm reading this correctly, none of the 180 programs screened passed the RIM test; right?

A That's correct.

Q Okay. And that's the basis for your conclusion that there is no cost-effective DSM measures that can reduce or defer the 765-megawatt TEC unit; is that right?

A Yes, ma'am.

Q And you have different values for FMPA and for JEA because obviously they have different operating costs.

A Completely different systems.

Q Right.

A Yes.

Q And also different rates, I assume.

A Yes, ma'am.

Q Now on Exhibit Number 3 you did a DSM sensitivity analysis. And you did that for -- I don't think it's reflected on Exhibit 3. Let me strike that. Let me say you did do a DSM sensitivity analysis for FMPA and JEA as well; right?

A It wasn't a sensitivity analysis. It was the DSM analysis for FMPA and JEA.

Q Okay.

A Yes.

Q And, well, here's what I'm asking about. I thought at your deposition you told me that you did a high fuel sensitivity DSM analysis and a regulated CO2 sensitivity analysis.

A For FMPA and JEA, that's correct. Yes.

Q Okay. And in the high fuel sensitivity analysis I assume that you used Mr. Myers' high fuel numbers.

A That's correct.

Q And in the regulated CO2 sensitivity analysis did you

use Mr. Preston's MP-5 numbers?

A Yeah. I think there might be a little bit of confusion on this.

The previous question you asked, I used Mr. Myers' high fuel price numbers, which Mr. Preston provided the commodity costs for the fuels under a high fuel scenario and the emission allowance prices, and then Mr. Myers accounted for the various components of transportation and delivery to get a delivered cost estimate. So, yes, I used the high fuel costs provided by Mr. Myers based on the high fuel sensitivity developed by Mr. Preston. And similarly for the regulated CO2 case, used the delivered fuel prices provided by Mr. Myers based on the projections provided by Mr. Preston.

Q Okay. In order for me to understand this, let me just see if this is right. On your high fuel sensitivity analysis for DSM you used all of Mr. Myers' numbers.

A Correct. For the high sensitivity. Yes.

Q Okay. But for the regulated CO2 sensitivity DSM analysis you used all of the numbers on Mr. Preston's MP-5.

A No. Those numbers presented by Mr. Preston on Exhibit MP-5 did not include delivery costs. Mr. Myers provided the delivered fuel costs for the regulated CO2 sensitivity.

Q Okay. And is that in the record anywhere, Mr. Kushner?

A I believe it was in -- well, I believe it's in Mr. Myers' testimony, and I also believe it's in Section A.4 of the application. There's a delivered price forecast for the base case, low case, high case and regulated CO2 sensitivities. If you'd like me to take a minute, I can point you to that.

Q No. That's fine. I'll look. I was just trying to figure out if they were the same, if they were matched up. That's all. And apparently they are. Thank you.

Now since none of these DSM tests passed the RIM test you could have stopped at that, that step of the DSM evaluation. Is it correct that you went ahead with the next step, even though no programs passed the RIM test?

A What is the next step?

Q I think you, in your deposition on Page 26 you described the methodology for if a test passes the RIM test, what one does next.

A I believe what I described in my deposition is the methodology I used in support of a statement in my testimony about if you ignore the results of the rate impact test but look at the measures that pass the total resource test for FMPA or JEA, there are a number of assumptions you need to make to determine if all of those measures that passed the total resource cost test were implemented, how much capacity could be saved.

Q Okay.

A Yes.

Q And you did, in fact, do that analysis; is that correct?

A I did. Yes.

Q Okay. And is it true that as a result of that analysis JEA could save about 100 megawatts?

A That's correct. Yes.

Q And FMPA could save about 200 megawatts?

A That's correct. Yes.

Q You've made, made statements at your deposition concerning how, quote, ambitious the City of Tallahassee's DSM portfolio is, and you also made statements in your revised rebuttal at Page 7 comparing the projected results of the savings that the City of Tallahassee anticipates will be realized with those of Florida Power & Light. Do you remember those statements, Mr. Kushner?

A Yes, ma'am.

Q And I believe that you said that you had looked at the 2006 Ten-Year Site Plan of FPL and determined that FPL had savings of 12 percent demand and 4 percent energy; is that right?

A During 2005, yes.

Q Yes.

A That was FPL's actual savings.

Q Okay. What type of independent study have you done

to confirm that these savings are, and I quote, the largest demand savings from conservation of any utility in the United States?

A FPL had made a presentation earlier this year in the, I believe it was the cost recovery clause hearing to the Public Service Commission. In that presentation they presented a number of slides. One of the slides indicated that that was indeed FPL's position related to conservation. I have made no attempt to independently verify that.

Q Do you have any idea how Tallahassee's new demand-side management portfolio compares with that of FPL?

A As far as the measures that are included?

Q Yes, sir.

A No, ma'am, I don't.

Q And do you know how rigorously Florida Power & Light markets its DSM programs?

A No, I don't.

Q Do you know how its marketing efforts compare to those proposed by the City in this case?

A No, I do not.

Q Okay. And do you also know how often FPL monitors its demand-side management programs in order to improve their effectiveness?

A No.

Q Is it true that all of those factors could directly

influence the amount of demand and energy savings actually realized by Florida Power & Light or the City of Tallahassee?

A Yes.

Q Is JEA the only applicant whose annual sales to end-use customers is greater than 2,000 gigawatt hours?

A Without reviewing each application right now, I don't know.

Q Okay. Is it true that you have to have sales of more than 2,000 gigawatt hours to be regulated for your conservation goals to be set pursuant to the conservation goals docket in Section 366.82?

MR. PERKO: Calls for a legal conclusion.

CHAIRMAN EDGAR: Why don't you rephrase.

MS. BROWNLESS: Okay. Maybe I can just take a minute and --

CHAIRMAN EDGAR: Yes.

BY MS. BROWNLESS:

Q Is the forecast for the individual utility applicants here the energy and demand forecast for each applicant in this record, Mr. Kushner?

A I don't understand your question. If you're asking did I use the demand and energy forecasts presented in the application for each applicant in my analysis, the answer is yes.

Q Okay. I understand that. My question is is there

somewhere in this application where the actual energy and demand forecasts are stated?

If he knows, great. If he doesn't know, that's fine.

MR. PERKO: The record speaks for itself obviously.

CHAIRMAN EDGAR: Ms. Brownless --

MS. BROWNLESS: I'll move on.

CHAIRMAN EDGAR: Thank you.

BY MS. BROWNLESS:

Q For your sensitivity analysis of the IGCC that's on the second charts of Table Number 3, did you revise the capital costs for IGCC as well as the capital costs for TEC?

A Yes. As discussed by Mr. Klausner, the capital cost was updated for the IGCC alternatives.

Q And did you also revise the O&M costs for IGCC as well?

A No. There's been no adjustments made to O&M costs.

Q If you can look at your revised rebuttal on Pages 10 and 11.

A Yes.

Q And in this section you talk about the Synapse CO2 allowance projections; is that right?

A Yes, ma'am.

Q And the --

MR. PERKO: I'm sorry, Counsel. I'm sorry, Counsel. Could you say where you are in the testimony?

MS. BROWNLESS: I'm on Page 10 of his revised rebuttal.

MR. PERKO: Thank you.

BY MS. BROWNLESS:

Q And do you happen to have a copy of what's been marked as Exhibit 79, which is Dian Deevey's Exhibit Number 5, the Synapse Energy report? We can provide it to you, if you need it.

A I don't have one up with me right now.

Q And I'm just going to hand you Pages 39 through 42 of that report. Just because we all don't have --

A Okay.

Q In the excerpt that I handed out, Mr. Kushner, are those Pages 39 through 42 of the Synapse report?

A Yes.

Q Okay. And if you could just look at the chart on Page 40, please.

A Okay.

Q Okay. And this shows a low, mid and high case for CO2 emissions; is that correct?

A Yes, it does.

Q All right. At your deposition you were asked by staff how Mr. Preston's CO2 emissions generally compared to the Synapse studies. Do you remember that?

A Yes, ma'am.

Q Okay. And can you take a minute to look at these Synapse low, mid and high case and tell me if the Synapse low energy forecast is higher or lower than that of H&A?

A In some years Hill & Associates' forecasts of CO2 emission allowance prices are higher than those provided by Synapse, other years they are not.

Q Okay. Would you accept, subject to check, that in the years 2011 through 2017 Hill & Associates' are higher than the low case forecast?

A Yes, ma'am.

Q Okay. And that for the years 2017 through 2030 they are lower than the Hill & Associates forecast?

A Subject to check, yes.

Q Okay. And is it true that the Hill & Associates forecast is lower than Synapse Energy's mid forecast throughout the entire period?

A Yes.

Q And that's also true for their high forecast; correct?

A Yes.

Q And so your testimony then would be consistent with the chart that Dr. Lashof prepared that was attached to what's been marked for identification but not admitted as Exhibit 110?

MR. PERKO: Objection, Your Honor, or Madam Chair. I think that's just a backhanded way of trying to get evidence

that was excluded into the record.

CHAIRMAN EDGAR: Ms. Brubaker.

MS. BRUBAKER: I suppose if there's a way to rephrase the question or if you can -- if the exhibit is not, hasn't been admitted, I --

MS. BROWNLESS: We understand it hasn't been admitted. And all we're trying to do, Your Honor, is to proffer the question pursuant to the rule. And if he can answer the question, that's fine. I'll understand that it's a proffer, if the Chair so rules.

CHAIRMAN EDGAR: Mr. Perko.

MR. PERKO: So long as it's understood it's a proffer, that's fine.

CHAIRMAN EDGAR: So noted.

Ms. Brownless, why don't you pose it again.

MS. BROWNLESS: Yes, ma'am.

BY MS. BROWNLESS:

Q And so, therefore, your testimony today is consistent with the chart that Dr. Lashof prepared that has been marked for identification as Exhibit 110?

A I don't have that chart in front of me.

(Witness handed exhibit.)

The chart I was handed shows that Hill & Associates' CO2 emission allowance forecasts are higher in some years and lower in other years than Synapse.

Q Consistent with your testimony; correct?

A Yes, ma'am.

Q Thank you.

CHAIRMAN EDGAR: Ms. Brownless, let me interject for just a moment. The questioning of this witness has been, by my count, a little over an hour. Can you give me a feel for about --

MS. BROWNLESS: We have two questions and we're done.

CHAIRMAN EDGAR: Two more questions to go. All right.

BY MS. BROWNLESS:

Q You did not conduct a rate study to determine the projected rate impact on TEC of any of the participants, did you?

A That's correct.

Q Now my understanding is that it is your opinion that the City of Tallahassee's participation in TEC will still be cost-effective for them; is that correct?

A Yes, ma'am.

Q Okay. And is the basis for that statement that the City will be replacing its existing higher cost natural gas-fired combined cycle power with lower cost baseload coal power?

A That's true to an extent, but -- and I'm under the assumption you're referring to -- well, what are you referring

to, which particular case?

Q Here's what I'm trying to get at.

A Okay.

Q In this case we've heard testimony that the City's projected forecast for its current demand-side management portfolio will defer its need for power from 2012 to 2016; is that correct?

A It may defer its need. Yes.

Q Okay. They project that it will do so.

And during the four years that its need has been deferred my understanding is that it's your opinion that it would still be cost-effective for the City to participate in TEC in 2012; correct?

A Yes, ma'am.

Q Okay. And the basis for that understanding is that higher priced, the City's higher priced natural gas-fired combined cycle capacity would be replaced by lower cost TEC coal capacity; is that right?

A Yes. It's not just natural gas combined cycle capacity. They do have other gas units on their system. And over the 2035, 2035 evaluation period, actually by 2025, even if the City's DSM portfolio realizes the savings projected, they will have a need for approximately 130 additional megawatts. So there is a time, even if those DSM savings are realized, where they do need the capacity, and that need starts

in 2016. So it's a combination of those factors. Yes.

Q Okay. And if I understand your analysis, is it true that as long as the City needs any amount of capacity during the years 2012 to 2016 the TEC unit will still be the most cost-effective unit in your opinion?

A Yes, ma'am.

MS. BROWNLESS: Thank you. That's all I have, ma'am.

CHAIRMAN EDGAR: Mr. Paben?

MR. PABEN: I don't have any additional questions.

CHAIRMAN EDGAR: Okay. Mr. Jacobs.

MR. JACOBS: Thank you, Madam Chairman. I have a bit.

CHAIRMAN EDGAR: Can I -- I'm sorry. Can you give me an approximate idea?

MR. JACOBS: About 20 minutes.

CHAIRMAN EDGAR: Okay. Let's go ahead and just give the witness and the rest of us a few minutes to stretch. We will come back at five after. And don't go real far, but let's just take a few minutes.

(Recess taken.)

BY CHAIRMAN EDGAR:

Q We will go back on the record.

Mr. Jacobs.

MR. JACOBS: Thank you, Madam Chair.

CROSS EXAMINATION

BY MR. JACOBS:

Q Good afternoon, Mr. Kushner.

A Good afternoon, Mr. Jacobs.

Q I'd like to just touch on just a few brief points. First, let's go back to the question of capital costs. I believe earlier today in your testimony you indicated that you had relied on Mr. Hoornaert in his analysis of the revised capital cost numbers; is that correct?

A I relied on Mr. Hoornaert's revised capital costs for the Taylor Energy Center and Mr. Klausner's revised capital costs for the alternatives.

Q Okay. And I also believe that you testified when questioned about labor costs that there were no revised labor costs in the updated capital costs?

A I believe the question related to operating labor costs. There are no revised operating labor costs.

Q Okay. So let's then ask the question about are there updated labor costs that apply to TEC?

A Those are reflected in the updated capital cost estimate for Mr. Hoornaert. Yes.

Q Okay. And do you know what that number is?

A No, sir, I don't.

Q Okay. In his, in his deposition transcript, we don't need to turn there, subject to check, on Page 24 he indicates that there's a 3.5 percent factor for updated labor costs.

Does that sound reasonable to you?

A Subject to check, sure.

Q Okay. And then, so then my question would then be the cost analysis, cost sensitivity analysis, does it reflect that increase?

A Yes, sir, it does.

Q Okay. In, in your cost analysis, the element for fuel, am I to understand that you used cost projections for, particularly I'm speaking to natural gas now, that came from Hill & Associates or from another --

A The natural gas price projections I used in my model were the delivered natural gas price projections provided by Mr. Myers.

Q Okay. And that, and those projections produced the results that were earlier discussed on the, on the tables, the sensitivity analysis tables that you spoke to earlier?

A Yes. There's the base case and then there's the high fuel and the low fuel and the regulated CO2 sensitivity. Yes.

Q Okay. Now are you aware that the City of Tallahassee in its integrated resource planning uses gas, projected gas prices from another source?

A I'm aware of that. Yes.

Q And are you aware of what the results were in Tallahassee's revenue requirements analysis using those, those natural gas prices?

A Those natural gas prices were not used in the need for power application.

Q Okay. Okay. I accept that. But they were used in Tallahassee's IRP; correct?

A Yes.

Q And are you aware of what those results were?

A I'm aware that there were literally hundreds of cases analyzed in Tallahassee's IRP. So if you can be more specific, I might be able to answer your question.

Q Sure. Fair enough. I'd be particularly interested in the -- just one moment.

I'm pretty sure this is the, the, their cost analysis of, from 2007 to 2016 comparing gas, coal and pet coke, and I think this is the base case. This is the coal, coal purchase base case.

A I don't know what you're referring to, sir.

Q Okay. Well, I don't have copies, so I'll move on.

Let me ask this question. Are you aware that in Tallahassee's IRP that the cost difference between their participation in TEC and a coal, I'm sorry, a gas option in the year, in the years 2014, 2015 where the difference was negligible?

A I don't know that it was negligible. Again, I'm not quite sure which case and which scenario you're referring to in their IRP.

Q Okay.

A If you could be more specific.

Q This -- and I won't belabor this too long, but let me just try one more, one more stab at it.

There is a gas base case analysis that was done looking at the years 2007 to 2016 and then there was a coal purchase base case analysis, again looking at the same time period. And in the gas case the, the differences were basically zero between TEC and the gas up through 2015 and in the coal purchase they were, the differences were small.

A I'm sorry. I really have a difficult time --

Q Okay. We'll move on.

A -- answering that without being able to see anything.

Q Okay. We'll move on.

Let's talk a little bit about DSM. Your resume indicates that you conducted DSM cost-effectiveness analyses prior to TEC for OUC and JEA. Are there any other projects where you did that?

A Yes, sir. FMPA's Treasure Coast Energy Center Unit 1 Need for Power Application, OUC, Orlando Utility Commission's Stanton Energy Center Unit B, OUC's 2004 Numeric Conservation Goal and Demand-Side Management Plan, JEA's 2004 Numeric Conservation Goals and Demand-Side Management Plan. I believe those are the analyses that I have performed and submitted to the Public Service Commission in the past.

Q And in all of those what was the cost-effectiveness process analysis used?

A The cost-effectiveness --

Q Test used. Yes. Which test?

A -- test used? Yes, it was the rate impact test.

Q In all cases?

A Yes, sir.

Q Are you familiar with any recent assessments of DSM resources? Of course, in this instance we've done, we've done -- we've utilized the FIRE model and we've discussed already Tallahassee's cost-effectiveness test. Are you aware of assessments done by any other bodies in Florida using one or another -- one -- either one of those or another rate impact test?

A No, I'm not.

Q Okay. Are you familiar with the analysis that was recently done by the City of Gainesville?

A No, sir.

Q Okay. In the, in the assumptions that were utilized for cost-effectiveness screening of DSM, have, have you done -- did you do an analysis of input assumptions of variables that looked at end-use profiles or end-use consumption?

A I don't know that I understand your question. My analysis included various, a wide range of various end uses across the three commercial, industrial and residential

customer classes. So in that sense, yes, I did.

Q Let me be a bit more specific. For each -- for any -- each individual applicant or for any individual applicant did you go look at their particular -- we heard from FMPA that they collect, that their members collect load information. Did you go to FMPA and review the load and consumption information that came from their individual members?

A No, sir.

Q Okay. JEA?

A No, sir.

Q And I won't go through all the others. I'm assuming that would be the same answer for all the others?

A That's correct.

Q Okay. Did, did you -- just one moment. I'm sorry. Did you, did you screen the, the measures that you looked at, the 180 that you looked at, did you screen them for pertinence and relevance? And let me, let me talk specifically in the, in terms of whether or not they met existing building codes or, or whether they passed existing local ordinances.

A Yes. An example would be a high efficiency air-conditioning unit. I considered what the standard is now and I considered what a more energy efficient rated air-conditioning unit would be.

Q On -- you have your responses to NRDC's second set of

interrogatories before you?

A Yes, sir.

Q In Table 1, and I believe that's on Page, I'm looking at Page 3, and I'm specifically looking in the residential existing section.

A Yes.

Q And, and I guess this is the eleventh or twelfth line into that section, there are some lines there for ceiling insulation.

A Yes, sir.

Q Are you aware of whether or not those, those particular measures prescribed are passing building code?

A I'm not certain what the building code for insulation is, but the intent of those measures is to consider an existing residential structure that in the first case maybe doesn't have any insulation and would upgrade to R-19, and the second case looks at a building that has R-19 and would upgrade to R-30.

Q I see. And, and so if, if -- and let's compare it, do kind of a comparison. Whereas Tallahassee would go and look at, as we understand Mr. Brinkworth's testimony, they would go and look at their actual customer's existing status and then make a determination as to what DSM measure would be actually used by that customer, bring them up to code, and then look at how that would affect their load and their consumption. Here you simply look at a base case of whether or not they did not

have and put in 19 and then if they had put it from 19 up to 30. Is that a fair analysis, fair comparison?

A That's what I did. Yes.

Q Okay. Okay. Mr. May in his testimony indicated that there, there are a fair number of large customers that are served by members of FMPA, and in the analysis, in their assessment of DSM they generally rely on audits done by energy services companies. Did you have the benefit of data from these companies in your analysis?

A Not directly from any energy services companies. No.

Q Okay. Did, did you look outside of -- and I heard your testimony regarding using Florida Power & Light's analyses as a benchmark. Did you look outside of that particular analysis for any other, for any other benchmarks as to what, what would be a reasonable goal for results?

A No. My analysis didn't consider what would be a reasonable goal per se. My analysis evaluated the 180 DSM measures that have been presented.

Q And do you know -- well, let me ask you this question. I believe you indicated that in terms of the technologies, underlying technologies for your 180, that you looked at the latest technology that will apply for each one of those 180. Was that your testimony?

A Yes, sir.

Q And how -- as of what date? As of when?

A I don't remember the specific date, but the technology doesn't change on a daily basis. It was reviewed prior to conducting the DSM analysis for this need for power application.

Q Okay. Now in, in the contrast between what the FIRE model provides in terms of, of a metric, if you will, and what, what the Tallahassee analysis provided in terms, in terms of results, I believe you spoke about this earlier, you indicated that Tallahassee looked at duty periods and, and you do not.

Isn't the only difference there is whether or not a particular measure covers that duty period that they looked at in terms of -- that's -- I'm sorry. Let me ask that first question. Isn't the only issue whether or not a measure covers a duty period?

A The only difference pertaining to what?

Q Between your analysis and the FIRE, and the FIRE model and what the City of Tallahassee did.

A No, that's not the only difference.

Q Let me ask the question this way. In terms of understanding the cost-effectiveness of a DSM model, okay, the idea that Tallahassee looks at duty periods is not a -- strike that.

Let me ask -- I want to ask the other, the back side of that question. The fact that FIRE looks at measures outside of their duty periods is not a true determinant of its

cost-effectiveness; is that true?

A Well, the FIRE model doesn't look at duty measures or measures outside of their duty cycle. What the FIRE model does is -- part of the inputs which I explained earlier, the kilowatt reduction and the kilowatt hour reduction, between those two that's essentially representative of, call it an equivalent loading factor of the DSM measure. If you're talking about a supply-side option, it would have a capacity factor.

So the FIRE model takes into account the capacity reduction and energy reduction associated with the DSM measure and compares that to the impact on system costs of having the avoided unit, in this case Taylor Energy Center, in as a generating resource versus not having the unit in as a resource. So because you're considering both the savings at peak and annual generation savings, it's implicit that it does consider the duty cycle.

Q Let me be sure then. So you're saying that the FIRE model will consider savings at peak?

A The FIRE model considers both savings at peak and annual energy reductions as appropriate. Again, if it's a direct load control measure, there may not be any energy savings. It would just be peak savings.

Q Okay.

A If it's a different measure, it will consider both.

Q That, that -- explain to me a little bit more about that last statement, whether it's direct control measures.

A Direct load control measure is designed to control the customer's load through various methods by shutting down maybe their air-conditioning unit at the time of peak. So it's an instantaneous type reduction compared to an annual reduction.

Q And that would be the limit of what you looked at, and FIRE would be those kinds of measures?

A No, sir. That is one type of measure I looked at in the FIRE model. The other measures include, and I'll be happy to go through the list of them with you right now.

Q No. No. No. No. No. No. Let me be more precise.

In terms of dealing with a timing issue, okay, we were talking about how FIRE compared in terms of looking at duty, not looking at duty cycles compared with the City of Tallahassee's process, and my understanding from your testimony is that your, your process to look at timing and in our discussion looking at peaking, savings from peak was this idea of direct load control; is that correct?

A No. I just used that as a point of illustration.

Q Then that was -- so there are other ways that you look at direct load control outside of those kinds of programs in your DSM modeling.

A I only looked at direct load control using the FIRE

model.

Q Okay. And you indicated that you have industrial measures in a GSLD; those are your industrial targeted.

A Yes, sir.

Q And you, again, did you inquire or look at the actual end uses amongst the applicants of industrial?

A No. Due to the variety of measures that were evaluated, it's a representative range of end uses.

Q Okay. Now in -- so then the bottom line conclusion is, is from FIRE you looked at the 180 and you came up with none that passed your test, that were cost-effective, let me put it that way, and that's the essence of your conclusion that, that as the statute requires that there are no measures that can mitigate the need of any applicant to this, to this, to this petition?

MR. PERKO: I'd just object to the extent that that mischaracterizes the statutory test.

CHAIRMAN EDGAR: Mr. Jacobs, I'm, I'm going to ask you to ask clearer questions.

MR. JACOBS: Thank you.

BY MR. JACOBS:

Q Are you aware -- what is your interpretation of what's required in doing the DSM analysis for purposes of a need determination?

A Evaluate reasonably available DSM measures which may

cost-effectively mitigate the need for the proposed unit.

Q And, and your FIRE analysis is, is, is that, is intended to fill that need in this particular petition.

A Yes, sir. And use of the model would be consistent with previous Commission findings that it is an appropriate tool, an appropriate model to analyze the cost-effectiveness of DSM measures.

MR. JACOBS: And just, just one minute, Madam Chair. I think I may be done. One, one quick moment.

That's all I have.

(Transcript continues in sequence with Volume 11.)

STATE OF FLORIDA)
: CERTIFICATE OF REPORTER
COUNTY OF LEON)

I, LINDA BOLES, CRR, RPR, 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 9th day of January, 2007.

Linda Boles

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